

Arizona State University

Course Catalog Archive 2021-2022



This document provides an archival record of the course catalog offered during the 2021-2022 academic year. It is a printable option of the online course catalog for accreditation organizations, agencies and university offices for data collection, evaluation purposes and referencing. The courses presented in this archive may no longer be offered. For current course information and offerings, refer to the online version of the course catalog.

For inquiries or questions please contact academic.catalog@asu.edu.

<u>Course Prefix</u>	<u>Description</u>
ABS	Applied Biological Sciences
ACC	Accountancy
ACO	Applied Computing
ACT	Actuarial Sciences
ADE	Architectural Design and Technology Studios
AEE	Aerospace Engineering
AEP	Applied Ethics and the Professions
AES	Aerospace Studies
AET	Aeronautical Engineering Technology
AFR	African and African American Studies
AGB	Agribusiness
AIS	American Indian Studies
ALA	Architecture and Landscape Architecture
ALD	Aging and Lifespan Development
ALT	Alternative Energy Technologies
AME	Arts, Media, and Engineering
AML	Applied Mathematics for the Life & Social Sciences
AMS	American Studies
AMT	Aeronautical Management Technology
ANB	Animal Behavior
ANP	Environmental Analysis and Programming
APA	Asian Pacific American Studies
APH	Architectural Philosophy and History
APL	Applied Linguistics
APM	Applied Mathematics
ARA	Art Auxiliary
ARB	Arabic
ARC	Architecture
ARE	Art Education
ARP	Architecture Professional Studies
ARS	Art History
ART	Art
ASB	Anthropology (Social and Behavioral)
ASC	Applied Science Core
ASL	American Sign Language
ASM	Anthropology (Science and Mathematics)
AST	Astronomy
ASU	ASU
ATC	Air Traffic Control
ATE	Architecture and Landscape Architecture

<u>Course Prefix</u>	<u>Description</u>
ATP	Art Therapy
BCH	Biochemistry
BCS	Serbo-Croatian
BDE	Biological Design
BIO	Biology
BIS	Bachelor of Interdisciplinary Studies
BLE	Bilingual Education
BMD	Biomedical Diagnostics
BME	Bioengineering
BMI	Biomedical Informatics
BMY	Biomimicry
BUA	Business Administration
BUS	Business
CAP	Counseling and Applied Psychological Science
CAS	Complex Adaptive Systems
CDE	Child Development
CDH	Computational Digital Humanities
CED	Counselor Education
CEE	Civil and Environmental Engineering
CEL	Civic and Economic Thought and Leadership
CEN	Computer Engineering
CGF	College of Global Futures
CHE	Chemical Engineering
CHI	Chinese
CHM	Chemistry
CHS	College of Health Solutions
CIS	Computer Information Systems
CMN	Communication Studies
CNE	Construction Engineering
COE	College of Education
COM	Communication
CON	Construction
CPI	Computing & Informatics
CPP	College of Public Programs
CPY	Counseling Psychology
CRD	Community Resources and Development
CRJ	Criminology and Criminal Justice
CSE	Computer Science and Engineering
CSM	Community Sports Management
DAT	Data Science

<u>Course Prefix</u>	<u>Description</u>	<u>Course Prefix</u>	<u>Description</u>
DBA	Doctor of Business Administration	FRE	French
DCE	Dance	FSE	Fulton School of Engineering
DCI	Curriculum and Instruction	FSH	Fashion
DNP	Doctor of Nursing Practice	GAP	Global Academic Preparation
DSC	Design	GBL	Global Launch
DSE	Data Science, Analytics and Engineering	GCU	Cultural Geography
DST	Disability Studies	GDE	Global Digital English
ECD	Early Childhood Education	GER	German
ECN	Economics	GIS	Geographic Information Science
ECS	Early Childhood Special Education	GIT	Graphic Information Technology
EDA	Education Administration and Supervision	GLE	Global Education
EDP	Educational Psychology	GLG	Geological Sciences
EDS	Environmental Design	GPE	Global Professional English
EDT	Educational Technology	GPH	Physical Geography
EDU	Educational Studies	GRA	Graphic Design
EED	Elementary Education	GRD	Graduate Education
EEE	Electrical Engineering	GRK	Ancient Greek
EET	Electronics Engineering Technology	GSC	Global Security
EGR	Engineering	GTD	Global Technology and Development
ELL	English as a Second Language	HCA	Health Care Aging
ELS	Environmental Life Sciences	HCD	Science of Health Care Delivery
EMS	Executive Sustainability Leadership	HCI	Healthcare Innovation
ENG	English	HCR	Health Care Related
ENT	Entrepreneurship	HCS	Health Care Simulator
ENV	Environmental Science	HDA	Herberger Institute for Design and the Arts
EPA	Education Policy Analysis	HEB	Hebrew
EPD	Environmental Design and Planning	HED	Higher and Postsecondary Education
ERM	Environmental Resource Management	HEP	Health Education & Health Promotion
ESS	Environmental Social Science	HHE	Healthcare and Healing Environments
EST	Electronic Systems Technology	HIM	Health Information Management
ETH	Ethnic Studies	HIN	Hindi Studies
EVE	Environmental Engineering	HON	Honors
EVO	Evolutionary Biology	HPS	History and Philosophy of Science
EXW	Exercise and Wellness	HRC	Humanities, Arts & Cultural Studies
FAS	Family Studies	HSC	Health Sciences
FIN	Finance	HSD	Human and Social Dimensions Science and Technology
FIS	Future of Innovation in Society	HSE	Human Systems Engineering
FMP	Film and Media Production	HSM	Health Sector Management
FMS	Film and Media Studies	HST	History
FOR	Forensics	HUL	Humanities Lab

<u>Course Prefix</u>	<u>Description</u>
IAL	International Affairs and Leadership
IAP	Interdisciplinary Arts and Performance
IAS	Integrative Studies
IBC	Integrated Behavioral Care
IDN	Indonesian
IDS	Interdisciplinary Studies
IED	Indian Education
IEE	Industrial Engineering
IFT	Information Technology
IGD	Innovation in Global Development
IND	Industrial Design
INT	Interior Design
IPI	Interplanetary Initiative
ISS	Integrative Social Science
ITA	Italian
IVD	Innovation and Venture Development
JHR	Social Justice and Human Rights
JMC	Journalism and Mass Communication
JPN	Japanese
JST	Jewish Studies
JUS	Justice Studies
KIN	Kinesiology
KOR	Korean
LAA	Landscape Architectural Administration
LAP	Landscape Architecture Professional Studies
LAS	Latin American Studies
LAT	Latin
LAW	Law
LDE	Landscape Architectural Design & Technology Studies
LDT	Learning Design and Technologies
LES	Legal and Ethical Studies
LIA	Liberal Arts and Sciences
LIN	Linguistics
LPH	Landscape Architectural Philosophy and History
LSC	Life Sciences
LSE	Learning Sciences
LST	Liberal Studies
LTC	Landscape Architectural Technology
MAE	Mechanical and Aerospace Engineering
MAS	Masters of Arts in Interdisciplinary Studies

<u>Course Prefix</u>	<u>Description</u>
MAT	Mathematics
MBB	Molecular Biosciences/Biotechnology
MCB	Molecular and Cellular Biology
MCE	Multicultural Education
MCO	Mass Communication
MDC	Music and Digital Culture
MDL	Medical Laboratory Science
MED	Medical Studies
MEE	Mechanical Engineering
MET	Mechanical & Manufacturing Engineering Technology
MFG	Manufacturing Engineering
MGT	Management
MHL	Music History/Literature
MIC	Microbiology
MIS	Military Science
MKT	Marketing
MLS	Master of Liberal Studies
MND	Mandarin Chinese
MSA	Modern Standard Arabic
MSC	Music
MSE	Materials Science and Engineering
MSI	Music Scholarly Inquiry
MTC	Music Theory and Composition
MTE	Mathematics Education
MUD	Urban Design
MUE	Music Education
MUP	Music Performance
MUS	Music
NAN	Nanoscience
NAV	Naval Science
NEU	Neuroscience
NEW	New College
NLM	Nonprofit Leadership and Management
NTR	Nutrition
NUR	Nursing
OBS	Obesity Prevention and Management
OGL	Organizational Leadership
OMT	Operations Management Technology
PAF	Public Affairs
PAX	Peace Studies

<u>Course Prefix</u>	<u>Description</u>
PBH	Public Health
PHI	Philosophy
PHS	Physical Sciences
PHY	Physics
PIT	Public Interest Technology
PLB	Plant Biology
PLC	Polish Languages and Culture
POP	Population Health
POR	Portuguese
POS	Political Science
PPE	Physical Education East
PPS	Political Psychology
PRM	Parks and Recreation Management
PSB	Psychology Behavior Analysis
PSY	Psychology
PTX	Pharmacology/Toxicology
PUP	Urban and Environmental Planning
QBA	Quantitative Business Analysis
RDG	Reading Education
REA	Real Estate
RED	Real Estate Development
REL	Religious Studies
ROM	Romanian
RUS	Russian
SAO	Study Abroad Office
SBS	Social and Behavioral Sciences
SCM	Supply Chain Management
SCN	Science Education
SDO	Sandra Day O'Connor
SEC	Solar Energy Engineering & Commercialization
SED	Secondary Education
SEM	Science and Engineering of Materials
SER	Software Engineering
SES	Earth and Space Exploration
SFS	Sustainable Food Systems
SGS	School of Global Studies
SHS	Speech and Hearing Science
SLB	Sports Law and Business
SLC	School of International Letters and Cultures
SLV	Slavic

<u>Course Prefix</u>	<u>Description</u>
SMC	Simulation, Modeling and Applied Cognitive Science
SOC	Sociology
SOS	School of Sustainability
SPA	Spanish
SPE	Special Education
SPF	Social and Philosophical Foundations
SSH	Social Science and Health
SSP	Sports Science and Performance Programming
SST	Studies in Social Transformation
STC	Social Technologies
STM	Science, Technology, Engineering and Mathematics
STP	Statistics and Probability
STS	Science, Technology, and Society
SWG	Social Work (Graduate)
SWU	Social Work (Undergraduate)
TAM	Thunderbird Applied Leadership and Management
TCL	Transborder Chicana/o and Latina
TDM	Tourism Development and Management
TEL	Teacher Education and Leadership
TEM	Technological Entrepreneurship and Management
TGM	Thunderbird School of Global Management
THE	Theatre
THF	School of Theatre and Film
THP	Theatre Performance and Production
TMC	Technology Management Core
TSS	School of Transborder Studies
TWC	Multimedia Writing and Technical Communication
UET	Microelectronics Engineering Technology
UNI	University
URB	Urban and Metropolitan Studies
USL	University Service Learning
VIP	Vertically Integrated Projects
VTN	Vietnamese
VTS	Veterans Studies
WAC	Writing Across the Curriculum
WPC	W.P. Carey School of Business
WST	Women's Studies
WWS	World War II Studies

Classification of Courses

Course Numbering System

Lower-division courses

Lower-division courses, numbered from 100 to 299, are designed primarily for freshmen and sophomores. Certain classes are closed to freshmen who lack the designated prerequisites or whose majors are outside the units offering the courses. This information is available in the course catalog [2] or from the student's academic advisor.

Upper-division courses

Upper-division courses, numbered from 300 to 499, are designed primarily for juniors and seniors. Prerequisites and other restrictions should be noted before registration. Courses at the 400 level apply to graduate degree requirements for some graduate programs when approved by the Graduate College.

Graduate-level courses

Graduate-level courses, numbered from 500 to 799, are designed primarily for graduate students. However, an upper-division undergraduate student may enroll in courses numbered 500-599 with the approval of the student's advisor, course instructor, department chair and dean of the college in which a course is offered. If such a course does not meet an undergraduate graduation requirement, it may be eligible for use in a future graduate program on the same basis as work taken by a nondegree graduate student. Undergraduate students should review additional information about graduate credits earned by undergraduate students [3].

Omnibus courses

Omnibus numbers are used for courses offered on an experimental or tutorial basis or for courses in which the content is new or periodically changes. Each academic unit uses that unit's prefixes with omnibus course numbers. The general nature of the work required for a particular omnibus course is consistent from unit to unit but subject matter varies. Omnibus courses often are offered for a variable number of credit hours.

Within the academic catalog and course catalog, abbreviations are frequently used with a colon to introduce specific omnibus course topics, which are shown in the omnibus course abbreviations chart below (e.g., MGT 494 ST: Cultural Factors in International Business).

Omnibus Course Abbreviations		
Abbreviation	Title	Number
AP	Applied Project	593, 693, 793
CW	Conference and Workshop	594
FW	Fieldwork	583, 683, 783
FYS	First-Year Seminar	191
HC	Honors Colloquium	497
I	Internship	484, 584, 684, 784
P	Practicum	580, 680, 780
PS	Pro-Seminar	498
R	Research	592, 692, 792
RC	Reading and Conference	590, 690, 790
RM	Research Methods	500, 600, 700
S	Seminar	591, 691, 791

ST	Special Topics	194, 294, 394, 494, 598
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Omnibus undergraduate courses

191 First-Year Seminar (1-3)

Small course emphasizing student-faculty discussion and interaction.

194, 294, 394, 494 Special Topics (0.25-4)

Covers topics of immediate or special interest to a faculty member and students.

484 Internship (1-12)

Structured practical experience following a contract or plan, supervised by faculty and practitioners.

498 Pro-Seminar (1-7)

Small-group study and research for advanced students within their majors.

499 Individualized Instruction (1-3)

Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.

Honors Courses

These courses and all with the HON prefix are reserved for students in Barrett, the Honors College.

298 Honors Directed Study (1-6)

Independent study or practicum under the supervision of a faculty member.

492 Honors Directed Study (1-6)

Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.

493 Honors Thesis (1-6)

Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.

497 Honors Colloquium (1-6)

A class emphasizing discussion, written and/or oral presentation by students, and active participation.

Omnibus graduate courses

The following courses are described in the Graduate College announcements and are also available from the respective departments. Under special circumstances, at the dean's request and through the approval of the executive vice president and provost of the university, arrangements may be made to increase the standard number of credit hours.

500, 600, 700 Research Methods (1-12)

Course on research methods in a specific discipline.

580, 680, 780 Practicum (1-12)

Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.

583, 683, 783 Fieldwork (1-12)

Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.

584, 684, 784 Internship (1-12)

Structured practical experience following a contract or plan, supervised by faculty and practitioners.

590, 690, 790 Reading and Conference (1-12)

Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.

591, 691, 791 Seminar (1-12)

A small class emphasizing discussion, presentations by students and written research papers.

592, 692 Research (1-12)

Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.

593, 693, 793 Applied Project (1-12)

Preparation of a supervised applied project that is a graduation requirement in some professional majors.

594 Conference and Workshop (1-12)

Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.

595, 695, 795 Continuing Registration (1)

Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.

598 Special Topics (1-4)

Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).

599 Thesis (1-12)

Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.

792 Research (1-15)

Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.

799 Dissertation (1-15)

Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.

Other prefixes

Visiting student program

The numbers 597, 697 and 797 in the LAW prefix have been reserved for the visiting student program in the Sandra Day O'Connor College of Law.

Global education programs

Courses with the prefix SAO are reserved for participants in programs offered through the Global Education Office. Courses with an SAO prefix are used in two ways: either to provide general university elective credit for specific programs or courses or as a placeholder course for participation in partnership and exchange programs.

In the case of a placeholder course, the course remains on the student's academic record until the student's record is updated by the Global Education Office following completion of the student's study abroad program. The SAO-prefixed course will be dropped from the student's record and replaced with the ASU courses, credits and grades equivalent to the coursework completed abroad. Students must register for at least the number of credit hours equivalent to full-time study at ASU (i.e., 12 credit hours for undergraduate students and nine credit hours for graduate students during the fall and spring semesters, or one to six credit hours during the summer session). Students participating in a GEO partnership

program must register for the subtopic “SAO: Study Abroad Program”, whereas participants in an GEO exchange program must register for the subtopic “SAO: Exchange Program”. The SAO placeholder course is not an indication of the level of coursework or the total number of credit hours the student may complete abroad.

Source URL: https://catalog.asu.edu/course_classification

Links

[1] <https://catalog.asu.edu/admin/field/edit/node/2835/body?destination=print/2835>

[2] <https://webapp4.asu.edu/catalog/>

[3] https://catalog.asu.edu/course_load

Course Component Descriptions

Each course is composed of one or more components, different instructional modes or meeting types such as labs, studios, lectures and seminars. A course can have more than one component. However, all components must be scheduled. The primary component is always the graded component.

Course Component	Description
Individualized Instruction (IND)	This is a class in which an individual student is provided an opportunity for original study or investigation in a major or field of specialization on a more autonomous basis. Normally a contract or plan is used, and the student is supervised by faculty or practitioners.
Integrated Lecture/Lab (LEL)	The integrated lecture/lab is a class that has some lecture and some hands-on components but does not require a separate time like a traditional lab. It is scheduled like a lecture. This is primarily used in educational technology, computer science, technology, and engineering. As per ABOR: “At least fifteen (15) contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium, as well as a minimum of thirty (30) hours of student homework is required for each unit of credit.”

Course Component	Description
Laboratory (LAB)	The hands-on, workshop component of a class is usually held in a laboratory. The laboratory time is separate from the lecture although it is often associated to a lecture. This is primarily used in science and engineering. As per ABOR: "Laboratory courses require a minimum of forty-five (45) contact hours per unit of credit."
Lecture (LEC)	A lecture is the traditional method of instruction in which students are taught a subject by a member of the faculty. As per ABOR: "At least fifteen (15) contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium, as well as a minimum of thirty (30) hours of student homework is required for each unit of credit."
Practicum (PRA)	A practicum is structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely. Internships and student teaching fit into this category. These classes are often held off campus at a professional location. The practicum component should also be used for internships and field studies courses. As per ABOR: "Each unit of internship or practicum must require a minimum of forty-five (45) contact hours per unit of credit."
ProMod (PRO)	In ProMod courses the role of lectures is deemphasized in favor of learning based on projects. The learning is driven by the needs of the project, not by predetermined lecture topics. Students will go where the questions take them, leading to an individualized exploration of the issues at hand.
Recitation (REC)	A recitation is a small interactional meeting that combines formal presentation, review and interaction between the students and an instructor, and it is usually combined with a lecture as the primary component. Recitations are often lead by teaching assistants (TAs) or graduate assistants (GAs) to supplement a lecture. TAs/GAs will review the lecture, expand on the concepts and usually allow for question-and-answer time. The recitation component should also be used for courses previously categorized as discussion (also known as break-outs). As per ABOR: "At least fifteen (15) contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium, as well as a minimum of thirty (30) hours of student homework is required for each unit of credit."
Research (RSC)	Under the supervision of a faculty member or group of faculty, the student conducts research that is expected to lead to a specific project such as dissertation, thesis, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript. This component is appropriate to use for continuing registration, dissertation, thesis, individualized instruction, research, etc.

Course Component	Description
Seminar (SEM)	A seminar is a small class that emphasizes discussion, presentations by students, and written research papers. As per ABOR: "At least fifteen (15) contact hours of recitation, lecture, discussion, testing or evaluation, seminar, or colloquium, as well as a minimum of thirty (30) hours of student homework is required for each unit of credit."
Studio (STO)	The studio is a hands-on workshop component of design and the arts courses. As per ABOR: "Studios must involve at least thirty (30) contact hours and at least fifteen (15) hours of homework for each unit of credit."

ABOR Policy # 2-224 regarding Academic Credit can be found at:

<https://public.azregents.edu/Policy%20Manual/2-224-Academic%20Credit.pdf>

ABOR Definition of a Unit of Credit: An hour of work is the equivalent of 50 minutes of class time (often called a "contact hour") or 60 minutes of independent study work. A minimum of 45 hours of work by each student is required for each unit of credit. Ordinarily, a course must cover a 1-week period for every unit of credit given.

During summer sessions, however, 6 units of credit may be given over a 5-week period.

Course Grading Basis Descriptions

Grading Option	Grading Basis Description
ELG	Enhanced Learning Grading Basis
GNA	Graded with No Audit
GRD	Graded
NOG	No Grade Associated
NSW	New South Wales – PluS Alliance courses
OP2	Student Option – Standard Grading or Audit
OP3	Student Option – Grade, Z or Audit
OP4	Student Option – P/F/Z or Audit
OP6	Student Option – GNA or Audit
OPT	Student Option – Standard Grading or Audit
P/F	Pass/Fail
YGB	Y (Satisfactory) Grading Basis
Z1	Standard Grading with Z Option
Z2	Pass/Fail with Z Option

Z3	Continuing registration
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Grades and Grading Policy

Students can refer to the [2021-2022 Academic Catalog Archive](#) for letter grade and grading policies.

Summer 2021

Summer 2021 Course Catalog

Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ABS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	207	Applied Plant Taxonomy	Introduces identification of vascular plants emphasizing seed plants. Surveys seed plant families.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or BIO 282
ABS	225	Soils	Fundamental physical, chemical and biological properties of soils as related to sustainable natural resource management. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SQ	Prerequisite(s): CHM 101 or 113 OR Visiting University Student
ABS	226	Soils Laboratory	Selected exercises to broaden the background and understanding of basic soil principles. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LAB	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1	SQ	Pre- or corequisite(s): ABS 225 OR Visiting University Student
ABS	260	Sustainable Horticulture	Principles and practices of horticulture, emphasizing development, growth, and propagation of horticultural plants and environmental factors that affect these processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SG	
ABS	270	Sustainable Biological Systems	Ecological foundations of sustainable biological systems, anthropogenic impacts on ecosystem structure and function, and ecological risk assessment. Examines climate change, water scarcity, deforestation, soil degradation, and human displacement on global ecosystem functions and utilization of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	271	Veterinary Medicine Today	Introduces the role of the veterinarian as related to the fields of food supply and veterinary medicine.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	274	Intro to Wildlife Management	Fundamentals of wildlife conservation and management through lectures, guest speakers and lab activities. Divided into three parts: (1) introduction to conservation, management and the scientific method; (2) themes of earth, water, fire and air; and (3) wildlife techniques and field methods.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	302	Ethical & Policy Issues in Bio	Policy environment and ethics in the practice of biology. Covers ethical reasoning, policy formulation, and regulatory agencies with examples from biotechnology and the environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	311	Molecular and Cellular Biology	Overview of the biology of the cell; emphasizes structure and function of biomolecules within the cell and their applications associated with recombinant DNA technology, genetic engineering, plant and agriculture biotechnology, and human pharmaceutical development.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better OR Visiting University Student
ABS	312	Structure and Function	Surveys structural and functional attributes of plant and animals of particular importance in the applied biological sciences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better OR Visiting University Student
ABS	314	Applied Plant Physiology	Understanding control of plant growth and developmental processes through innovated technologies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	318	Unseen Life on Earth	Develops an understanding of how microbes exist in the context of both their environment and the organisms they come in contact with. Focuses on how the microbial interactions with the environment play a vital role in the multitude of biological processes that support the Earth system. Studies a myriad of extreme environments that host microbial systems, such as cloud, hydrothermal vent, acid-mine drainage and gut microbiomes. Utilizes a synthesis-driven approach where students apply their knowledge on microbial systems to discern whether life is possible on other planets. Also pays attention to the tools used to evaluate microbial diversity and function, applications of microbial ecology, and how microbes can be harnessed to improve life on Earth.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 318 or ABS 394 (Unseen Life on Earth) OR Visiting University Student
ABS	350	Applied Statistics	Statistical methods with applications in the biological sciences and natural resource management. Uses computers and the Internet.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): one course meeting General Studies MA requirement with C or better OR Visiting University Student
ABS	355	Vertebrate Adaptations	Evolution, systematics, diversity, zoology, conservation and anatomical and physiological adaptations and specializations of the vertebrates.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	360	Southwest Home Gardening	Multimedia course for nonmajors surveying contemporary topics in Southwest home horticulture, including landscaping, flower and vegetable gardening, citriculture, interiorscaping, and others.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		
ABS	362	Landscape Plants	Identification, design, and use of plants in urban landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	363	Sustainable Landscape Practice	Landscape technologies and practices including landscape design theory, job costing and bidding, sprinkler and drip irrigation design, landscape installation, landscape valuation techniques, landscape ordinances, and maintenance practices of commercial and residential landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): ABS 260
ABS	364	Urban Forestry	Care, maintenance, and valuation of the urban forest, including public and private landscape codes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: ABS 260
ABS	368	Plant Propagation	Theory and application of sexual and asexual propagation techniques. Considers plant materials used both for urban horticulture and ecological restoration applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	370	Ecology	Interactions between organisms and their environments; structure and dynamics of populations, communities, ecosystems, and landscapes, with emphasis on vegetation.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	372	Captive Animal Behavior Mgmt	Natural animal behaviors during captive animal management including wild and domestic animal training and enrichment, exhibit design, husbandry, and livestock management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better; Credit is allowed for only ABS 372 or ABS 394 (Applied Animal Behavior) OR Visiting University Student
ABS	376	Wildlife Ecology	Explores population biology, conservation genetics, habitat ecology, ecological communities, competition, invasive species, habitat fragmentation and connectivity, and other related topics. Students work in small groups to design, implement, and complete a field-based research project on the ASU Polytechnic campus.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre- or corequisite(s): ABS 274; ABS 370
ABS	377	International Wildlife Conserv	Studies wildlife around the world including biogeography, biodiversity, conservation topics and the complexity of conserving wildlife in both developed and developing nations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282; Credit is allowed for only ABS 377 or ABS 494 (International Wildlife Conservation) OR Visiting University Student
ABS	378	Animal Nutrition	Principles of nutrient metabolism in animal species; emphasizes understanding the interaction of animals with their environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: BIO 181 or BIO 182; CHM 101 or CHM 113
ABS	380	Restoration & Wildlife Plants	Important wildland plants, including invasive and endangered species, wildlife food species, and species used for ecosystem restoration such as rangeland revegetation and seeding.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 207 OR Visiting University Student
ABS	381	Natural Resources Policy	Policies and regulations affecting management of natural resources, with emphases on wildlife, rangeland and ecological restoration.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	384	Natural Resources Meas	Inventory, sampling and monitoring techniques of natural resources. Data evaluation and interpretation as related to management, restoration and conservation needs of natural resources.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	414	Plant Pathology	Identification and control of biotic and abiotic factors that cause common disease problems to plants.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better OR BIO 281 with C or better; BIO 282 with C or better
ABS	417	Comparative Immunology	Examines unique but also shared immunological characteristics of animals with the goal of understanding how different animals respond to microorganisms such as viruses, bacteria, fungi and parasites. Presentation of material is guided by hierarchy of structural organization, using molecules, organelles, cells, tissues, organs, organ systems, whole animals and even ecosystems and the environment to convey important concepts related to our relationships with pathogens.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 417 or ABS 394 (Comparative Immunology) OR Visiting University Student
ABS	430	Watershed Management	Hydrologic, physical, biological, and ecological principles applied to watershed management. Impact of ecosystem manipulations on water yield and quality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	434	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370 or BIO 320; Credit is allowed for only ABS 434 or BIO 418
ABS	435	Applied Systems Ecology	Simulation modeling as a tool to study ecological processes and human impact on ecosystems and organisms.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370, ABS 350 (or STP 420)
ABS	440	Ecological Restoration Techniq	Techniques for ecological restoration, riparian and wetland restoration, and monitoring restoration success.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370
ABS	441	Ecological Restoration Practcm	Field experience in the evaluation and monitoring of implemented ecological restoration projects.	N	LEL	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre/Co-requisite: ABS 440

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ABS	452	Comm App of Fermentation	Biochemical applications and technologies of fermentation including use of fungi and bacteria in fermentation to improve human health and immunity, and produce pharmaceutical drug supplements and medicines, foods, beverages, and alternative fuels.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better; Credit is allowed for only ABS 452 or ABS 494 (Commercial Applications of Fermentation) OR Visiting University Student
ABS	460	Organic Gardening	Applies principles and practices of organic gardening in the low desert, including environmental impacts of modern food production.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		
ABS	462	Greenhouse/Nursery Management	Greenhouse structures, environment, and nursery operations. Includes irrigation, nutrition, and other principles relative to production of nursery crops.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: ABS 260
ABS	464	Desert Horticulture	Students learn about and practice the principles of sustainable horticulture in an arid climate. Includes capstone projects on sustainability issues related to horticultural practice in arid environments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 260; Credit is allowed for only ABS 464 or ABS 494 (Sustainable Desert Horticulture) or ABS 498 (Desert Horticulture) OR Visiting University Student
ABS	470	Life History of Mammals	Evolution, classification, environmental, anatomical and physiological adaptations, ecology, and conservation of mammals worldwide. Emphasis on the identification, habitat relationships, conservation, and management techniques of Arizona and select North American mammals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370
ABS	472	Applied Herpetology	Systematics, evolution, ecology and life history of amphibians and reptiles emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 472 or ABS 498 (Applied Herpetology) OR Visiting University Student
ABS	473	Applied Ornithology	Evolution, ecology, classification and life history of birds, emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 473 or ABS 494 (Applied Ornithology)
ABS	474	Riparian Ecosystem Mgt	Management principles of riparian ecosystems based on fluvial geomorphological and ecological concepts. Discusses human impacts to riparian ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	475	Habitat Mgmt Small Wildlife	Habitat management considerations and practices for small game and nongame wildlife species in North America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320
ABS	476	Big Game Habitat Management	Conservation and management issues focused on large mammals in North America. Topics include habitat ecology, nutrition, migration, predator-prey dynamics, trophic cascades, habitat management and restoration of populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320 OR Visiting University Student
ABS	479	Ecosystem Mgmt and Planning	Principles of ecosystem management, with emphasis on economic and policy constraints on the planning process. Risk assessment and management. Includes the process of complying with NEPA while developing rangeland management plans.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): minimum senior standing
ABS	481	Riparian & Wetland Restoration	Principles and problems in the restoration of degraded riparian and wetland ecosystems. Construction of wetlands.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370
ABS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	485	GIS in Natural Resources	Principles of Geographic Information Systems (GIS) utilized in natural resource management. Use of computers for spatial inventory and analysis of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	486	Introduction to Remote Sensing	Remote sensing is an important source of environmental information that can support a deeper understanding of trends and clarify management strategies in a wide range of ecological application. Focuses on the application of satellite and aerial/drone remote sensing in environmental science and management. With this basic background, course participants use remote sensing data to make spatial decision. Presents the concepts of biodiversity and wildlife management parallel to the remote sensing information. Image processing instruction and exercises begin with an analysis of digital imagery and proceed through the three broad classes of processing techniques: preprocessing, enhancement and information extraction.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 486 or ABS 598 (Integration of Remote Sensing) or ABS 598 (Introduction to Remote Sensing)
ABS	489	Undergraduate Research	Undergraduate research under the supervision of an applied biological sciences faculty member.	N	RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): Junior or senior standing OR Visiting University Student
ABS	490	Applied Biol Sciences Seminar	Current literature and significant developments related to applications of the biological sciences. May be repeated for credit.	N	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Senior standing OR Visiting University Student

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ABS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ABS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student
ABS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
ABS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	541	Adv Rangeland Mgt	Combines the principles of ecology, planning and restoration in the application of rangeland ecosystem management. Studies fundamental topics such as range plant physiology, range plant ecology, rangeland stocking-rates and grazing systems in considering management practices for rangeland ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: Degree-or non-degree seeking graduate; Credit is allowed for only ERM 541 or ABS 598 (Adv Rangeland Ecosystem Management)
ABS	542	Mgt Fire Adapted Ecosys	Fire adapted ecosystems which evolved with high-frequency and low-intensity fires now support a range of regimes from no fire to uncharacteristically large and intense fires, causing a concern about the current and future role of wildland fire as well as forest and rangeland health. Explores management considerations and techniques for reintroducing fire to these ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ABS 598 (Fire Ecology), or ERM 542
ABS	550	Vegetation Dynamics	Dynamics of vegetation linking physiological, population, and community ecology. Collection and analysis of vegetation data.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	555	Wildlife Dynamics	Explores major concepts in population and community ecology with an emphasis on their application to the study and management of wildlife species. Explores the theory and sometimes controversial nature of these concepts in the form of lectures and discussions. Instructor and student workshops and oral presentations of student research.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ABS 555 (or ERM 550) or ABS 598 (Wildlife Dynamics) or ETM 598 (Wildlife Population Ecology)
ABS	560	Ecological Modeling	Mathematical modeling of animal populations, food-web structural and ecological processes in space and time. May use modeling tools on computer clusters.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate (Degree and non-degree) students; Credit is allowed for only ABS, BIO 560 or MAT 561
ABS	570	Advanced Animal Nutrition	Metabolic and physiological interactions of nutrients in wild and domesticated animals consuming natural feeds.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	586	Remote Sensing/Envir Resources	Principles and application of remote sensing technologies in natural resource management using computerized data from aerial photography and satellite imagery.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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ABS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	101	Accountancy LEAP Program	The Leadership, Ethics, Accountability & Professionalism (LEAP) program aims to ensure a successful transition from high school to college and, ultimately, one's career. Based on the hallmarks of the accounting profession, provides the tools, resources, and expectations to succeed at ASU, W.P. Carey School of Business and the School of Accountancy.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1		
ACC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	231	Uses of Accounting Info I	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): CIS 105 or 236 with C or better; min 25 hours OR Technological Entrepreneurship Management major; EDT 180; min 25 hours OR Pre- or corequisite(s): Engineering Management major; CSE 205; min 25 hours OR Visiting University Student
ACC	232	Financial Accounting I	Develops an understanding of the theory, concepts, principles and practices underlying preparation, interpretation, and use of external financial reports. Emphasizes interpreting the economic substance of events and transactions and their association with contemporaneous and prospective events, relationships, and outcomes. Gains understanding of the accounting information model and develops an ability to analyze and record business transactions and analyze basic financial statements. Meant for prospective accounting and finance majors (and students who plan current majors in these areas) and develops skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy or Finance majors; CIS 105, 220 or 236 with C or better OR Visiting University Student
ACC	241	Uses of Accounting Info II	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): ACC 231, 261, or 303 with C or better OR Visiting University Student
ACC	242	Mgr Acct I	Develops an understanding of the theory, concepts, principles, and practices underlying managerial accounting. Emphasizes three functions managers must perform within their organizations: plan operations, control activities, and make decisions. Explains what accounting information is necessary, how to collect it, and how to interpret it. Meant for prospective accounting and finance majors and students who plan current majors in these areas and develop skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy and Finance majors, and others with School of Accountancy approval; ACC 231, 232, 261, or 303 with C or better OR Visiting University Student
ACC	261	Honors Fund of Fin Accounting	Covers basic financial accounting concepts and applications. Develops an understanding of the environment in which financial reporting choices are made.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey School of Business Honors student; CIS 105 or CIS 220 or CIS 236 with C or better
ACC	271	Honors Fund of Mgr Accounting	Covers basic managerial accounting concepts and applications.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business major; Barrett Honors student; ACC 231, 232, or 261 with C or better
ACC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	310	Intermed Acctg for Corp Accts	Intermediate-level financial accounting course with in-depth focus on asset, liability and owner's equity measurement, revenue determination, investments accounting, lease accounting, financial statement preparation, presentation and analysis. Emphasizes the statement of cash flows and interpreting footnote disclosures. Where appropriate, compares International Financial Reporting Standards and U.S. GAAP (Generally Accepted Accounting Principles).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student

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ACC	320	Mgmt Acc for Corp Accts I	Covers internal reporting systems for planning, control, and decision making. Deals with conceptually and computationally understanding the various accounting, economic and/or business models, frameworks and methods in order to be more knowledgeable and literate in these areas while building overall stronger decision-making skills.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
ACC	340	External Reporting I	Financial accounting theory and practice related to external reporting.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better; Pre- or corequisite(s): FIN 300, 302 or 303 OR Visiting University Student
ACC	350	Internal Reporting	Internal reporting systems for planning, control, and decision making.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better OR Visiting University Student
ACC	354	Gov, Risk, Comp Int Con Ethics	Equips students to understand, evaluate and participate in corporate governance. Surveys best practices in corporate governance including internal controls, enterprise risk management (ERM), fraud deterrence, and ethical organizational culture. Emphasizes the Committee of Sponsoring Organizations (COSO) framework. Provides the necessary background and understanding of key internal control and ERM concepts and tools for corporate accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	360	Ethics for Prof Accountants	Addresses ethical obligations and responsibilities of professional accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
ACC	382	Accting & Financial Analysis	Introduces nonbusiness majors to financial accounting concepts related to operating, financing, investing, and ethical decisions.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prereq(s): Non-Business student; must not have previously earned credit in ACC 230, 231, 232, 240, 241, 242, 261, 271 or BUA 381; min 2.0 GPA; min 56 hours, OR non-degree student with min GPA of 2.00, OR graduate student OR Visiting University Student
ACC	410	Fin Statement Analysis	Focuses on core knowledge and skills essential to financial statement analysis. Topics covered include strategic ratio analysis, cash flow analysis, forecasting, pro-forma financial statements and firm valuation.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better OR Visiting University Student
ACC	420	Mgmt Acc for Corp Accts II	Covers the higher-level managerial accounting topics and uses of accounting data to assist corporate accountants in their plans and decisions regarding complex resource allocation, organizational control, and performance evaluation issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 320 with C or better OR Visiting University Student
ACC	430	Taxes and Business Decisions	Federal income taxation of sole proprietors, partnerships, corporations, fiduciaries, and individuals with an emphasis on tax consequences of business and investment decisions.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 340 with C or better; LES 305 with C or better OR Visiting University Student
ACC	435	Personal Tax Mgmt & Planning	Strategies used by financial planners to help clients achieve greater tax efficiency.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey major; ACC 340 or FIN 380 with C or better
ACC	440	External Reporting II	Continuation of ACC 340 with emphasis on the recognition, research, and resolution of financial reporting issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS student; ACC 340 with C or better OR Visiting University Student
ACC	444	Enterprise Proc Analys & Desgn	Focuses on the flow of data through ERP systems and discusses the difference between several types of data and the flow of data from various transactions through the database.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s) with C or better: Accountancy BS major; ACC 241, 242, or 271; CIS 360; ECN 221 or 231 OR Computer Information Systems major; ACC 241, 242, or 271; CIS 235 or 236; ECN 221 or 231 OR Visiting University Student

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ACC	450	Principles of Auditing	Standards and procedures in auditing. Planning, evidence gathering and accumulation, and reporting. Ethical and legal considerations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 440 with C or better OR Visiting University Student
ACC	454	Tax for Corp Accountants	Integrates tax compliance, tax planning, accounting, economics and finance. Examines current tax rules while developing the ability to think about taxes in a way that is not specific to the current federal system.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): W. P. Carey BS Accountancy major; ACC 340 with C or better; ACC 350 with C or better; ACC 430 with C or better; ACC 440 with C or better; ACC 450 with C or better; minimum 3.50 GPA; minimum 72 hours
ACC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-6		Prerequisite(s): Barrett Honors student
ACC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	School of Accountancy	1-6	L	Prerequisite(s): Barrett Honors student
ACC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Accountancy BS major OR Visiting University Student
ACC	501	Basics of Financial Reporting	Covers contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): degree-seeking graduate student
ACC	502	Financial Accounting	Contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey Finance MS or MBA degree program student
ACC	503	Managerial Accounting	Managerial accounting concepts and procedures for internal reporting applied to the decision making activities of the professional managers.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): MBA degree program student
ACC	504	Basics of Managerial Acct	Covers managerial accounting concepts and procedures for internal reporting applied to the decision-making activities of the professional managers. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): ASU degree-seeking graduate student; Pre- or corequisite(s): ACC 501 with C or better if completed
ACC	507	Innovations with Audit Tech	Focuses on understanding the role of technology-related innovations on audits and auditing performance. Looks at both capturing data from recent innovations in technologies for audit applications (e.g., IoT) as well as examining the roles of these recent technology innovations for audit performance (e.g., cognitive computing).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	508	Gen Audit Analytics using AIS	Addresses the emerging roles of accounting analytics in accounting, auditing and tax contexts. Technological advances have allowed the capture and economic storage of massive accounting and business data and the focus of this class is how to productively gather and apply big data to a variety of accounting, auditing and tax-related contexts. Focuses on understanding the data within major accounting information systems and generating meaningful audit and/or tax analytics from the data. Critical to this is a deep understanding of accounting flows, processes and controls in order to understand and build meaningful audit-centric and/or tax-centric analytics.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student

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ACC	509	Stats for Acctg Analytics	Addresses theories of probability and uncertainty through the use of statistics including descriptive, predictive and prescriptive analyses as well as regression and other models to support audit decisions and conclusions. This heavily quantitative course starts with a realization that probability and uncertainty can be alleviated (or compounded) with different statistical decision making and so starts with theories of probability and uncertainty to properly understand these concepts. Once these concepts are grounded, this class focuses on data, techniques and technologies that can aid in appropriate decision making with accounting. Emphasizes formulating real-world models--driven by descriptive, predictive and prescriptive statistics--to represent complex real-world accounting decision problems and on using a variety of tools to gain better insight into properly addressing these problems.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	511	Taxes and Business Strategy	Economic implications of selected management decisions involving application of federal income tax laws. Recognition of tax hazards and tax savings.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	512	Advanced Auditing	Builds on the skills obtained in the beginning auditing (assurance) course and focuses on audit planning, risk assessment, evidence, and reporting procedures and fraud.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Master of Accounting student
ACC	513	Advanced Financial Accounting	Focuses on advanced financial accounting topics along with their application in the financial reporting process.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Specific Business Graduate majors
ACC	560	Ethics for Prof Accts	Reviews ethics in business, fiduciary responsibility, ethical issues, codes of conduct in the field of accounting. Individualized instruction.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy or Master of Taxation student; Credit is allowed for only ACC 560 or ACC 591 (Ethics for Professional Accountants II)
ACC	571	Taxation/Corps/Shareholders	Tax aspects of the formation, operation, reorganization, and liquidation of corporations and the impact on shareholders.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	573	Taxation/Pass-Through Entities	Tax aspects of the definition, formation, operation, liquidation, and termination of a partnership. Emphasizes tax planning.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	575	Family Tax Plan/Wealth Trans	Tax treatment of wealth transfers at death and during lifetime, with emphasis on tax planning.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	577	Tax Rsrch Prof Resp Prop Trans	Federal tax issues and consequences, tax authority, property transactions and tax consequences of acquiring, holding and disposing of property.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Taxation major. Credit is allowed for only ACC 577 or ACC 591 (Tax Research, Professional Responsibilities & Property Transactions)
ACC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	585	Perf Measurem&Adv Mgrl Acctg	Applies quantitative techniques to accounting problems.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Business Graduate student
ACC	586	Shareholder Value Creation	Develops skills necessary to exploit financial reporting information in a business environment and appreciation of reporting issues faced by management.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	587	Multi-Jurisdictional Tax I	Multistate taxation and interplay between multistate tax issues and federal and state constitutional limitations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Taxation major
ACC	588	Professional Accounting Resrch	Applies the technical knowledge of accounting theory and principles developed in other academic courses through the use of "real life" case studies, where such knowledge and professional judgment is applied in resolving advanced accounting problems and issues.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: W. P. Carey Master of Accountancy student
ACC	589	Multijurisdictional Tax II	Addresses the U.S. taxation of U.S. individuals and businesses that do business outside the U.S. as well as the U.S. taxation of foreign persons and tax treaties, allocation of income, foreign tax credits, and transfer pricing. Emphasizes planning related to some of the tax issues that commonly arise in cross-border businesses.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Master of Taxation student
ACC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Pre-requisite: Specific Business Graduate majors
ACC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Pre-requisite: Business Administration (Accountancy) PHD student
ACC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	100	All About Data	Data modeling and design, spreadsheets, relational databases and querying, visualization and XML.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	
ACO	101	Intro to Computer Science	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms, computer system concepts. Social and ethical responsibilities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): MAT 117 or higher with C or better, or Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher OR Corequisite(s): MAT 170 or higher OR Visiting University Student
ACO	102	Object-Oriented Programming	Object-oriented programming using introductory algorithms and data structures. Overview of concepts in computer science.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 101 with C or better; Credit is allowed for only ACO 102 or CSE 205 or CST 200 OR Visiting University Student
ACO	131	Global Cybersecurity	Introduces the basic concepts and tenets of cybersecurity from a global and cultural perspective, instead of a technical perspective. Explores how various nation-states view and employ cybersecurity in order to achieve their national strategic imperatives. Students articulate and understand fundamental cybersecurity concepts and principles rooted in U.S. and other national policy, compare and contrast various nation-state approaches to national security, the monitoring of other nations and foreign citizens, and how these relate to cybersecurity policies and practices. Students identify and describe cultural and political philosophies regarding personal data and personal privacy and their influence on national security policy and objectives.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G	Credit is allowed for only ACO 131 or ACO 194 (Global Cybersecurity)
ACO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	201	Data Structures and Algorithms	Static and dynamic data structures, recursive and iterative sorting and searching, object-oriented design and programming, software design models and implementation/testing strategies, professional responsibilities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 102 with C or better, MAT 210 or higher with C or better OR Visiting University Student
ACO	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240

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ACO	320	Database Systems	Entity-relationship and relational data models. Database design theory. Relational algebra, calculus and SQL query languages. Query optimization. XML fundamentals. Transactions, recovery and concurrency control.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201; MAT 243 or 300; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 433 (or CST 433) or SER 322 OR Visiting University Student
ACO	321	Database Development & Apps	Stored procedures and triggers. Security and authorization. Call-level interface. Database Web applications. Advanced topics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; Credit is allowed for only ACO 321 or CSE 414 or IFT 458 OR Visiting University Student
ACO	330	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 325; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
ACO	331	Network Forensics Analysis	Fundamental principles of network forensics and traffic analysis, evidence acquisition, network intrusion detection and analysis, anomaly detection and analysis, malicious activity detection, network tunneling, and malware forensics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better; Credit is allowed for only ACO 331 or IFT 482
ACO	350	Systems Programming	Introduces operating systems as resource managers, processes, threads, memory allocation, file systems, protection, system calls, application program interfaces.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 201 with C or better; Credit is allowed for only ACO 350 or CSE 330
ACO	351	Security GRC	Broad requirements for effective cybersecurity governance, the elements required to develop an appropriate governance strategy, and the actions required to implement it.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 235 with C or better
ACO	361	Secure Coding Concepts	Secure software development process including designing secure applications, writing secure code that can withstand attacks, and security testing and auditing. Focuses on the security issues a developer faces, common security vulnerabilities and flaws, and security threats. Explains security principles, strategies, coding techniques and tools that can help make code more resistant to attacks. Students write and analyze code that demonstrates specific security development techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201, ACO 240, or CIS 325 with C or better
ACO	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
ACO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	N	RSC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): ACO 102; minimum 30 hours
ACO	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
ACO	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student
ACO	420	Big Data Systems	Modern technologies to manage, process and analyze big data. Data processing of large data sets with Map/Reduce. NoSQL data stores. NewSQL databases. Data visualization. Applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better
ACO	421	Data Mining and Warehousing	Introduces data mining from a database perspective, including classification, clustering, and association rules. Data warehousing methodologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better
ACO	422	XML and Databases	XML data model, schema specification and validation, querying, storage, indexing, and current research topics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better

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ACO	423	Data Science	Computational and machine learning methods to extract insights from data: data collection, data cleaning and transformation, exploratory data analysis, data visualization, and machine learning (supervised and unsupervised) algorithms.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better OR Visiting University Student
ACO	430	Wireless Networks	Wireless transmission fundamentals, wireless LAN, cellular networks and systems, Bluetooth, mobile application development, sensor networks, performance analysis and recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330
ACO	431	Network Security	Digital threats and attacks, cryptography, confidentiality, authentication protocols, message integrity, security in network applications, intrusion detection, malicious software countermeasures, firewalls.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 OR Visiting University Student
ACO	432	Distributed Systems	Distributed system models, distributed programming technique, clock synchronization, distributed snapshot, distributed mutual exclusion, concurrency control, fault tolerance, security, recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330
ACO	461	Security Operations	How organizations monitor and manage the security of their infrastructures in the real world. Explains architecture principles, the use of monitoring tools and technologies, how to interpret different security data sources, as well as how to identify and respond to various security threats within a complex infrastructure. Requires students to utilize security toolsets within a laboratory setting to demonstrate their understanding of the technologies as well as course concepts.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 OR Visiting University Student
ACO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
ACO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
ACO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
ACO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student
ACO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ACO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	501	Database Systems & Python	Design and implementation of databases for scientific applications. Defining and querying database systems using the SQL industry standard language. Data exchange using XML. Programming in Python to solve realistic problems using scientific data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	201	Intro to Actuarial Science	Introduces important aspects of actuarial work. Exposes the development of actuarial techniques in the context of life insurance, casualty and property insurance, superannuation and investment. Develops problem-solving skills and gives basic tools for risk management and financial modeling, including the use of Excel spreadsheets for both, calculations and simulations. Shows how studies in related disciplines (such as accounting, demography, economics, statistics, computing and mathematics) are essential to the education of an actuary. Guest speakers from the industry share their knowledge and insight on how to become a successful actuary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CIS 105 with B or better; MAT 270 with B or better OR Visiting University Student
ACT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	301	Risk Mgmt and Insurance	Provides an introduction to the different types of risks faced by individuals, businesses and society along with ways in which they make an assessment of, control and transfer of different types of risks including property risk, liability risk, personal risks and speculative risks such as financial risks. Covers risk management techniques including risk control and risk financing with a focus on insurance policies, and also presents other major topics in personal financial planning, social insurance, insurance operations and regulations, and reinsurance. Also gives attention to contemporary issues and challenges in risk management and insurance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	SB	Prerequisite(s): Actuarial Science major; ACT 201 with B or better; MAT 270 with B or better; STP 420 with B or better OR non-Actuarial Science major; MAT 210, 265, or 270; ECN 211 or 212; ECN 221 or STP 226 or STP 420 OR Visiting University Student
ACT	302	Fndmtl of Enterprise Risk Mgmt	Examines in detail the Enterprise Risk Management (ERM) as a decision support system that helps organizations understand risk and assure the achievement of their goals. Provides understanding of what risk is and what an ERM process looks like for organizations, including some common challenges and pitfalls of institutionalizing an ERM culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 OR Visiting University Student
ACT	320	Property & Casualty Insurance	Examines the fundamental principles and uses of property and casualty insurance. Also includes detailed examination of contracts, rating, underwriting, regulation and financial strength of insurers. In particular, devotes attention to the role of property and casualty insurance in addressing the economic and social problems encountered by businesses. Furthermore, also assists in the preparation to take the State of Arizona's Department of Insurance Property & Casualty exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301

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ACT	330	Life and Health Insurance	Develops an understanding of life and health insurance and the place of those products in the risk management plans of individuals and businesses. In particular, devotes attention to the role of life and health insurance in addressing the economic and social problems encountered by individuals and businesses. Furthermore, prepares the students to take the State of Arizona's Department of Insurance Life and Health Insurance exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301
ACT	370	R and Excel for Actuaries	As an open source descendant of S programming language, R has grown to be a powerful environment for statistical computing and graphics. Today it is not only ubiquitous in statistical community but has gained significant ground among practitioners in other disciplines such as finance, actuarial science, medicine and others. As a free and robust language with myriad of free libraries that augment its versatility, it's used in academia and industry alike. Course covers core elements of R language relating to basic and advanced data manipulation, language structure statistical analysis with R, as well as using R as a programming language. Microsoft Excel spreadsheet software has become an integral part of most business organizations across the world. A working knowledge of Excel is vital for most office-based professionals today, and stronger Excel skills can open the door to promotions and leadership opportunities. Course helps build a strong foundation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with B or better; STP 226, 231, or 420 with B or better; Credit is allowed for only ACT 370 or ACT 394 (R in Excel for Business)
ACT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	410	Mathematics of Finance	Prepares potential actuaries to master national exams. Provides an understanding of the fundamental concepts of financial mathematics and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Gives an introduction to financial instruments including derivatives and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 201 with B or better; MAT 270 with B or better; Credit is allowed for only ACT 410 or ACT 510 or MAT 340 OR Visiting University Student
ACT	415	Probability for Risk Mngmnt	Prepares potential actuaries to master national exams. Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 201 with B or better; MAT 272 with B or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 OR Visiting University Student
ACT	420	Ratemaking and Reserving	Utilizes information on property and casualty ratemaking and reserving techniques, from an actuarial perspective. Ratemaking and loss reserving are the two fundamental functions performed by actuaries, and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 with B or better; STP 427 with B or better; Credit is allowed for only ACT 420 or ACT 520
ACT	430	Math of Financial Derivatives	Prepares potential actuaries to master the national exams. Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; Credit is allowed for only ACT 430 or ACT 530 OR Visiting University Student
ACT	435	Statistics for Risk Modeling	Statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression-based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals, classification, clustering and tree-based methods. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 370 with B or better; STP 427 with B or better; Credit is allowed for only ACT 435 or ACT 535 OR Visiting University Student

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ACT	440	Long-Term Actuarial Math I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care, etc.). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; MAT 343 with B or better; Credit is allowed for only ACT 440 or ACT 540 OR Visiting University Student
ACT	441	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Expose students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 440 with C or better; Corequisite(s): STP 427 with B or better; Credit is allowed for only ACT 441 or ACT 541
ACT	450	Actuarial Models I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 with B or better; STP 427 with B or better; Credit is allowed for only ACT 450 or ACT 550 OR Visiting University Student
ACT	451	Actuarial Models II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 450 with C or better; Credit is allowed for only ACT 451 or ACT 551
ACT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	491	Actuarial Exam Prep Seminar	Provides potential actuaries with review and practice for an actuarial examination.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Pre- or corequisite(s): ACT 410 (ACT 310) or 415 with B or better if completed OR Visiting University Student
ACT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
ACT	505	Enterprise Risk Mgmt Models	Actuarial modeling methods used in enterprise risk management. These methods are useful for the quantification of many types of risks faced by businesses and other organizations. Furthermore, these methods look at the correlation between risks that can create unexpectedly large exposures. Students build risk models for an actual enterprise.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	510	Mathematics of Finance	Provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest, including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Introduces financial instruments including derivatives, and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 310 or ACT 510 or MAT 340
ACT	515	Probability for Risk Managemen	Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421

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ACT	520	Ratemaking and Reserving	Provides knowledge of property and casualty ratemaking and reserving techniques from an actuarial perspective. Ratemaking and loss reserving are the two fundamental functions performed by actuaries and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 420 or ACT 520
ACT	530	Math of Financial Derivatives	Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 430 or ACT 530
ACT	535	Statistics for Risk Modeling	Uses statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 435 or ACT 535
ACT	540	Actuarial Mathematics I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 510 with B or better, ACT 515 with B or better; Credit is allowed for only ACT 440 or ACT 540
ACT	541	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Exposes students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 540 with B or better; Credit is allowed for only ACT 441 or ACT 541
ACT	550	Actuarial Models & Modeling I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 450 or ACT 550
ACT	551	Actuarial Models & Modeling II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 550 with B or better; Credit is allowed for only ACT 451 or ACT 551
ACT	560	Insurance Data Analytics I	Provides knowledge of advanced applications of predictive modeling methods for solving actuarial problems. Methods that use the general and generalized linear models are becoming more important in the insurance industry for both traditional actuarial pricing and reserving problems and for marketing and operational problems. Prepares students to understand these problems and to gain some experience in analyzing them through projects involving real data. Topics include: linear models, regression with categorical dependent variables, regression with count dependent variables, generalized linear models, frequency and severity models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	561	Data Analytics in Insurance II	Expose students to a wide variety of advanced analytics techniques applicable to data types that are routinely found within the insurance industry. Application of data science is rapidly growing in insurance industry and this course creates a long-term knowledge base for students to remain empowered and in time, master and use more sophisticated emerging techniques. Topics covered include generalized additive models, discriminant analysis, classification and regression trees, bagging, random forests, boosting, mixture model-based approaches, spatial models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 560 with B or better

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ACT	565	Regulation & Fin Reporting	Provides an overview of insurance regulation with regard to property and casualty coverages, ratemaking, pricing and solvency, and U.S. tort law as it affects the property and casualty business. Further identifies major U.S. insurance programs administered by government agencies and insurance industry organizations such as: automobile plans; crop insurance; flood insurance; government backstops; guaranty funds.; residential markets (auto, workers comp, property); workers compensation (including interaction with Medicare). While addressing financial reporting, solvency and taxation issues, students evaluate the financial health of an insurance entity by completing specific schedules and exhibits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	570	Stochastic Calc for Finance	Uses stochastic calculus as a foundation for advanced mathematics of financial derivatives. Topics covered include: stochastic calculus, martingales and arbitrage, Black-Scholes equation and pricing derivative securities, and fundamental theorems of asset pricing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	571	Adv Math Financial Derivatives	Applies stochastic calculus to advanced topics in mathematics of financial derivatives. Topics include: term structure models, pricing derivative securities, fundamental theorems of asset pricing, models of equity and fixed income markets, and exotic options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 570 with B or better
ACT	575	Portfolio Theory and Risk Mgmt	Provides an overview of measurement and management of risk and enables students to master the methods and concepts of portfolio theory. Those models and concepts include risk aversion, utility functions as a representation of preferences, efficient frontiers, Markowitz Portfolio theory, the Capital Asset Pricing model, security market line, value at risk and expected shortfall, as well as concepts of coherent risk measures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	585	Advanced Mortality Modeling	Expose students to a wide variety of advanced models for forecasting human mortality. Explains the relevant repositories of mortality data in the context of application of most-used advanced mortality forecasting models. Presents both discrete time as well as continuous time stochastic mortality models. Students also learn about approaches for managing longevity risk via natural hedging, reinsurance and mortality-linked derivatives as well as pricing of basic insurance products in the context of advanced mortality models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ADE	321	Architectural Studio I	Introductory building design problems. Emphasizes design process, communication methods, aesthetics, construction, and technology.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architecture BSD major; ALA 226 with C or better OR Visiting University Student
ADE	322	Architectural Studio II	Site and building design problems. Emphasizes programmatic and environmental determinants and building in natural and urban contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Architectural Studies student; ADE 321 with C or better
ADE	421	Architectural Studio III	Topical design problems of intermediate complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 322 with C or better OR Visiting University Student
ADE	422	Architectural Studio IV	Topical design problems of advanced complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architectural Studies BSD major; ADE 421 with C or better

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ADE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ADE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
ADE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ADE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ADE	510	Foundtion Architectural Studio	Fundamentals of architectural design, methodology, visualization, and representation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	511	Core Architectural Studio I	Applies design fundamentals in architectural problems, including construction, technology, programmatic and environmental determinants.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 510 with C or better
ADE	512	Core Architectural Studio II	Applies architectural design fundamentals to increasingly complex problems, including specific sites and activities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 511 with C or better
ADE	521	Adv Architectural Studio I	Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	522	Adv Architectural Studio II	Design problems emphasizing the comprehensive integration of building systems and technologies as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 521 with a C or better; Co-requisites: APH 505 and ATE 556
ADE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ADE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ADE	621	Adv Architectural Studio III	Design problems emphasizing the urban context, planning issues, and urban design theory as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 522 with a C or better; Co-requisite: APH 515 OR Bldg Des(Energy Perform/Bldgs) MS student
ADE	622	Adv Architectural Studio IV	Individual, student-initiated project reflecting a culminating synthesis of architectural ideas.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 621 with C or better; Master of Architecture student; Corequisite(s): APH 515 or Built Environment (Energy Perf/Climate Responsive Arch) MS student
AEE	313	Aircraft Dynamics and Control	Aircraft static stability; equations of motion; dynamic modes and stability; stability derivatives; response to controls; introduces automatic control of aircraft.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; MAE 318 with C or better
AEE	325	Aerospace Structures/Materials	Applies structural analysis to aircraft and spacecraft structures. Loads on aerospace structures, buckling and stability, stiffened panels, primary wing and launch-vehicle structure, vibration of large structures, properties and selection of aerospace structural materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Aerospace Engineering major; MAE 202 with C or better; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit is allowed for only AEE 325 or MEE 322 OR Visiting University Student
AEE	344	Fundamentals Aircraft Design	Aircraft performance, RFP's, Federal Aviation Regulations, aircraft sizing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; MAE 202 with C or better; MAE 214 with C or better; MAE 384 with C or better; Pre- or corequisite(s): AEE 325 with C or better if completed
AEE	360	Aerodynamics	Airfoils and wings, ideal flow, boundary layers, finite-difference solutions, wind-tunnel testing. Both AEE 360 and AEE 362 must be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4	L	Prerequisite(s): Aerospace or Mech Engr BSE major; ENG 102, 105, or 108 w/ C or better; MAE 240 or 242 w/ C or better; MAE 384 w/ C or better; MAT 267 or 272 w/ C or better; Pre- or corequisite(s): MAE 301 w/ C or better OR Visiting University Student

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AEE	362	High-Speed Aerodynamics	Compressible flow at subsonic and supersonic speeds; ducts, nozzles, and diffusers; normal and oblique shocks, transonic flow, numerical solutions; experimental applications. Both AEE 362 and AEE 360 must be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4	L	Prerequisite(s): Aerospace Engineering BSE major; AEE 360 with C or better; MAE 241 with C or better; MAE 301 with C or better
AEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
AEE	415	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MAE 318 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 415 or MAE 514 OR Visiting University Student
AEE	426	Design of Aerospace Structures	Flight vehicle loads, design of semimonocoque structures, local buckling and crippling, fatigue, aerospace materials, composites, joints, and finite element applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering BSE major; AEE 325 with C or better; Credit is allowed for only AEE 426 or MAE 526
AEE	445	Fund of Spacecraft Design	Spacecraft subsystems. Systems engineering, space mission design, space environment. Cost analysis. Risk and reliability analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s): Aerospace Engr (Astronautics) BSE mjr; AEE 325 w/ C or btr; AEE 462 w/C or btr; MAE 214 w/ C or btr; MAE 318 w/ C or btr; Pre- or coreq(s): AEE 465 w/ C or btr if completed; EEE 350 w/ C or btr if completed OR Visiting University Student
AEE	462	Space Vehicle Dynamics/Control	Attitude dynamics and control, orbital mechanics, orbital transfer/rendezvous, spacecraft control systems design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 301 with C or better; MAE 318 with C or better
AEE	463	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; AEE 362 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) OR Visiting University Student
AEE	465	Rocket Propulsion	Rocket flight performance; nozzle design; combustion of liquid and solid propellants; component design; advanced propulsion systems; interplanetary missions; testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering major; AEE 362 with C or better; AEE 462 with C or better OR Visiting University Student
AEE	466	Rotary Wing Aerodynamics/Perfm	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; Credit is allowed for only AEE 466 or MAE 566
AEE	468	Aircraft Systems Design	Group projects related to aircraft vehicle design, working from mission definition and continuing through preliminary design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Aeronautics) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 344 with C or better; Pre- or corequisite(s): AEE 463 with C or better if completed OR Visiting University Student
AEE	471	Computational Fluid Dynamics	Numerical solutions for selected problems in fluid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 or MEE 340 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 471 or MAE 561
AEE	478	Fund Autonomous Aircraft Sys	First of a two-semester capstone sequence. Introduces autonomous aircraft performance and operations, aircraft performance prediction, ground control and support, sensors, communications and telemetry, aerospace ethics and law, design methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Autonomous Vehicle Systems) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 360 with C or better; MAE 214 with C or better OR Visiting University Student
AEE	479	Design of Autonomous A/C Sys	Second of a two-semester capstone sequence. Autonomous aircraft design project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 400 with C or better; AEE 478 with C or better

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AEE	480	Space Systems Design	Group projects related to space systems design, working from mission definition and continuing through conceptual design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Aeronautics) BSE major; AEE 445 with C or better; AEE 465 (or MAE 465) with C or better; EEE 350 with C or better; MAE 214 with C or better
AEP	501	Practical, Professional Ethics	Acquaints students with practical and professional ethics. Assumes no prior experience in ethics, and provides practicable knowledge as well as theoretical knowledge. The first in a series of courses for the MA program in Applied Ethics and the Professions, the course is primarily intended to prepare students in that degree program for their subsequent courses. However, it has been designed to be useful to all graduate students who are interested in learning about practical and professional ethics. The beginning of the course is devoted to the more general subjects of practical ("everyday") ethics and professional ethics, while the remaining weeks are spent focusing on the ethical issues that occur in the context of specific professions, with particular emphasis given to those professions that seem most relevant to the aspirations and interests of the students enrolled in the course.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): graduate student or Barrett Honors student
AEP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AES	101	Air Force Today I	Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	102	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes common Air Force customs and courtesies, drill and ceremonies, health and physical fitness through group participation.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 101 OR Visiting University Student
AES	103	Air Force Today II	Introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: introduction to leadership, Air Force core values, introduction to interpersonal communication and team building, and a continuation of communication skills.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	104	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes learning the environments and dynamics of an Air Force officer.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 103

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AES	201	Evol/USAF Air/Space Power I	Focuses on facilitating the transition from Air Force ROTC cadet to Air Force ROTC candidate. Examines the general aspects of air and space power through a historical perspective. Utilizing this perspective, covers a time period from the first balloons and dirigibles to the modern technology currently used in overseas contingency operations. Featured topics include: Air Force heritage, Air Force leaders, introduction to ethics and values, group leadership problems and continuing application of communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	202	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Provides application of advanced drill and ceremonies; issuing commands; knowing flag etiquette; and developing, directing, and evaluating skills to lead others.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 201 OR Visiting University Student
AES	203	Evol/USAF Air/Space Power II	Provides knowledge-level understanding for general element and employment of air and space power. Furthermore, discusses the importance of Air Force Core Values with use of operational examples and historical Air Force leaders. Continues to develop communication skills. Topics include: the Air Force mission and organization, modern joint expeditionary Airmen, officer opportunities, and professionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	204	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes preparation for field training.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 203
AES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	1-4		
AES	301	Air Force Leadership Studies I	Study of communication skills, leadership and quality management fundamentals, leadership ethics, and professional knowledge required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	
AES	302	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experiences applying leadership and management principles to motivate and enhance the performance of other cadets.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 301 OR Visiting University Student
AES	303	Air Force Leadership Stds II	Continuation of AES 301. Topics include: communication skills, ethics, leadership, professional knowledge, and quality management required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	
AES	304	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes planning the military activities of the cadet corps and applying advanced leadership methods.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 303
AES	401	National Security Affairs	Examines advanced ethics, Air Force doctrine, national security process, and regional studies. Special topics include: civilian control of the military, military justice, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	
AES	402	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experience demonstrating learned skills in planning and controlling the military activities of the corps.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 401 OR Visiting University Student
AES	403	Preparation for Active Duty II	Continuation of AES 401. Topics include: civilian control of the military, doctrine, ethics, military justice, the national security process, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3		
AES	404	Leadership Lab	Continuation of AES 402 with emphasis on preparation for transition from civilian to military life.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		
AET	210	Measurements and Testing	Measurement systems, components, system response, and the characteristics of experimental data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 112; Pre/Corequisite(s): MAT 266
AET	215	Aircraft Systems	Principles and design features of aircraft structures, systems, and materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
AET	300	Aircraft Design I	Applied aerodynamics, standard atmosphere, speed measurement, infinite and finite wings, airplane performance.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: AET 215; MET 211, ECE 210, or MAE 212

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AET	415	Gas Dynamics and Propulsion	Introduces compressible flow, internal and external flow, and aerothermodynamic analysis of propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): AET 300; MET 340 or MAE 340 or Fulton Schools of Engineering graduate student
AET	417	Aerospace Structures	Analysis and design of aircraft and aerospace structures. Shear flow. Semimonocoque structures. Effects of dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 213, MET 313 (or ECE 313); MET 212, AET 312 (or ECE 312); AET 300
AET	420	Experimental Aero/Wind Tunnel	Experimental applied aerodynamics related to aeronautical and mechanical design. Wind tunnel design and testing. Low speed flows.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: AET 300; MET 340
AET	524	Application of Heat Transfer	Energy conservation, steady-state and transient conduction, convection transfer, free and forced convection Reynolds analogy, blackbody and environmental radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 432 or MAE 340; Credit is allowed for only AET 524 or AET 432
AET	560	Numerical Methods/Engr Tech	Analyzes problems in physical sciences, models physical problems, perturbation techniques, curvefitting, data analysis, numerical solutions, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering students; Senior or higher academic level
AFR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	200	Intro to Africana Studies	Introduces the study of African and African-descended peoples; theory, themes, and perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	
AFR	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
AFR	210	Intro African American Studies	Examines the political, historical, and cultural origins of African American studies as an academic discipline.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	
AFR	212	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
AFR	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
AFR	225	Black Movements in America	Survey course on the historical and political development of mass movements by African Americans and Black resistance in the United States. Traces nearly 400 years of Black resistance against injustices and mass struggles for equality and liberation. Topics include the anti-slavery movement, anti-lynching campaign, the Civil Rights movement, the Black Power movement, prison abolitionism, the reproductive justice movement, and movements for economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only AFR 225 (or AFS 225) or JUS 200 (Black Movements in America) or JUS 225
AFR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	300	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
AFR	301	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
AFR	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
AFR	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304

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AFR	305	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
AFR	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
AFR	318	African/Diaspora Wmn Writers	Intersection of race, class, gender, and ethnicity in black women's fiction from the United States, the Caribbean, and Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit allowed only for AFR 318 (or AFH 318) or WST 318
AFR	320	Africa: Politics, Enviro & Dev	An in-depth analysis of the African experience as a way to understand the consequences of human environment relationships, wealth and power differentials, and individual and global citizenship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	325	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
AFR	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student
AFR	335	Hstrol Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s):ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
AFR	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
AFR	340	The Making of Modern Africa	Advanced study of the events and processes leading up to the colonization of Africa and the subsequent changes in African societies under colonial rule and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours OR Visiting University Student
AFR	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345
AFR	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
AFR	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353

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AFR	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
AFR	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AFR	355	Democracy/Civil Society/Africa	Advanced examination of contending perspectives on the state and civil society of Africa. Course will specifically analyze the democratic struggles in sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student
AFR	360	Black Families in the Diaspora	Within a historical, cultural, social-economic, and international context, the institution of Black families begins with their lives in Africa, South America, and the Caribbean and follows the cultural continuities and adaptations impacting the structure and functioning of contemporary African America families. Theoretical models provide focus to studying voluntary and involuntary migration, family labor force involvement, gender roles, marital relations, parenting, kinship and community networks. Throughout the course attention is given to the role of social policies in shaping the well-being of Black families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 (or AFS 200) or FAS 101; Credit is allowed for only AFR 360 (or AFS 360) or FAS 360
AFR	363	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
AFR	364	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C & H	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
AFR	365	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 365 (or AFH 364) or WST 364
AFR	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
AFR	368	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Eroticism)
AFR	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student

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AFR	372	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
AFR	373	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
AFR	375	Race, Gender and Sport	Advanced and interdisciplinary examination of the social concepts of race and gender and their economic impact on sports in America. In-depth studies will focus on the role of regulatory agencies, the impact of these regulatory agencies have on sport as well as multiple legal issues surrounding athletics	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 or minimum 45 hours OR Visiting University Student
AFR	383	Blacks in Sci, Med & Publ Hlth	In-depth study of Blacks who have made significant contributions to science and medicine in the U.S. Begins with a critical examination of ancient African scientific contributions. Highlights specific individuals, analyzing their life's path to their respective careers. Also discusses the role of racism and discrimination and their efforts to overcome these.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 383 (or AFS 383) or AFS 394 (Blacks in Science, Medicine, and Public Health)
AFR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	418	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
AFR	420	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
AFR	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
AFR	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & G	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only AFR 459 (or AFH 459) or ENG 459
AFR	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student
AFR	465	Harlem Renaiss:Cultural Hist	Socio-political, historical contexts and worldwide ramifications of the cultural productions (theater, music, visual arts, and literature) of the Harlem Renaissance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		
AFR	466	Peoples and Cultures of Africa	An in-depth study of the diversity of African people and culture from an interdisciplinary perspective. Emphasizes social, political, and economic relations, as well as inequality, art, gender roles, slavery, and slave trade.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student
AFR	470	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471

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AFR	480	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
AFR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AFR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
AFR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student
AFR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): 9 upper-division hours, or AFR 200 (or AFS 200) and minimum junior standing
AFR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
AFR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	502	Africa/African Diaspora World	Combines lecture, critical discussion of readings, guest speakers, student presentations and individual research projects. Drawing on various sources (written, oral, archaeology), explores themes linking peoples of Africa and African heritage in Africa, the United States, the West Indies and Latin America, and Europe, the processes of cultural transformations in Africa and the evolution of African cultures and survival in the New World. Explores topics including transatlantic slave trade, comparative slavery, African-American and Latin America emigration to Africa, African immigration to the New World and the Pan-African movement. Emphasizes links between blacks in Africa, the West Indies and the United States, the cultural and political influences they had on each other and the legacy that remains in these areas today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AFR 500 (Africa and the Diaspora World) or AFR 502
AFR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	100	Introduction to Agribusiness	Overview of agribusiness industries and career opportunities.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		

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AGB	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
AGB	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
AGB	250	Resource Allocation	Beginning class that focuses on the specific microeconomic principles that are needed to understand the food industry, agricultural production, food safety and production of renewable natural resources. Focuses extensively on the detailed information that students need to understand the nuances of specific issues associated with the food, agriculture and renewable natural resources, including a keen understanding of monopolistic competition, the economic rationale for governmental regulation, effects of property rights on renewable resources, agricultural price supports, prospect theory and behavioral economics.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 250 or AGB 294 (Economics of Resource Allocation) OR Visiting University Student
AGB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	302	International Mgt and Agribus	Management and agribusiness issues in the transition of developing countries from subsistence to global operations and competition.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	G	Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	321	Agribusiness Marketing	Focuses on food and consumer products marketing at an intermediate level. Covers strategic concepts such as situational analysis, planning and objectives, and target marketing and positioning. Illustrates both the theory and application of strategic decision making through case analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	333	Agribusiness Finance	Examines the markets, institutions and current issues important to financing firms in the food and agribusiness sector. Topics include cost of capital, specialized lending institutions (farm credit system), credit decisions, vendor financing, private equity, institutional ownership, cooperatives and risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	340	Food Processing	Introduces processed food quality assurance, statistical sampling, and inspection procedures.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	360	Agribusiness Statistics	Statistical methods with applications in agribusiness and resource management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	CS	
AGB	366	Agribusiness Production Tech	Examines methods for managing diverse crop and livestock enterprises with an emphasis on growth, development, marketing, and loss prevention.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	367	Agribusiness Processing Tech	Biotechnology and other methods used in the production, processing, and distribution of food.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	410	Agribusiness Management	Business operations and human resource management principles applied to real-world problems faced by firms across the food and agribusiness value chain, with emphasis given to the formulation, implementation and evaluation of competitive strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	414	Food and Agribus Policy Issues	Analysis of agribusiness firm decisions in the ecological, economic, social, and political environments. Special emphasis on ethical issues surrounding food production and consumption.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	L	Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	420	Food Advertising and Promotion	Focuses on advertising and promotional strategies in the food industry, with emphasis on consumer packaged goods.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	425	Food Supply Networks	Information, methods and resources used in the management of global food supply networks. Emphasizes systems of food marketing and distribution from the farm to the consumer.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	429	Mkt Comm in Food & Agrib Ind	Focuses on written and oral communication in the food and agribusiness industries. Through real-world projects and collegiate marketing competitions, students address current issues in the food and agribusiness industries. Students learn how to effectively communicate strategic visions. Also entails research in the food and agribusiness industries to support strategic plans.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300, 302, 303, or 390 or minimum 56 hours
AGB	431	Agribusiness Financial Mgt	Comprehensive treatment of topics in financial management of agribusiness: capital structure, dividend policy, asset valuation, mergers and acquisitions, risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321, FIN 300 or TMC 320

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AGB	433	Agribusiness Financial Markets	Role and function of agribusiness in U.S. financial system. Topics include rural banking, farm credit system, monetary policy, and federal reserve.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 333 or FIN 300
AGB	435	Commodity Future and Opt Mkts	Provides an understanding of how to use futures and options markets in a risk management and pricing context, especially as it pertains to the marketing and procurement of agricultural commodities by grain and livestock merchandisers, food manufacturers, and producers/distributors/consumers of natural resources.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	440	Food Safety	Control, prevention, and prediction of microbial and chemical food-borne diseases.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	445	Food Retailing	Critical examination of trends, problems and management functions of food retail managers across various retail institutions. Emphasizes the biological nature of food products and the dietary preferences of consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300 or MKT 302 or MKT 303 or MKT 390 OR Visiting University Student
AGB	452	Global Food&Agricultural Trade	Applies international trade theory to analyze the effects of government policies and trade agreements on the global food and agribusiness sector.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 45 hours
AGB	456	Food Prod Innovation and Dev	The food product development process and how it interfaces with food technology and packaging concepts. Emphasizes the team approach, which is prevalent in the food industry.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	481	Strategic Pricing in Food Mkts	By applying the basic concepts of microeconomics to real-world data, this course allows the student to not only gain a book-oriented understanding of how businesses in the food industry behave, but practical, hands-on experience that lasts far beyond the classroom.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6		Prerequisite(s): Barrett Honors student
AGB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6	L	Prerequisite(s): Barrett Honors student
AGB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-7		
AGB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	511	Advanced Agribusiness Mgmt	Analysis of organization behavior, change, and resource requirements within agribusiness systems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	514	Advanced Agribusiness Analysis	Vertical integration and differentiation in food and agricultural industries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	528	Adv Agribusiness Marketing	Theory and analysis of marketing strategy related to food and fiber products. Covers concepts of strategic market planning (e.g., segmenting, targeting and positioning), with application of these concepts at an advanced level. Also examines the broad social, cultural, political and economic issues that impact marketing.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	529	Adv Agribus Marketing Channels	Analyzes agribusiness market channel systems. Formulation of marketing strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	532	Advanced Agribusiness Finance	Financial management of agribusiness firms; agribusiness financial analysis, investment analysis, agricultural risk management, and introduction to agricultural financial intermediaries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	535	Commodity Analysis	Analysis of commodity markets.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	552	Intl Agricultural Policy	Uses international trade theory to analyze the effects of government policies, trade agreements, and exchange rates on agribusiness.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	554	Advanced International Trade	Advanced international practices in trading of agribusiness, technology, and resource products and services.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	560	Adv Agribusiness Mgmt Systems	Development and use of decision support systems for agribusiness management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	561	Applied Econometrics	Uses model building, hypothesis testing, and empirical analysis in solving agribusiness problems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	570	Managerial Econ for Agribus	Concepts in micro- and macroeconomics applied to agribusiness management environments: price formation, market structure, information economics, fiscal and monetary policy.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	589	Agribusiness Capstone	Strategic management of organizations focusing on developing value-creating strategies in dynamic environments.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Morrison School of Agribusiness	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	701	Adv AGB I: Adv AGB Analysis	Advanced topics include benefit-cost analysis, input-output analysis, consumer demand, agricultural policy, international trade, welfare economics and applied mathematical economics.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	702	Adv AGB II: Applied Econometr	Econometric analysis techniques applied to multinomial and count models, welfare economics, demand models and maximum likelihood estimation using STATA.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	703	ADV AGB III: ADV Empirical Mo	Microeconomics applied to empirical models involving agribusiness including consumer and producer theory, empirical industrial organization, strategic choice and price behavior.	N	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	101	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
AIS	102	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
AIS	180	Intro/American Indian Studies	Introduces the study of American Indian justice issues from an interdisciplinary perspective. Primary topics include sovereignty, law, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	
AIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	201	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
AIS	202	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
AIS	280	Amer Indian Sovereignty/Courts	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	285	Federal Indian Policy	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	320	AI Philosophies & World Views	Does it make sense to speak about American Indian intellectuals, thinkers or philosophers? Not only have Indians been thinking and thinking deeply for generations, but they have also produced a body of written works that have formed the foundation of contemporary American Indian studies. Covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; junior standing; Credit is allowed for only AIS 320 or AIS 394 (American Indian Philosophical/World Views) OR Visiting University Student
AIS	360	Issues in Urban Indian Country	In-depth examination of the historical, social, economic, and political implications of indigenous migrations to urban areas. Over 50% of Native people are living in cities. What are they doing? Why are they there? Are they still under the federal trust relationship? Evaluates the social, political, and economic structures built by American Indians living in the urban environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 360 or 394 (Issues in Urban Indian Country)
AIS	370	Amer Indian Languages/Cultures	Emphasizes understanding of Indian language families and the relationship of oral traditions to culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): AIS 180 with C or better

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AIS	375	Innovation for AI Sustainabili	American Indian tribes are poised at an historic opportunity to accelerate innovation within their communities. Many tribal leaders have stated that to create true sustainability, tribes need to practice innovation and sustainable development in a manner that is a cultural match to their traditions and values. Examines topics directly associated with creating tribal economies with innovation, entrepreneurial and sustainability in an American Indian context as key factors. Consists of class lectures, guest speakers, student discussion, individual and group teamwork, and presentations. Participants form into teams to identify, develop and define an innovative product or service idea that addresses a significant need in Indian Country that can be addressed through innovation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 375 or AIS 394 (Innovation for American Indian Sustainability)
AIS	380	Contemp Issues/American Indian	Surveys legal, socioeconomic, political, and educational state of contemporary reservation and urban Indians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	
AIS	381	American Indian Women	Draws from a diverse range of Indigenous critical traditions to examine discourses of gender, identity, and sexuality as sites of cultural revitalization and conflict and theorizes the meaning of each of these categories from diverse Indigenous communities. Considers contemporary and traditional works by Indigenous women with a special emphasis on the historical, socio-cultural, and legal contexts of each work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): WST 100, 300, or AIS 180 with C or better OR Corequisite(s) if completed 30 hours or more: AIS 180, or WST 100 or 300; Credit is allowed for only AIS 381 or WST 382
AIS	385	Entrepren for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
AIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	420	Amer Indian Studies Research	Surveys diverse research methods, including statistical, historical, interpretative, and narrative approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	L	Prerequisite(s): AIS 180 with C or better OR Visiting University Student
AIS	430	Contemp Indigenous Spirituality	Why do so many indigenous people across North America want to revitalize their traditional ways when there is supposedly so much opportunity awaiting them in all segments of American society? What are the benefits of such an endeavor and what might be the consequences if this objective is not pursued? This course is premised on the hypothesis that indigenous customs and beliefs contain knowledge that is not only vital to the well-being of the communities in which this native wisdom is found, but also to those communities seeking a more sustainable way of living in the land they call home. After delving into a critique of the religious principles that went into the settling of America, complete with notions of manifest destiny, a way is opened for a more native-oriented discourse on community, nature, economy, and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 430 or 494 (Ind Spirituality in Postmodern)
AIS	440	Cultural Professionalism	Emphasizes professional and leadership skills to prepare students for academic and career endeavors after undergraduate degree completion. Explores indigenous perspectives on communication, research, professional and leadership skills. Research focuses on addressing the needs of Arizona Indian Nations and Tribes and culminates in a research paper, in-class presentation and community development poster presentation. Showcases research posters in a research symposium in which guests vote on the most innovative and practical poster proposal.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only AIS 440 or AIS 494 (Cultural Professionalism)

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AIS	445	AI Leadership and Resistance	Examines the modern challenges that leaders face in American Indian communities with a foundation in indigenous concepts of leadership, sovereignty and nationhood. Topics include pre-contact leadership principles and systems of governance, tribal sovereignty, nation-building, politics, governing systems, leadership styles, military leadership, internal disputes and conflict resolution, activism, mobilization, community leadership, political/elected leadership, and other leadership-related topics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	SB & H & C	Prerequisite(s): minimum junior standing or 3 hours of an AIS course; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521
AIS	455	Cultural Resource Law	Examines how U.S. laws, policies, executive orders, and court decisions have affected Indian nations and peoples in matters of cultural resources and burial rights. Considers the protests, legal battles, and political campaigns Indians have waged to reaffirm their fundamental human rights in the areas of repatriation and sacred sites protection. Examines the ways in which filmmakers and the media present these issues to the public. Assesses the present status of Indian religious rights and cultural resource laws. Sovereignty and its relationship to Indian spirituality is a theme that permeates the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 455 or 494 (American Indian Cultural Resources)
AIS	470	Tribal Governance	Critical and historical examination of Indigenous governance and leadership. Includes a survey of historical policy developments and political change that laid the foundation for contemporary Indian government and an assessment of the effectiveness of modern tribal administrations and decision-making bodies. Explores the diverse approaches to tribal governance, community-based political strategy and local interpretations and assertions of sovereignty and self-governance. Project work facilitates focused student learning on the challenges and opportunities in government for a specific Indian nation. Case work and consultation with practitioners in Indian government complement textbook reading in law, history and policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Pre-requisite: AIS 285; Credit is allowed for only AIS 470 or AIS 494, Tribal Governance
AIS	480	Actualizing Decolonization	Provides an in-depth investigation of the theory and concepts of colonization, decolonization, and Indigenous peoples in America, with brief comparisons with global Indigenous peoples and experiences. Covers classic scholarly works on colonization and decolonization to understand the frameworks in which colonization and decolonization develops, expands, and impacts Indigenous peoples. Through that theoretical understanding, examines and formulates ways in which decolonization can impact and be integrated into Indigenous lives and communities. Students shift from theory to praxis by writing and presenting on an informal grant proposal for a decolonizing project that can be implemented in an Indigenous or non-Indigenous community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C & G	Prerequisite(s): ENG 101; ENG 102; junior standing; Credit is allowed for only AIS 480 or AIS 494 (Readings-Decolonization) OR Visiting University Student
AIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6		Prerequisite(s): Barrett Honors student
AIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6	L	Prerequisite(s): Barrett Honors student
AIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-7	L	
AIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-3		

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AIS	501	AIS Paradigms	American Indian Studies emerged as an academic discipline in the late 1960s in part because of increasing dissatisfaction among Indians about the works of historians, anthropologists, and other scholars that was very often marred by methodological and conceptual flaws. Course provides an overview of ways of "doing" Indian studies from an American Indian Studies paradigm(s) through a critical examination of some of the most significant works emanating from this growing body of literature. Critiques paradigms that selected scholars have employed in the researching and writing of their topics. Seminar format allows students to take the lead in discussing each week's readings. Covers a range of scholarship dealing with American Indian issues; explores the development of American Indian Studies as an academic discipline; probes paradigms that Indigenous scholars have developed; and considers how those paradigms differ from those used by other disciplines.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	502	AIS Research Methods	Prepares students for thesis research, writing, and completion. Surveys graduate research methods in the field of American Indian Studies including historical, interpretative, and narrative approaches. Focuses on methodological issues specific but not limited to American Indian and Indigenous Studies. Focuses on Indian-centered methodological approaches to research that are essential to qualitative writing of the various topics in Indian country and other issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	503	Contemporary Issues of AIN	Provides an overview of the current status of American Indian Nations with regard to sovereignty, policy, politics, economy, and society. An exploration of current issues illustrates the unique challenges and innovative solutions put forth by Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	504	Amer Indian Film & Activism	Examines the American Indian film and activism with emphases on American Indian production, directing, editing, investigative journalism, documentary film, entertainment, and research. Exposes students to the development of activism in film and how film has been utilized to educate, inspire, and contribute to the challenges in Indian Country.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	505	Contemporary Visual Arts of AI	Focuses on a critical analysis of art, film, and media as they intersect with shaping the image and sustaining the culture of American Indians in North America. Examines the persistent and inappropriate stereotypes of American Indians as portrayed in film and media, including explanations for the persistence of negative stereotypes drawing on various aspects of critical race theory including power, politics, and race. Also introduces the scope and diversity of American Indian art and artists and highlights how native artists portray their views and culture through contemporary image making and representations. Stresses the interplay of art with sovereignty, identity, and politics. Emphasizes the powerful and significant connection between contemporary American Indian art and the persistence of indigenous cultures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	506	Indigenous American Literature	Teaches Indigenous (Indian, Native American, First Nations) literature's role in Indigenous history, cultural history, philosophy, society, culture, and developing cultural traditions. Students learn how tribal communities articulate themselves intellectually and artistically through literature and its development locally, nationally, and internationally.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	508	Revitalize Indigenous Language	Critically examines Indigenous languages, their decline and revitalization from a language ecology and a self-determination perspective. Includes historical, sociopolitical, educational, linguistic, sociolinguistic, and cultural issues that have had and continue to impact Indigenous peoples and their languages worldwide and their reclamation efforts. Also examines various epistemologies, theories, ideologies, and practices of Indigenous people (including American Indian, Indigenous Alaskan, Hawaiian, Maori, Quechua). Topics include: language policy and planning, language acquisition, child language socialization, identity development, bilingual education, Indigenous language pedagogy, and current models and approaches for Indigenous language maintenance and revitalization (ILMR).	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	509	Amer Indian& Indigenous Rights	Examines the rights of American Indian peoples with an emphasis on asserting indigenous rights in national as well as international forums. Challenges students to address issues related, but limited to: treaty rights, land rights, water rights, self-determination, rights to a distinct culture, religion, language, spiritual practices, customs, ceremonies, nationhood, autonomy, to seek redress and justice, rights to education, rights to protect from destruction and violence, rights to economic development, rights to protect lands from military, ecological, cultural, and environmental threats, and other rights that may effect the lives of American Indian people.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only AIS 509 or AIS 494 (American Indian and Indigenous Rights)
AIS	510	Social Change in Amer Ind Comm	Committed to the preservation of political autonomy and cultural identity, American Indian communities are increasingly gaining rule over the effects of social change impinged upon them. Recapturing their histories and redefining colonial relationships, they are forging a preferred future grounded in their own traditional institutions of community, religions, and strengthening of self-determination. Provides students with: (1) an understanding of the enduring struggle of American Indian communities to resist the movement of collective assimilation and retain the right of self-determination; (2) an examination over time of social changes in American Indian communities' social structures and their political and social movements towards the establishment of environmental, economic, and social justice; and (3) knowledge of strategies and tactic for achieving social change within American Indian communities that support Indian self-determination and self-governance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	511	Gender and Sexualities	Grounds students in the theory and concepts of American Indian genders and sexualities. In American Indian societies, there were more than two genders. With colonization through laws, boarding schools, and loss of culture, language, and land, these different genders were attacked and made to disappear. Examine the concepts of gender and sexuality from Native perspectives and theory, and through western imperial views. Also covers the ways in which decolonization plays a role in understanding indigenous genders and sexualities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	512	Hist Trauma, Heal & Decoloniza	In recent years, scholars have begun to explore the prevalence of historical trauma among American Indian communities. This research argues that the genocide, violence, breakdown of customary cultures through external coercion; and oppression that Indians continue to face at the hands of foreign colonizers has left Indians with harmed with intergenerational self-destructive behavior, domestic violence, suicide, anxiety, depression, low self-esteem, and anger. As a result of this violence and oppression, they have developed models of recovering healthy nations while challenging violations of their human rights in the domestic and international arenas. This history has given rise to a widespread cultural revitalization movement often referred to as decolonization. Scholars from an array of academic disciplines are producing a growing body of literature about decolonization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	513	Urban Indian Issues	According to the 2010 Census, 64.1% of the American Indian/Alaskan Native population resides in a place outside of tribal areas. Cities such as Los Angeles, New York, and Phoenix have historically counted more than 25,000 American Indian residents. What draws Indigenous families to urban areas? How does an urban address impact the federal trust relationship with nonreservation Indians? What are the social, political, and economic implications for a family who lives off the reservation and away from tribal homeland? Course explores these issues and dynamics and challenges the student to examine the unique identity and contributions of urban Indians. Students learn the history of Indigenous migrations to the city and assess current needs and concerns through consultation work coordinated with Phoenix area Indian Centers and nonprofit organizations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	514	American Indian Intellectuals	Does it make sense to speak about American Indian "intellectuals," "thinkers," or "philosophers"? Not only have Indians been thinking and thinking deeply for generations, but they have produced a body of written works that have formed the foundation of contemporary American Indian studies. Course covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	515	Work & Legacy of Vine Deloria	Vine Deloria, Jr. Standing Rock Sioux (1933-2005) has often been referred to as "Uncle Vine" for his role in the intellectual development of innumerable scholars, as well as legal and political figures, all of whom have striven along side Deloria at making the world a better and more just place for indigenous communities. As such, Deloria has also been labeled "the Dean of American Indian Studies" because of his work at shaping the intellectual and political agenda, which began in 1969 with the seminal publication of Custer Died for Your Sins: An Indian Manifesto and continued posthumously with works on the medicine man traditions throughout North America and a reflection on Carl Gustav Jung's analyses of American Indian customs and beliefs. This seminar, the first of its kind, takes a comprehensive look at Deloria's philosophical and legalistic legacy by examining his major works and analyzing, in addition to critiquing, the ideas and opinions that shaped his intellectual career.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	516	Concepts of Power & Indigeneity	Grounds students in the theory and concepts of power and indigeneity with comparisons with global Indigenous peoples and experiences. Through that theoretical understanding, examines and understands ways in which these concepts impact Indigenous communities and formulates ways in which to develop practical ways to address these issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	517	Customary Tribal Law and Govern	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	518	Tribal Jurisdiction	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	519	Burial Rights & Sacred Matters	Probes U.S. laws and policies, court cases, and Indian struggles for dignity, burial rights, repatriation, and religious freedom from the late 1800s to the present. Examines developments in the United Nations and international arena pertaining to Indigenous human rights, religious freedom, repatriation, and sacred places protection. U.S. policies, laws, practices, court decisions, land developers, pot hunters, and archaeologists have restricted the human rights of American Indians in terms of burial rights and religious freedom. Congress has enacted cultural resource and environmental protection laws, religious freedom, and reburial laws that aim to regulate the use and abuse of cultural resources and Indian rights.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	521	AI Leadership and Resistance	Examines the modern leadership struggles in American Indian communities with a foundation of traditional concepts of leadership. Topics include leadership qualities and systems pre-contact, federal-tribal relations, state-tribal relations, tribal politics, internal disputes, activism, mobilization, cultural continuity, social change, community leadership, political/elected leadership, diplomacy, political agendas, and other topics related to American Indian leadership and resistance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521

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AIS	522	Tribal Governance	Explores American Indian leadership, political ideology, and the history and current state of tribal government. What makes tribal governments tick? Examines past and present challenges faced by leaders and members of indigenous communities. Brainstorms potential strategies for the further enhancement, protection, and assertion of this indigenous "brand" of governance. How do politics, policy development and the ever-changing face of indigenous sovereignty impact the way we think about governance? How can we educate and inspire tribal communities to have greater ownership and interest in government? Students engage with the current research, debate the issues, and learn from people who provide governance to indigenous communities. Case studies focus on specific issues in local communities. Individual portfolio project work facilitates learning and the articulation of leadership and governance as practiced by one particular tribe of your choice.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	523	Com Dev with AI Communities	Tribal community development is more complicated than large urban population centers or even rural communities because tribal communities continue to struggle with years of colonial, paternalistic, and assimilationist federal policies that have impeded their efforts to become self-determined and self-governing nations. Provides students with the knowledge and skills they need to support community development in American Indian communities within a self-determined and self-governing context. Content includes: (1) a framework for review of current economic, political, social, and cultural issues facing American Indian communities; (2) an overview of community development theories, of the underlying values behind those ideas, and of the linkages between theory and practice in American Indian and other Indigenous communities; and (3) a sampling of intervention strategies and tactics for effective community development in American Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	524	Indian Control of Indian Educ	Examines American Indian control of education from a tribal college and university perspective. Focuses on the tribal college movement, including the historical and contemporary political, policy, research, and best practices that have influenced and sustained tribal colleges and universities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	American Indian Studies Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
ALA	100	Intro to Environmental Design	Surveys environmental design: includes historic examples and the theoretical, social, technical, and environmental forces that shape them.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H & G	Credit is allowed for only ALA 100 or PUP 100 OR Visiting University Student
ALA	102	Landscapes and Sustainability	Surveys ideas relating to landscapes and sustainability and the role of landscape architecture in the creation of humanized environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	

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ALA	121	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student
ALA	122	Design Fundamentals II	Exercises in basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ALA 121 with C or better; Architecture, Environmental Design or Landscape Architecture major. Corequisite(s): ALA 124
ALA	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
ALA	225	Design Fundamentals III	Applies history and theory of design fundamentals with an emphasis on architectural and landscape architectural design issues.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Architectural Studies major; ALA 122 with C or better; passed Architectural Studies milestone; Corequisite(s): ALA 235 OR Visiting University Student
ALA	226	Design Fundamentals IV	Basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): ALA 225 with C or better
ALA	235	Intro to Computer Modeling	Fundamentals of computer operation, geographic information systems, geometric modeling of 3-D forms and rendering of light, mathematical modeling of processes using spreadsheets.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Architecture BSD or Environmental Design BS major; Corequisite(s): ALA 225 or EDS 200 OR Visiting University Student
ALA	240	Sustainable Dgn in Built Envir	Reviews the physical principles used in the design of sustainable buildings, landscapes, and urban environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
ALA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ALD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Aging and Lifespan Development	1-4		
ALT	405	Power Conditioning	Fundamentals of power electronics; DC-DC converters and DC-AC inverters; battery charge controllers. Lab experience.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only ALT 405 or 505
ALT	412	Village Energy Systems	The role of energy resources in economic development. The need for and use of energy at the Base of the Economic Pyramid (BoP). Individual Problem Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Senior Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum. Credit is allowed for only ALT 412 or ALT 494 (Village Energy Systems)
ALT	420	Electrochemical Energy Tech	Thermodynamic and electrochemical principles of fuel cells. Hands-on experience on fabrication and testing of fuel cells; problem solving skills.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: CHM 113; ALT 360
ALT	435	Applied Photovoltaics	Overview of solar radiation, operating principles of photovoltaics, qualitative analysis on influencing parameters. market trends, basics of PV systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; ALT 410 (not required for BAS students); Credit is allowed for only ALT 435 or 535
ALT	445	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific application.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; CHM 113; Credit is allowed for only ALT 445 or 545
ALT	502	Batteries Portable Electronics	Theoretical and practical overview of primary, secondary, and lithium batteries. Key performance characteristics, construction materials, typical applications, recycling, and disposal.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	505	Power Conditioning	Fundamentals of power electronics, DC-DC converters and DC-AC inverters, battery charge controllers.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Credit is allowed for only ALT 405 or 505
ALT	507	Evaluation Photovoltaic & FCS	Field testing, data collection, and evaluation of real-world photovoltaic and fuel cell systems available on campus and data analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	512	Village Energy Systems	Establishes leadership in the development of energy resources at the Base of the Economic Pyramid (BoP). Individual Problem-Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum; Credit allowed for only ALT 512 or ALT 598 (Village Energy Systems)
ALT	515	Reliability and Standards	Alternative energy systems and their reliability issues, accelerated life and safety testing, standards and codes, regulatory requirements.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ALT	535	Applied Photovoltaics	Term projects, overview of solar radiation, operating principles, qualitative analysis on influencing parameters, market trends, basics of PV systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status; Credit is allowed for only ALT 435 or 535
ALT	545	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status. Credit is allowed for only ALT 445 or 545
AME	101	ASU Digital Culture Experience	Orientation to the Digital Culture program with emphasis on resources for academic success.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): Digital Culture BA or Digital Culture (Media Processing)BS major OR Visiting University Student
AME	111	Intro to Digital Culture	Examines the effects of digital technology on the way we live, communicate, learn, and create. Proposes that we are moving towards a hybrid (physical-digital) existence and culture. Traces that evolution, looks at current examples of hybrid cultural processes and outcomes, and discusses possible future trends. Discusses how these changes are influencing the work and career possibilities of people involved in all aspects of human culture. Comprises diverse readings, media products, class interaction, group discussion and hands-on collaborative projects exploring concepts covered in class. Also includes a number of guest lectures from ASU faculty.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 111 or 194 (Introduction to Digital Culture)
AME	112	Computational Thinking for DC	Introduces fundamental concepts relevant for understanding computation. What are algorithms and how can computer code express them? Basics of how real-world signals are captured, encoded, recorded, retrieved and decoded. Designed for students with little or no background in programming.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 112 or 194 (Computational Thinking for Digital Culture)
AME	120	Digital Culture Studio	Provides advice on career preparation and industry skills through a series of guest lectures. Sample topics include resumes, personal Websites and portfolios, how to pitch a project idea, and topics chosen by guest industry presenters.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Credit is allowed for only AME 120 or AME 194 (Digital Culture Studio)
AME	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	L	Credit is allowed for only AME 130 or ENG 130
AME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	210	Media Editing	Introduces the fundamental principles of media editing including form, composition, structure, pattern, sequence and rhythm. Using a combination of open source, commercial and custom-designed tools and platforms, students design, construct, communicate and interpret rich media messages. Through creating and critiquing visual compositions, audiovisual artifacts, spatial narratives or generated graphs, students explore the practice of media editing as a spatial, temporal and dynamic process.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 210 or AME 294 (Media Editing) or DSC 294 (Media Editing)
AME	220	Programming for the Web	Introduces a range of technologies used for Web development: marking up content with HTML, styling with CSS and interaction using Javascript. Explores the latest foundational Web standards such as HTML5 and CSS3 to learn how to create compelling content for the World Wide Web. Goes beyond simply coding a Web page to understanding how the Web works. The World Wide Web is used in an incredible variety of applications that we now find integral to our lives, from talking to our friends on Facebook to discovering music on the iTunes Music Store, paying bills from our bank's Web site to finding the route to our vacation destination on Google maps. Investigates how Web standards have enabled the creation of dynamic applications delivered over the Internet.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230 or CSE 110; Credit is allowed for only AME 220 or AME 294 (Programming for the Web)

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AME	230	Programming for Media Arts	Introductory-level course in practical aspects of programming systems for media arts. Explores techniques in programming in the context of images, sounds, interaction, networking and data visualization. Uses the processing programming language, an accessible yet powerful environment for learning how to program. Students create images, animations and interactive programs, and learn how to use images, movies, sound files, microphones and cameras in their programs.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 230 or AME 294 (Programming for Media Arts)
AME	240	Intro to Physical Computing	Students learn the basic skills required to build physical-computing systems through a series of practical tutorials and design challenges. These skills include basic fabrication with hand and CNC tools, electronic design fundamentals, circuit construction techniques, introductory microcontroller programming and the use of simple sensors and actuators. The primary difference between this introductory-level course and the advanced course is that students in this course are not expected to invent original projects. Projects with clear engineering and design challenges are assigned. Within the scope of these projects there are significant opportunities for creativity but the emphasis is on learning basic skills.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 240 or AME 294 (Introduction to Physical Computing)
AME	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
AME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	310	Media Literacies Composition	When we integrate computational systems into the core of our cultural and social practices, we reinvent how we tell stories. The roles of creators, critics and audiences are blurring at the same time that digital tools allow us to infinitely reproduce and remix narratives, radically changing what we mean by the "work" or "text." These new media platforms empower us to create, share and respond to cultural narratives that defy traditional notions of how stories operate, demanding new literacies. Explores our powers and responsibilities as readers, writers and creators of new cultural languages, including new forms such as games, digital video, electronic literature and social media. Students study relevant media narratives and cultural ecosystems from the 20th and 21st centuries, acquiring a set of literacies that they hone through practices of authorship, critique and collaboration, culminating in the presentation of their own digital media narratives.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AME 310 or AME 394 (Media Literacies & Composition)
AME	320	Motion Cap Integrative Sys	Presents the broad principles and techniques for movement study in oneself and others that includes applied, dynamic anatomy. Also presents the functional techniques for motion capture with a special emphasis on the capture of human movement from visual sensors. Students understand the technology behind motion capture; a high-level understanding of movement and anatomical systems; the ability to perform motion capture and customize it to suit the requirements of specific creative applications in animation, sound and live performance as well as applications in movement rehabilitation and education. Looks at the technology behind various modern motion capture systems based on markers, inertial sensors, accelerometers, and depth sensors, so the student appreciates the technical capabilities and limitations of each technique.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 320 or AME 394 (Motion Capture for Integrative Systems)

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AME	330	Digital-Physical Systems	Hands-on course where students explore digital-physical systems by working with the fundamental building blocks of interactive technologies and examining exemplar works of media art. Basics of electronics, circuit design, sensors, actuators, simple mechanical design, the iterative design process and microcontroller programming. Emphasizes media and arts applications such as real-time interactive performance, robotic installations and tangible computer interfaces.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 240; minimum 45 hours; Credit is allowed for only AME 330 or AME 394 (How to Build a Digital-Physical System) OR Visiting University Student
AME	333	Improvising Cyborgs	This experiential and practice-based course provides a multidisciplinary platform for students to work collaboratively to accomplish set creative challenges. Open to anyone with experience working with technology who wants to explore improvisation and performance, not only as art forms, but also to inform their making process, and translate these skills to other areas. Encourages sound/music, dance and visual practitioners to work together.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 333 or AME 394 (Improvising Cyborgs) OR Visiting University Student
AME	340	Comp & Computational Principle	In much of today's contemporary art practice there is a tight coupling of compositional form, content and underlying computational mechanisms. This integration holds the potential to yield new modes of expression and wholly new art experiences as is evident in emerging forms of real-time generative art, network-based art, game-based art, and interactive performance. As both practitioners and participants, we must develop a critical understanding of the relevant compositional and computational principles that frame this work. Students study relevant media art works from the 20th and 21st century, develop a working understanding of fundamental compositional and computational principles, and apply their understanding through the realization of exploratory media artworks that are presented at the end of the semester.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours
AME	385	Collab Projects & Research I	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): BA in the Arts (Digital Culture) or BA Design Studies (Digital Culture) or Digital Culture major; Minimum 45 earned hours; Credit is allowed for only AME 385 or 394 (Collaborative Projects & Research I)
AME	386	Collab Projects & Research II	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 385; Credit is allowed for only AME 386 or 394 (Collaborative Projects & Research II)
AME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	410	Interactive Materials	Focuses on embedding computation into the physical world and envisioning the future of tangible interactive media. Students make, tinker and experiment with high-tech and low-tech materials ranging from electronics (microcontrollers, sensors and actuators) to softer components including textiles, paper, paints, food and organic/living systems. Grounds hands-on, materially oriented work in theoretical concepts from HCI (Human Computer Interaction), speculative design and design fiction. Students build interactive prototypes as artifacts that exist in fictional worlds to explore emerging dialogues around desirable and undesirable futures.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 330
AME	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)

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AME	430	Mac Development for Media Arts	Explores native application development for OS X (Macintosh) for use in the domain of media arts. Project-based course covers the native Xcode development environment and the C and Objective-C programming languages. Native applications are able to achieve the highest levels of performance; they leverage the unique technologies built for a platform and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. To understand native apps for OS X, the course examines a number of code frameworks provided for developers by Apple (the core of which are often called Cocoa), including Foundation, AppKit, AV Foundation, Core Animation and SpriteKit.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230; Credit is allowed for only AME 430 or AME 494 (Mac Development for Media Arts) OR Visiting University Student
AME	435	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 430 or AME 494 (Mac Development for Media Arts); Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)
AME	444	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 244 or AME 294 (Introduction to Interactive Environments); Credit is allowed for only AME 444 or AME 494 (Media Installations) or AME 544 or AME 598 (Media Installations)
AME	470	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 220; minimum 45 hours; Credit is allowed for only AME 470 or AME 570
AME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		
AME	485	Digital Culture Capstone I	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Digital Culture student; minimum 70 hours; Credit is allowed for only AME 485 or AME 494 (Digital Culture Capstone I)
AME	486	Digital Culture Capstone II	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 485; Credit is allowed for only AME 486 or 494 (Digital Culture Capstone II)
AME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6		Prerequisite(s): Barrett Honors student
AME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6	L	Prerequisite(s): Barrett Honors student
AME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		

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AME	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-7	L	
AME	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-3		
AME	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
AME	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analys)
AME	520	Understanding Activity	Focuses on computational and humanistic underpinnings for describing human activities for interactive systems. Obtains a holistic understanding of both the computational models, as well as somatic approaches, and enables their translation into meaningful interactive systems for a variety of applications. Project-driven course encourages students to work individually and collaboratively to generate movement to interface with appropriate sensing, analysis and feedback systems with applications in health and well being, creative practices and games. Transdisciplinary course; therefore, expectations for skills and outcomes are multiple and varied, with students expected to work with students and ideas from other disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 520 or AME 598 (Understanding Activity)
AME	530	Experiential Media Studies I	Focuses on media arts and sciences in the 20th and 21st centuries, discussing issues surrounding the evolution of media art research and creation practices, methods of criticism and analysis, transdisciplinary work and research, collaboration and current trends. Emphasizes the methodology, theory and history behind the experimental study of experience via experiential systems. Directed toward those interested in researching, designing, building or critiquing experiential media systems that are culturally or technoscientifically provocative and socially meaningful.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	531	Experiential Media Studies II	Engages students in the theory and practice of designing and evaluating experiential media systems. Introduces advanced topics building on ideas and concepts explored in the companion introductory course. Based on furnished examples as well as their own experience, students create and critique a variety of integrated media systems demonstrating technical competence, aesthetic knowledge, analytic rigor and theoretical relevance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 530
AME	532	Media Synthesis	Focuses on creation of media of all kinds using computation. Using algorithms it is possible to create complex media that is difficult or impossible by traditional methods. Some techniques can capture the unpredictable evolutionary and emergent behavior found in nature. Investigates influential algorithmic methods including stochastic processes and Markov chains, Perlin noise, cellular automata, fractals, L-systems and genetic algorithms.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AME	535	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)
AME	544	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 444 or AME 544 or AME 598 (Media Installations)
AME	570	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 470 or AME 570 or AME 494 (Programming for Social and Interactive Media) or AME 598 (Programming for Social and Interactive Media)
AME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	590	Reading And Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AME	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	YGB	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	100	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	MA	Prerequisite(s): MAT 117 or higher with C or better or Mathematics Placement Test with a score of 50% or higher or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
AML	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	253	Intro to Math Tools & Modeling	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 100 or SOS 101 with C or better OR Visiting University Student
AML	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	406	Dir Rdg & Rsrch Life & Soc Sci	Collaborative, practice-oriented course where students produce individual or team-initiated research project reports on pertinent topics in the life and social sciences. Students select topics, design, identify and formulate effective research ideas, and then translate them into clear and effective research plans.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 100; MAT 342 (or MAT 343); 86 minimum hours OR Visiting University Student
AML	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: AML 253, or SOS 210(or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)
AML	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		

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AML	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
AML	520	Agent-Based Modeling	Introduces agent-based modeling to simulate social and social-ecological systems. Topics include design, analysis, and empirical grounding of agent-based models to a variety of application domains including collective action, diffusion processes, resource use, health, and complex societies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only AML, ESS or SOS 540
AML	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibria in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)
AML	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560
AML	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	610	Topic Appl Math Life & Soc Sci	Introductory course in applied mathematics for the life and social sciences, combined with the first semester of a two-semester course in mathematical biology. Provides a solid introduction to the modeling of biological and social processes as well as to some of the mathematical approaches involved in their analysis and simulation.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	612	Appl Math Life&Soc Sci Mod Sem	Presents and applies mathematical modeling principles and techniques for representing the structure and operation of complex life and social systems and processes. Helps students identify potential problems in the life and social sciences and the corresponding mathematical and statistical methods that can be used for their study.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AML	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
AMS	201	Intro to American Studies	Provides an intellectual foundation for the interdisciplinary study of American culture, history, and society. Introduces students to ideas, methods, tools, and theories in the vibrant field of American studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
AMS	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
AMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	326	Popular Culture	Topics in American popular culture, including theories of popular culture; the history and analysis of mass media, including television, film, and the music industry; and vernacular art and the folk tradition.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	330	American Lives	Examines American society through the study of autobiography and ethnography.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): minimum 30 hours
AMS	332	Studies in Race and Ethnicity	Topics relating to issues of race and ethnicity in American life. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	334	Class in America	Explores social class and inequality in the U.S. including history, culture, work, politics, globalization, and intersections of gender, race, ethnicity, and place.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): minimum sophomore standing
AMS	336	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
AMS	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
AMS	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AMS	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
AMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	412	Studies in Amer Politics & Law	Topics in American political and legal systems, including social movements in the United States and women and the law. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H	
AMS	417	Religious Trad/Amer Southwest	Examines the sacred traditions that have evolved within the North American Southwest context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420

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AMS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest)
AMS	429	Interdisciplinary Topics	Senior-level seminar that examines issues relevant to two or more American cultures' fields. Topics may include Southwestborder Hispanic folklore, Southwestern corridors, American art and the city, and the West of the imagination. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
AMS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
AMS	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or WST 469 or WST 494 (Trash, Freaks and SCUM) or JHR 598 (Trash, Freaks and SCUM) or MAS 598 (Trash, Freaks and SCUM)
AMS	490	Writing Certificate Portfolio	Preparing a portfolio demonstrating advanced writing skills. Limited to and required of students in the Writing Certificate Program.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		
AMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
AMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101 or 105 with C or better; AMS 301 with C or better
AMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
AMS	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AMS	502	Amer Studies: Theory & Method	Explores some of the major themes in American studies scholarship by considering American cultural formation and change over the last two centuries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): MA American Studies major
AMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		

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AMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AMS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	101	Intro to Aeronautic Mgmt Tech	Facilitates entry into aeronautical management technology programs. Emphasizes General Catalog; major and concentration requirements, registration, careers, and Polytechnic campus resources. Introduces various learning styles and strategies that assist students in becoming successful learners. Emphasizes time management techniques and academic integrity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		
AMT	105	Flight Operations & Safety I	Supervised private pilot operations, flight instruction, flight safety briefings and recurrent aviation subjects appropriate for private pilots. Flight instruction is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons and FAA Practical Exam(s) within the appropriate flight training syllabus and satisfactorily completing all academic requirements. Flight instruction costs are not included in university tuition and fees. Students following the single engine flight training track earn their Single Engine Private Pilot certificate. Students following the multiengine flight training track earn their Single Engine Private Pilot Certificate and their Multiengine Private Pilot certificate.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; approved Secondary Flight application; Pre- or corequisite(s): AMT 182 with C or better if completed; AMT 220 with C or better if completed
AMT	110	Flight Operations & Safety II	Concludes supervised private pilot operations and flight training and introduces students to supervised commercial pilot operations, flight training, flight safety briefings, and recurrent aviation subjects appropriate for private and commercial pilots. Flight instruction costs are not included in university tuition and fees.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 105
AMT	150	Flight Operation & Safety III	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110; Credit is allowed for only AMT 150 or AMT 151
AMT	151	Flight Op and Safety III.a	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 with C or better; Credit is allowed for only AMT 150 or AMT 151
AMT	170	Intro to Unmanned Aircraft Sys	Introduces the history of unmanned aircraft systems and current and future developments in civil and military operations. Specific blocks deal with elements that form an unmanned aircraft system: unmanned vehicles, communication, navigation, launch and recovery, control stations, payloads, and support equipment. Explores other current issues in unmanned aircraft operations: aviation regulatory system and integration, safety and human factors, ethical and legal issues, and the future unmanned aircraft systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	182	Private Pilot Ground School	Ground school preparation for Private Pilot Certificate. Aerodynamics, navigation, performance, and regulations.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		

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AMT	201	Air Traffic Control	Ground and air operations; weather services communications and routing; flight plans, IFR operations, departures and arrivals; and airport conditions and emergencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Applied Science (Aviation) BAS or Air Traffic Management BS or Aeronautical Management Technology (Air Traffic Management or Air Transportation Management or Professional Flight or Unmanned Aerial Systems) BS major
AMT	205	Flight Operations & Safety IV	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 150; Credit is allowed for only AMT 205 or AMT 206
AMT	206	Flight Ops and Safety IV.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 151 with C or better; Credit is allowed for only AMT 205 or AMT 206
AMT	210	Flight Operations and Safety V	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 205; Credit is allowed for only AMT 210 or AMT 211
AMT	211	Flight Ops and Safety V.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 200 with C or better; Credit is allowed for only AMT 210 or AMT 211
AMT	214	Commercial Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 1 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Air Traffic Management BS or Aeronautical Management Technology (Air Traffic Management) BS major; AMT 182 with C or better; AMT 220 with C or better OR Pre- or corequisite(s): AMT 205
AMT	220	Aviation Meteorology	Evaluation, analysis, and interpretation of atmospheric phenomena. Low- and high-altitude weather from the pilot's viewpoint.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	222	Instrument Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 2 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 OR other Aeronautical Management Technology major; AMT 182 with C or better; AMT 220 with C or better

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AMT	250	Flight Operations & Safety VI	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 210; Credit is allowed for only AMT 250 or AMT 251
AMT	251	Flight Ops and Safety VI.a	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 211 with C or better; Credit is allowed for only AMT 250 or AMT 251
AMT	270	Unmanned Aircraft	Introduces elements comprising the unmanned aircraft system (UAS). Includes review of UAS, Unmanned Aerial Vehicle (UAV); system development and certification, selection and design, aerodynamics and airframe configurations, characteristics of vehicle types, design standards and regulatory aspects, airframe design, payload types, and control and stability. Students apply concepts acquired in classroom sessions and construct various unmanned aircraft, train to operate using existing simulators, and conduct flight-testing. The final course project is the design, development and construction of a group 1 unmanned aircraft, serving as the core unmanned vehicle used in subsequent UAS courses. Incorporates UAS data collection and analysis throughout the course. Course concepts enable UAS student pilots to become knowledgeable of aerodynamic aspects of UAV to ensure safety of flight and improved maneuverability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 170 with C or better
AMT	280	Aero Structures/Matl & Systems	Basic aerodynamics, incompressible/compressible airflow, wind tunnel testing, wing theory; analysis of aircraft structures; properties and applications of materials, and aircraft systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Air Traffic Management BS or Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111; PHY 113
AMT	285	Flight Instr Ground School	Ground school in preparation for the FAA Flight Instructor Certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 210
AMT	286	Multiengine Pilot Ground Schl	Ground school preparation for the FAA Multiengine Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 205
AMT	287	Aircraft Powerplants	Theory and performance analysis of gas turbine and reciprocating aircraft engines. Engine accessories, systems, and environmental control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Air Traffic Management BS or Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111; PHY 113
AMT	292	Flight Instr Instrument Gr Sch	Ground school preparation for the FAA Instrument Flight Instructor Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 210 with C or better; AMT 222 with C or better; AMT 285 with C or better
AMT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		

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AMT	305	Flight Operations & Safety VII	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 250; Credit is allowed for only AMT 305 or AMT 306
AMT	306	Flight Ops and Safety VII.a	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 251 with C or better; Credit is allowed for only AMT 305 or AMT 306
AMT	308	Air Transportation	Studies the historical and international development of air transportation and its social, political, and economic impact upon global interrelationships.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3	G	Pre-requisite: Minimum 50 hours
AMT	310	Flight Operations Safety VIII	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 305; Pre- or corequisite(s): AMT 292 with C or better if completed; Credit is allowed for only AMT 310 or AMT 311
AMT	311	Flight Ops and Safety VIII.a	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 286 with C or better; AMT 306 with C or better; Pre- or corequisite(s): AMT 292 with C or better if completed; Credit is allowed for only AMT 310 or AMT 311
AMT	350	Aircraft Design/Logistics Mgmt	Fundamental aircraft design principles, including performance factors associated with mission profiles and the identification of basic logistical support requirements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Applied Science (Aviation) BAS or Air Traffic Mgmt BS or Aeronautical Mgmt Technology BS major; Pre- or corequisite(s): PHY 111; PHY 113
AMT	360	Aircraft Dispatch Ground	Aeronautical knowledge areas required for Aircraft Dispatch certification, as well as preparation for the Aircraft Dispatch knowledge examination. Regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology, and flight operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 214; AMT 220; AMT 222; Credit is allowed for only AMT 360 or AMT 394 (Airline Dispatcher Ground School)

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AMT	370	Unmanned Aircraft Systems	Students build upon gained knowledge, skills and experience by exploring unmanned aircraft avionics, autopilot systems, first person video (FPV), on-screen displays (OSD), communication systems, command and control (C2), ground control stations (GCS), flight software, and UAV launch and recovery systems. Students continue flight training and gain proficiency in unmanned aircraft operation using simulators and hands-on flight-testing. Students demonstrate their abilities to upgrade and modify their previously constructed unmanned aircraft in order to operate and conduct actual flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 270 with C or better
AMT	382	Air Navigation	Theory and application of modern advanced navigation and flight instrument systems. Introduces crew resource management in multiplace cockpits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 210
AMT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	396	Aviation Professional	Career focus for management and flight students, including internships, writing, interviews, and employment search in aviation industry.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): BAS or BS aviation program major; junior standing
AMT	408	National Aviation Policy	Examines aviation and airspace policies and policy process, including agencies involved in formulation, implementation, and evaluation of aviation policy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 308 with C or better if completed
AMT	410	Aviation Safety & Human Factor	Aviation accident prevention, human factors, life support, fire prevention, accident investigation, and crash survivability. Development and analysis of aviation safety programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 308 with C or better if completed
AMT	442	Aviation Law and Regulations	Aviation within context of U.S. Common Law system. Public law, administrative rule making, sovereignty, enforcement, and case law analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 308 with C or better if completed
AMT	444	Airport Management & Planning	Orientation to administration and management of modern public airports, including overview of planning, funding, and development of airport facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 308 with C or better if completed
AMT	456	Organized Labor in Aviation	Explores topics of labor relations, unions, federations, collective bargaining, grievances and labor legislation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 308 with C or better if completed
AMT	460	Aircraft Dispatch Capstone	Capstone for aircraft dispatch whereby students are engaged in practical applications of regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology and flight operations. Uses various scenarios in which students can employ the strategies and procedures necessary for safe flight.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 360
AMT	470	UAS Payload, Sensors, Control	Builds on previously gained knowledge and experience. Student pilots utilize long-range communication and data links, UAS sensors, geospatial data collection, and still-imaging mosaicking. Students continue flight training using existing simulators and flight-tests during the course. Students apply concepts acquired during classroom sessions and construct a ground control station, modify and upgrade existing unmanned aircraft with payloads/sensors, train to operate sensors using existing simulators, and conduct flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 370 with C or better
AMT	482	Airline Instrument Procedures	Advanced instrument flight using airline instrument procedures and airline crew and cockpit resource management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 382 with C or better
AMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
AMT	486	Regional Jet Aircraft Systems	Regional jet airline aircraft systems and flight procedures. Includes theoretical education for regional jet commercial passenger aircraft.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 382 with C or better
AMT	488	Regional Jet Aircraft Sys II	Regional jet systems, with emphasis on air navigation systems, including Flight Management System (FMS), Selective Calling (SELCAL), and flight profiles.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite(s): Aeronautical Management Technology (Professional Flight) student; AMT 382 with C or better
AMT	489	Airline Administration	Administrative organizations, economics of airline administration, operational structure, and relationship with federal government agencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): minimum junior standing; Pre- or corequisite(s): AMT 308 with C or better if completed

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AMT	490	Regional Jet Operatns Capstone	Regional jet aircraft operations and flight procedures. Includes theoretical education for RJ aircraft, FTD and full-motion simulator time.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 305; AMT 486 with C or better
AMT	491	Aviation Management Capstone	Integrated group project with industry partner to address current problems in either air carrier or airport management focus area.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 489 with C or better if completed
AMT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6		Prerequisite(s): Barrett Honors student
AMT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6	L	Prerequisite(s): Barrett Honors student
AMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Pre-requisite: Minimum 2.25 GPA
AMT	495	UAS Operations	Capstone course applies student pilots' knowledge and skills gained in previous UAS courses to safely deploy a UAS in response to real-world situation or research. Students collaborate with other university departments, state or federal agencies, and other organizations and conduct actual or simulated missions in geospatial data collection, search and rescue, and near-space operations. Course blocks include flight planning and preparation, aircraft preflight and maintenance, launch and recovery operations, payload operations, normal and emergency procedures, and mission planning and execution. Students continue flight training using existing simulators and flight-tests. Students use real-world situations which require deployment of equipment and systems developed during previous course. Places specific emphasis on aircraft and payload selection based upon proposed mission analysis. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 470
AMT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-3		
AMT	522	Aviation Law	Examines the U.S. legal system with a focus on the aviation perspective, administrative agencies, FAA enforcement, and case law.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	523	Intermodal Transportation Mgmt	Systems theory applied to intermodal transportation networks. Surveys air and ground transportation infrastructure, institutional frameworks, and intermediaries promoting connections between modes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Senior in Fulton Schools of Engineering with a University Cum GPA 3.0 or greater
AMT	525	Airport Planning and Design	Completion of various phases of airport master planning process. Provides guidance for logical and timely development of airports. Project work groups assigned.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	526	Aviation Labor Relations	Investigates labor-management relations in the aviation industry, including laws, unionism, collective bargaining, public sector relationships, grievance procedures, and conflict.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	527	Airline Management Strategies	Since deregulation, airlines have undergone profound changes through mergers, consolidation, and acquisition. In-depth look at airline management strategies for the 21st century.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	533	Aviation Systems & Psychology	Provides an overview of various aviation learning/training situations and how to develop and evaluate instruction appropriate for the situation and the learner. Focuses on determining the most effective instructional strategy for the situation and how to ensure learner preparedness and mastery of the concepts and skills. Considers topics: information processing, memory, instructional design methodologies, learning strategies, expert/novice differences, individual learner differences including generational differences, evaluation of instruction, transfer of knowledge and skills to unique settings. Discussions focus on research findings in these areas and practical application and implementation to improve learning and performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AMT	534	Airline Pricing	Focuses on the fundamentals of airline economics and the volatility of industry performance at the operating level. Topics include the structure of the airline industry and the various historical and current operational strategies; demand, traffic, price and yield; operating revenues and operating costs. The airline industry is affected by various economic, environmental, political and regulatory conditions. Reviews the implications of these conditions on airline pricing, capacity, fleet selection and scheduling. Analyzes current and predicted future conditions to develop potential strategies for successful revenue management within the industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite: degree- or nondegree-seeking graduate student. Credit is allowed for only AMT 534 or AMT 598 (Airline Pricing and Yield Management)
AMT	541	Aviation Physiology	Surveys human physiology and human performance principles related to modern aircraft and aircraft systems operating in multiple environments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	546	Crew Res Mgmt/Line-Orient Fit	Evaluates in-depth, multicrew coordination issues for commercial aviation pilots. Stresses importance of critical thinking, decision making, integrated resource utilization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	565	Safety	Evaluates human error in aerospace systems. Discusses different theories of error and taxonomies as well as safety management systems to help identify hazards and risks and then help mitigate and/or eliminate them. Extensively uses case studies to highlight human failures as well as demonstrate organizational changes that resulted in safe and successful operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	570	Unmanned Aerial Systems	Examines the system design, operations and employment of unmanned aerial systems (UAS), beginning with an overview of the system and human factors and specific issues involved with UAS design and operations. Communication, remote operations, operator display interface, and situational awareness and teamwork required for successful employment. Evaluates accident data to understand technology and human error concerns.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student

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AMT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
ANB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	601	Strategies in Animal Behavior	Using hands-on experiences, teaches key concepts underlying the control and function of animal behaviors and contemporary methods for measuring, analyzing, and reporting animal behaviors. Combines introductory classroom lectures on concepts and methods with direct application in observations and experiments on animal behavior in the field and the lab. Topics include communication, mating behavior and systems, parental care, kin selection, cooperation and competition, migration and dispersal, foraging, and anti-predator strategies.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Pre-requisites: Animal Behavior PhD student
ANB	602	Current Issues in Behavior	Student-led seminar course centers on discussions of contemporary literature in the field of animal behavior. Takes a student-driven approach, with course participants selecting a target theme for the semester, selecting individual papers to discuss each week, and leading discussions about relevant merits and shortcomings of each article. Additional topics may include: conceptual frameworks and results from the dissertation projects of participating students, career options and strategies in the behavioral sciences, responsible research conduct in the field, and tactics in manuscript publication and grantsmanship.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisites: Animal Behavior PhD student
ANB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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ANB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APA	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisite: Freshman status
APA	200	Intro/Asian Pacif Amer Studies	Examines historical and contemporary issues facing Asian Americans and Pacific Islanders in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	
APA	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
APA	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
APA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
APA	310	Asian Pacific Amer Arts&Cultur	In-depth exploration of Asian Pacific American cultural expression in art, literature, film, theatre, dance, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	315	Asian Pacific Amer Literature	In-depth exploration of the literary history, critical reception, and major theories in Asian Pacific American poetry, fiction, and prose.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	330	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
APA	340	Asian Pacific Americans/Media	Advanced study of the social construction of Asian Pacific American media images and resistance to those images in various historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
APA	347	Immigration Education & Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
APA	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
APA	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353

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APA	355	Asian American Psychology	Reviews the current research and literature about the psychological experiences of Asian Americans, with the appreciation for the historical, sociopolitical and cultural contexts that invariably shape the behavior and well-being of individuals in this diverse population group. Using psychological theory and research as a guiding framework, explores family relationships, identity development, sexuality, model minority stereotypes, racism and discrimination, media images, dating/marriage, race relations, mental health, and other issues affecting Asian American lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 355 or APA 360 (Asian Pacific American Psychology)
APA	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
APA	360	Asian Pacific Amer Experience	Advanced study of the historical and contemporary experiences of Asian Pacific American racial/ethnic groups in the United States.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
APA	450	Asian Pacific Amer Contemp Iss	Advanced study of the issues shaping Asian Pacific American communities, including immigration, politics, education, health, family, gender, youth, interracial relations, and other contemporary topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or minimum 36 hours OR Visiting University Student
APA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
APA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
APA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student
APA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: APA 200 or APA 210 or minimum 45 hours
APA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	
APA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
APH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	212	Culture of Place	Explores contemporary conditions in the built environment as they are shaped by cultural phenomena.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
APH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	300	World Architect I/West Culture	Historical and contemporary built environments of Western civilizations: Mediterranean, Europe, and the Americas as manifestations of cultural history and responses to environmental determinants.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2-3	HU & H & G	Prerequisite(s): May not be Pre-Architectural Studies or Architectural Studies BSD student OR Visiting University Student
APH	313	History of Architecture I	Intensive study of history of architecture from earliest traces to 1300. Examines cultures from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): Architectural Studies BSD major; ALA 100 or ALA 102; passed degree milestone review or non-majors; minimum junior standing OR Visiting University Student
APH	314	History of Architecture II	Intensive introduction to history of architecture from roughly 1300 to present day. Examines cultures from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): APH 313 with C or better
APH	336	20th-Century Architecture I	Architecture in Europe and America from the foundations of the modern movement to the culmination of the international style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisites: Minimum Junior standing or Digital Culture: Design major

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APH	337	20th-Century Architecture II	Developments in architecture since the international style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisite: APH 336
APH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	405	Contemporary Architecture	Addresses issues of global architecture and urbanism in the late 20th and early 21st centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): APH 313 and APH 314, or graduate standing OR Visiting University Student
APH	414	Great Cities	Historical survey of great cities from antiquity to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & H	Prerequisite(s): minimum 3.00 GPA; minimum 60 hours; Credit is allowed for only APH 414 or MUD 598 (Great Cities) OR Visiting University Student
APH	421	First Concepts	Examines the major writings and concepts that surround the history of architecture. Focuses on (but not exclusively) work in the 20th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L or HU	Prerequisite(s): Architectural Studies or Environmental Design majors; APH 313 with C or better; APH 314 with C or better
APH	441	Ancient Arch	Architecture of the ancient Mediterranean world with selective emphasis on major historical complexes and monumental sites.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
APH	461	Charles and Ray Eames	Survey of American designers Charles and Ray Eames, their innovation design thinking and masterworks.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): minimum 3.00 GPA; minimum 60 hours OR degree- or nondegree-seeking graduate student; Credit is allowed for only APH 461 or APH 494 (Charles + Ray Eames) OR Visiting University Student
APH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
APH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
APH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
APH	505	Foundation Theory Seminar	Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture student; Co-requisites: ADE 522; ATE 556
APH	509	Foundation Seminar	Historical, technical, theoretical, environmental, and professional issues in architecture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture; Co-requisite: ADE 510
APH	515	Current Issues and Topics	Critical examination of current architectural issues, topics, and discourse.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: APH 505 with a C or better; Co-requisite: ADE 621
APH	581	Contemporary Urban Design	Explores contemporary city and urban design issues related to contemporary cities.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
APH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
APH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
APH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
APH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	518	World Englishes	Examines the implications of the global spread of English, including its diverse forms and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 518 or APL 591 (World Englishes) or APL 691 (World Englishes)

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APL	555	Disciplinary Discourses	Professional and disciplinary issues in linguistics and applied linguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
APL	558	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510
APL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student
APL	588	Spanish Language Acquisition	Examines Spanish language acquisition in children and adults in the context of monolingual and bilingual language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only SHS 588 or APL 588
APL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student
APL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	601	Intro to Applied Linguistics	Overview of the field of applied linguistics. Applies linguistic knowledge to the resolution of language-related issues facing multilingual societies (e.g., second language acquisition and ultimate attainment, literacy, language assessment, bilingualism, heritage and indigenous languages, language attitudes, language planning and policy, language and politics, world Englishes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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APL	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	501	Differential Equations I	Linear and nonlinear ordinary differential equations. Existence and uniqueness of solutions, limit sets, stability, Lyapunov functions, linear systems with constant coefficients. Geometry of behavior in two and three dimensions, including Poincare-Bendixon theorem, Lorenz equations, linearization, sensitive dependence on initial conditions, bifurcations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	502	Differential Equations II	Partial differential equations, including classification, method of characteristics, separation of variables, boundary value and initial value problems, Green's functions, maximum principle, distributions, and weak solutions. Students must have already taken or be concurrently enrolled in Differential Equations I.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	503	Applied Analysis	Convergence sequences and series of functions; metric space topology, compactness, completeness and the Ascoli-Arzelà Theorem; Contraction Mapping Principle, Implicit Function Theorem; intro to Lebesgue integration leading to L^p -spaces; properties of Hilbert spaces, Fourier transform. Students should have knowledge of linear algebra, multivariable calculus, and analysis at the undergraduate level.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	504	App. Prob. and Stochastic Proc	Markov chains, Martingales, probability measures, SDE, Brownian motion, Monte Carlo methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	505	Applied Linear Algebra	Fundamentals of linear algebra and numerical linear algebra, including decompositions (LU, QR, SVD), Eigen values, spectral theory, least squares problems. Programming with MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	506	Computational Methods	Covers interpolation, solution of nonlinear equations and systems, numerical differentiation, numerical integration, numerical solution of ordinary and partial differential equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	520	Adv Numerical Linear Algebra	Extends topics of APM 505. Introduces essential iterative methods, Gauss-Seidel, conjugate gradients. Methods for SVD, total least squares and root-finding applications in image analysis. Students should have basic knowledge of numerical linear algebra and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	522	Numerical Methods for Partial	Numerical methods for parabolic, elliptic, and hyperbolic partial differential equations, including finite difference/volume, finite element, and spectral methods. Mathematical concepts of stability, consistency, and convergence. Applications to scientific, biomedical, and industrial problems. Students should have a basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	523	Optimization	Building on a fundamental undergraduate background in linear algebra and calculus, covers continuous optimization, constrained/unconstrained and linear/nonlinear, as well as selected topics in discrete optimization. Some programming experience is needed for course projects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	524	Spectral Methods	Extends approximation theory to global methods, including Fourier and orthogonal polynomial expansions. Applications to imaging and hyperbolic, parabolic, and elliptic partial differential equations. Students should have previous graduate courses in ordinary and partial differential equations, basic programming skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	525	High-Performance Computing	Supercomputer architectures, parallel programming environments, languages, libraries, and algorithms for high-performance numerical simulations. Instructor/Department approval is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only APM 525, MAE 494 (High-Performance Computing) or MAE 598 (High-Performance Computing)
APM	526	Adv Numerical Methods for PDEs	Partial content will vary from semester to semester, but may include hyperbolic conservation laws, finite element methods, multigrid methods, and parallel algorithms for partial differential equations. Applications to scientific, biomedical, and industrial problems. Students should have basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	530	Mathematical Cell Physiology.	Mathematical modeling of dynamical aspects of cell physiology. Diffusion, membrane transport, intracellular calcium channel kinetics, calcium oscillations and waves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	531	Mathematical Neuroscience I	Mathematical modeling of electrochemical processes in nerve cells. Dendritic modeling, dendritic spines and synaptic plasticity, bifurcation analysis of excitable membrane models, deterministic and stochastic methods for threshold dynamics and bursting, relaxation oscillations. Students should have had a previous graduate-level PDE course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	533	Mathematical Population Biolog	Selectively covers population biology models in the forms of systems of difference equations or ordinary differential equations. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous graduate-level course in ODE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	534	Mathematical Population Bio 2	Selectively covers population biology models in the form of partial differential equations and systems. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous basic graduate-level course in ODE and PDE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	535	Math Models in Medicine	Mathematical models for the etiology, epidemiology, pathogenesis, morphology and treatment of disease. Covers dynamical models of cancer and viral infections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	541	Stochastic Modeling in Biology	Markov processes, random walks, martingales, branching processes, logistic growth model, Wright-Fisher model, Kingman's coalescent, bound and site percolations, contact processes, voter models. Students should have previously taken course work in probability and/or stochastic processes (or have a recommendation from their advisor). Recommendation from advisor is typically for students in biology or physics that have not taken statistics courses but have a good background in mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	560	Applied Dynamical Systems	Bifurcations, normal forms, pattern formations, mixing, Lagrangian chaos, and applications to fluid dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	570	Applied Linear Operators	Bounded linear and compact operators on Hilbert spaces. Linear integral equations, Fredholm and Hilbert-Schmidt theory, and approximate methods. Distributions. Completion of a course in Applied Analysis is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	575	Perturbation Mthds Appl Math	Regular and singular perturbation methods for ordinary and partial differential equations, Boundary layer theory, matched asymptotic expansions, multiple-scale, homogenization, and WKB methods. Application to nonlinear oscillations, bifurcation and stability problems. Completion of a course in Differential Equations II or Partial Differential Equations in Engineering is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: APM 502 or MAE 502; Credit is allowed for only APM 575 or MAE 505
APM	576	Theory of PDE I	Existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	577	Theory of PDE II	Continuation of existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): APM 576
APM	581	Geometry&Control of Dyn Sys 1	Manifolds, tangent and cotangent bundle, Lie theory, integrability and controllability, and feedback control. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	582	Geometry&Control of Dyn Sys 2	Variational principles, Euler-Lagrange equations, Hamiltonian systems, optimal control, connections and curvature. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP4	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
APM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARA	101	ASU: The Art Experience	Introduces the culture, challenges and opportunities of the School of Art. Addresses essentials for academic and personal success within the university.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	1		Credit is allowed for only ARA 101, 194 (ASU Art Experience) or HDA 194 (ASU Herberger Inst Experience)
ARA	110	Sculpture Safety	Introduces safety and environmental health in the sculpture studios. Pre- or corequisite for all sculpture classes.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	1		
ARA	195	Art in My World	Basic concepts and fundamental questions that provide insights into art making and that affect one's understanding and appreciation of art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARA	202	Understanding Photographs	Slide lecture course in understanding photography as a fine art form.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARA	240	Encounters with Art	Provides an open environment for dialogue and discovery of what it means to be a successful artist, and allows students to explore their own academic and career goals. Exposes students to new ideas and people, and familiarizes them with the School of Art and ASU resources designed specifically for them. Includes an intense focus on professional practices in the fine arts and provides the tools to help students succeed personally and professionally. An acknowledgment of ongoing rigorous studio practice plays a fundamental role in the course, and students expand their abilities to think critically and to communicate articulately about their own work and the work of others through in- and out-of-class projects, discussions and critiques that encourage consideration of their own work in the context of current opportunities and directions in the visual arts. In addition, students have the opportunity to engage with and learn from industry professionals.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ARA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	309	Photography Now	Explores contemporary practice through lectures, readings, exhibition visits, screenings and discussions. Explores work created within the past thirty years up to the present. Students act as a collective "ear to the ground" for the medium, engaging in first-hand experiences and research and being responsible to share those experiences with the class as active agents of discovery. Requires reading current periodicals, attending and discussing photographic lectures and exhibitions both in-class and beyond within the local community.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	311	Art Appreciation and Human Dev	Foundations of art for children and young adults. Emphasizes learning, development, and understanding art in historical and cultural contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): non-ART student; ENG 101; ENG 102; minimum junior standing
ARA	330	Issues in Intermedia	Critical survey of recent theory and practice in "intermedia" art. Created specifically to provide a common historical and theoretical framework for students majoring in the intermedia area, as well as to anyone seeking to broaden his or her understanding of non-traditional media, performance, installation, computer art, video, social practice, Webart and interactivity and their relationship to contemporary society and discourse.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 216 or minimum 45 hours; Credit is allowed for only ARA 330 or ARA 494 (Issues in Intermedia) OR Visiting University Student

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ARA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	396	Pro Practices for Design&Arts	Prepares young artists, designers and individuals in other creative fields to successfully enter the professional world of art and culture beyond the support system of the university. Through examining contemporary artists' models of practice and creative entrepreneurship; developing real life materials to promote their practice; engaging with guest artists, designers and other creative professionals; exploring best practices for arts-based businesses; and the array of continuing opportunities, student artists learn how they can shape their lives to sustain their artistic practice once they graduate. Best suited for students who are prepared to seriously contemplate the continuation of their specific practice beyond graduation. Students should enter this course with a collection of work samples that demonstrate their experience in their chosen discipline.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 56 hours; Credit is allowed for only ARA 396 or ARA 394 (Professional Practices for Artist) OR Visiting University Student
ARA	460	Gallery Exhibitions	Practical experience in all phases of department gallery operations and preparation of gallery publications.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ARA 460 or 560
ARA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARA	489	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person and discussing them, and writing and revising their own pieces of criticism.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	
ARA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		
ARA	560	Gallery Exhibitions	Provides practical experience in all phases of art gallery operations. Students learn professional art gallery practices through hands-on experience in the School of Art Student Galleries including Harry Wood, Step, and Gallery 100. Class members assist BFA and MFA candidate students in many phases of exhibition preparation and execution as well as assist with the curation and design of group exhibitions.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARA 460, 560 or 598 (Gallery Exhibitions)
ARA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	589	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person, analyzing and discussing them, and writing and revising their own pieces of criticism.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or non-degree seeking). Credit is allowed for only ARA 489 or ARA 589 or ARA 598 (Writing Art & Design Criticism)
ARA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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ARB	101	Elementary Arabic I	For beginners who don't have any prior knowledge of Arabic. Introduces the basic skills of speaking, listening, reading and writing of Modern Standard Arabic (MSA) for the purpose of communicative goals. Arabic cultural knowledge is incorporated as it is an important element in real-life communication.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only ARB 101 or MSA 101
ARB	102	Elementary Arabic II	Reading, writing, speaking, and understanding basic Arabic.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 101 or MSA 101 with C or better; Credit is allowed for only ARB 102 or MSA 102 OR Visiting University Student
ARB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	201	Intermediate Arabic I	Starts with a review of the basics learned in previous coursework. Expands vocabulary and grammar structures. Addresses all four communication skills: reading, writing, listening and speaking in Modern Standard Arabic. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 102 or MSA 102 with C or better; Credit is allowed for only ARB 201 or MSA 201 OR Visiting University Student
ARB	202	Intermediate Arabic II	Expands vocabulary and grammar structures and continues to develop communicative skills in Modern Standard Arabic. Enables students to attain an advanced level of proficiency in all Arabic language skills: reading, writing, listening and speaking. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 201 or MSA 201 with C or better; Credit is allowed for only ARB 202 or MSA 202 OR Visiting University Student
ARB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	311	Advanced Arabic Skills I	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 with C or better OR Visiting University Student
ARB	315	Advanced Arabic Heritage	Provides an advanced ability to read, understand, write and communicate in Arabic. Covers important topics such as advanced descriptions of one's country, city, university, home and family. Also concentrates on studying advanced questions and answers in the present, past and future tenses. Uses the communicative approach in adopting different pedagogical approaches centered on the communicative method, such as group practice, role play and situational dialogues. Introduces and explains detailed and advanced knowledge of Arabic grammar, structures of Arabic sentences; and the deep connotations of important Arabic vocabulary. Emphasizes building up more vocabulary and grammatical knowledge for communication purposes, introducing cultural, intellectual, business and political contents and terminology in Arabic; and expressing in advanced Arabic one's daily activities, past life and futuristic plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARB 101 or ARB 102 or ARB 201 or ARB 202 or ARB 315 or ARB 394 (Advanced Arabic for Heritage Speakers I) or ARB 394 (Advanced Arabic for Heritage Speakers II) OR Visiting University Student
ARB	321	Arabic Conversation I	Emphasizes spoken Arabic and conversation skills. Simultaneously develops communicative skills, vocabulary, and cultural awareness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
ARB	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student
ARB	335	Arabic Culture and Islam	Develops awareness of Arabic culture and Islam. Covers a variety of cultural topics, including family, status of women, food, music, and Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	
ARB	336	Introduction to the Qur'an	Introduces the Qur'an and examines the historical, contextual, religious and interpretive dimensions wherein the Qur'an developed. Deals with the structure of the Qur'an, the different sections, suras (Qur'anic chapters), and some of the verses. Also includes an introduction to the idea of revelation, its history, the content and some of the different themes of the Qur'an, and discusses aspects of the Qur'an as a source of law. Taught in English; requires no knowledge of Arabic or Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 336 or ARB 394 (Introduction to the Qur'an) OR Visiting University Student

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ARB	337	Hadith and Prophetic Tradition	Considers the Hadith as a literary text and as the prophetic tradition in Islam. Focuses on the development of the Hadith as a vast subject in Arabic literature, its collection methodology, Hadith science, and its contents. Gives special attention to the relationship of the Hadith as the second source, after the Qur'an, of Islamic knowledge, Islamic theology, Islamic philosophy and Islamic law. Explores the various ways and approaches in which Muslims employ the Hadith along with the Qur'an in their search for meaning, identity and knowledge. All readings are in English; requires no prior knowledge of Arabic language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 337 or ARB 394 (Arabic Hadith and Prophetic Tradition) OR Visiting University Student
ARB	340	Arabic Translation	Covers the fundamentals of English-Arabic and Arabic-English translation including basic techniques of translation through exploring the essential theories and concepts adopted in the process of translation. Also addresses the areas of difficulty aroused during the process of translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 311 with C or better; ARB 321 with C or better; Credit is allowed for only ARB 340 or ARB 394 (Introduction to Arabic Translation)
ARB	341	Quran Text and Women	Addresses Muslim women scholars' argument that it is not the religion but the patriarchal interpretation of the Quran that have kept Muslim women oppressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	
ARB	351	Classical Arabic Literature	Provides a survey in classical Arabic literature. Focuses on the development of classical Arabic poetry and prose since their interceptions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
ARB	352	Modern Arabic Lit/Trans	Surveys the major trends, themes and genres of modern Arabic literature in translation. Provides a foundational knowledge of modern literature in the Arabic language. Focuses on continuity and change, cultural diversity and multiplicity in the Middle East, and the social, religious and historical aspects of modern Arab culture. No knowledge of Arabic language is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; Credit is allowed for only ARB 352 or ARB 394 (Introduction to Modern Arabic Literature)
ARB	360	Islamic Philosophical Lit	Covers the most important Muslim philosophers and their contributions to philosophy. Concentrates on presenting and analyzing the main Islamic theories in philosophy, such as the different theories of creation, the role of reason and rationalism versus traditionalism. In addition, provides detailed information about the Islamic philosophical theories of language and meaning, and how these theories influenced the development of many distinct philosophical and literary works in the Arab-Islamic world. Also portrays Arabic language as a philosopher which provides philosophical definitions and analyses of many important concepts. Some of the famous philosophers which this course covers are the following: Al-Farabi, Ibn Sina, Al-Ghazali and Ibn Rushd. Those philosophers and their theories are still highly influential today in the Arab-Islamic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 360 or ARB 394 (Islamic Philosophy)
ARB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	411	Advanced Arabic Skills II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ARB 311 with C or better
ARB	421	Arabic Conversation II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
ARB	422	Advanced Arabic Media	Advanced language course designed to improve students' reading, writing, listening, speaking and debating skills. Exposes students to Arabic language used in the media. Incorporates news items from print and electronic media sources, including print and online news articles, television news and YouTube videos, among other materials. The purpose of using many sources is to enable the students to have an advanced experience reading diverse media materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ARB 422 or ARB 494 (Advanced Arabic Media [in Arabic]) or ARB 494 (Advanced Arabic Media)
ARB	427	Arabic Prose	Surveys Arabic prose treasures such as Maqama, Hikaya, Khabar, Risala and Drama. Pays particular attention to the collection of folklore tales known as The Arabian Nights (The Thousand and One Nights), using them as one of the most fascinating "world" texts, loaded with fairy tales, fables, romances, farces, legends and folk stories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 or 315 with C or better; Credit is allowed for only ARB 427 or ARB 494 (Modern Arabic Prose)
ARB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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ARB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ARB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
ARB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ARB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	250	Teaching Inquiry in Art	Issues in teaching and learning through directed, guided, and independent inquiry about artworks and through art making.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102; 6 hours (2 classes) from ART 111, 112, 113, or 115 with C or better OR Visiting University Student
ARE	301	Studio Art & Human Development	Study of human development in studio art from early childhood to adult years.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARE	370	Teaching Visual Culture	Explores issues and applications of everyday aesthetics that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) with C or better: BA or BFA Art major: ARE 250 OR BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor: ARS 101 or ARS 102; ART 110; ART 112 (or ART 113, 115 or 116) OR Visiting University Student
ARE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	446	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARE 446 or ARE 494 (Multicultural Issues in Art Education) or ARE 546 or ARE 598 (Multicultural Art Education) OR Visiting University Student
ARE	482	Teaching Art Processes	Art traditions of the 20th century as a basis for studio and art history instruction. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Fine Arts Art student
ARE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARE	486	Art Education:Strategies/Appls	Implementation and evaluation of art instruction for K-12 population. Includes teaching of Saturday classes in the Children's Art Workshop. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ARE 482 with C or better OR Visiting University Student
ARE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student
ARE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	496	Methods/Assess/Learning in Art	Individual or group research on the assessment of art learning incorporating theory and practice. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ARE 250 with B- or better
ARE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 90 hours
ARE	510	Visual Culture Research	Research on instruction of everyday aesthetics and related issues that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARE	520	Issues/Teaching Inquiry in Art	Issues in teaching and learning focused both on inquiry about artworks and on inquiry through art making.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	525	Research on Art Instruction	Research methods and assessment of learning in art. Pilot studies on the effects of instruction on learning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	530	Issues in Teaching Studio Art	Critical examination of issues concerning teaching multicultural art to different populations of students. Historical and philosophical foundations reviewed. Recommended to be taken before ARE 535.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	535	Research/Teaching Studio Art	Review of empirical and historical research methods, learning theory, and assessment of learning in studio art, including developmental studies and their limitations. Pilot studies on the effects of instruction upon learning. Recommended to be taken after ARE 530.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	540	Teaching Art/Cultural Contexts	Relationship of multicultural perspectives to teaching/learning art criticism, aesthetics, studio art, and art history.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	546	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores and analyzes international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only ARE 446, 494 (Multicultural Issues in Art Education), 546 or 598 (Multicultural Art Education)
ARE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARP	451	Architecture Field Studies	Organized field study of architecture in specified national and international locations. Credit/no credit. May be repeated for credit with director approval.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6		
ARP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): ADE 322 with C or better; Corequisite(s): ADE 421
ARP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Master of Architecture student; ADE 522 with a C or better
ARP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
ARS	100	Introduction to Art	Provides an introduction to the understanding and enjoyment of art through the study of painting, sculpture, design, photography, and the decorative arts. Students gain an awareness of meaning, functions, and significance of art, while learning an art-related vocabulary and a set of analytical tools for discussing and understanding art from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	101	Art-Prehistory thru Middle Age	History of Western art from the Paleolithic period through the Middle Ages.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	102	Art Renaissance to Modernism	History of Western art from the Renaissance to 20th-century modernism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	201	Art of Asia	History of the art of the Asian cultures, with emphasis on China, Japan, and India. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	202	Art of Africa/Oceania/Americas	History of art of Africa, Oceania, and the New World. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	250	History of Photography	History of photography from the 19th century to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		

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ARS	300	Introduction to Art	Parallels ARS 100 course content but requires a higher level of accomplishment and comprehension. Introduces visual culture, the purpose of art, and the relationship between art and visual culture. Students learn how visual culture pervades our everyday lives and how understanding visual literacy can help us participate more fully in the world around us.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; minimum 2.00 GPA; minimum 55 hours; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	310	The Renaissance in Tuscany	Course taught in Florence, Italy. History of arts in Tuscany with focus on city of Florence from 14th through 16th centuries. Completion of ARS 101 and 102 suggested.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARS	330	The Portrait	Examines the history and production of portraits in contexts of social hierarchies, historical events, gender, politics, class, morality and aesthetics with a focus on the 15th to the 21st centuries in painting, sculpture and photography.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): one 100-level course in APH, ARS, ASB, ENG, FMS, HST, MHL, MUS or SLC with B- or better; Credit is allowed for only ARS 330 or ARS 394 (Genre: Portraits) OR Visiting University Student
ARS	340	Art in America	American art from colonial times through the Second World War. Not available to students who have completed ARS 542.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major: ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration: ARS 101 with C or better; Credit is allowed for only ARS 340 or ARS 542
ARS	345	Art and Television	Critical introduction to the interrelation of technology and visual art using the tools of art history and media/cultural studies. Students read theorists of the relation between visual art and the mass media, and use them to analyze early presentations of visual art and art history on television of the 1960s and 1970s. Examines the contemporaneous and parallel development of video art—an artistic medium appropriated from television technology—through the study of key video artworks.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 earned hours
ARS	350	Museums: Meaning and Function	Exposes the broad scope of what museums do by exploring their history and the critical issues they face today. Acquaints students with the historical and contemporary function of museums and the concepts they currently engage with, such as authorship, authenticity, identity, education, interpretation, storytelling, technology, ethics, cultural heritage, public engagement and diversity. Enhances reading materials with talks by museum professionals, films and discussion boards.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 350 or ARS 394 (Introduction to Museums) OR Visiting University Student
ARS	362	Survey of Aztec/Maya/Inka Art	Art history of the Aztecs, Maya, Inka and their ancestors before the arrival of Europeans. Covers their prolific artistic production starting with their earthworks in the deserts of Peru and ending with their stone pyramids and painted codices of Guatemala and Mexico. Meets non-Western Art History Requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 45 hours
ARS	369	Mexican Art	Critically examines how Mexico and its people have represented themselves and been represented by others from ancient times to the 20th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 369 (ARS 469) or ARS 394 (Mexican Art) OR Visiting University Student
ARS	370	The Art of the Comic	Examines popular culture art forms of comics, comic books and graphic novels as they relate to the art of the west as well as their greater global context. Explores the various genres of comics and investigates a variety of themes found in comics, including war, gender construction, and the impact of globalization on western culture and society. Students become familiar with some of the most important comic artists, and the studio processes for the creation of comics. Concludes with an investigation of the impact of comic art on fine art around the world and on live-action films.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 370 or ARS 394 (The Art of the Comic)
ARS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	402	Art of Ancient Egypt	Aesthetic, philosophical, and cultural basis of Egyptian art from pre-Dynastic period through New Kingdom. Emphasis on sculpture and architectural monuments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 or 102 with C or better; Credit is allowed for only ARS 402 or ARS 502 OR Visiting University Student
ARS	403	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)

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ARS	404	Greek Art	History of art, architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 with C or better; Credit is allowed for only ARS 404 or ARS 504
ARS	406	Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major; ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration: ARS 101 with C or better
ARS	414	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 414 or ARS 514
ARS	418	German Renaissance Reformation	Graphics, painting, sculpture, and architecture, ca. 1450-1550. Reformation themes and Renaissance style considered within religious, political, social, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): ARS 101 or ARS 102 OR any 200-level or higher course in ASB, ENG, FRE, GER, HST, ITA or REL with B- or better; Credit is allowed for only ARS 418 or ARS 598 (German Renaissance and Reformation Art)
ARS	422	Italian High Renaissance Art	History of Italian art during the 16th century, including the achievements and influence of Leonardo da Vinci, Raphael, and Michelangelo.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 422 or 522
ARS	424	Italian Baroque Art	Italian painting, sculpture, and architecture of the 17th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Pre-requisites: ARS 101; ARS 102
ARS	434	Revolution to Impressionism	Between 1770 and 1900, a period called the long 19th century, Europeans experienced rapid and extensive changes in politics, culture, social and economic structures, scientific methods, and technology. The Industrial and French Revolutions reflected rapid developments rooted in the 16th-17th century Scientific Revolution and rising nationhood. Considers how in this period European art reflected and shaped historical events in content, style, representational strategies and new roles for art and artists.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): any 200-level course or higher in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 434 or ARS 534
ARS	435	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	438	Art of the 20th Century I	Developments and directions in art between 1900 and World War II.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 with B- or better or one course in ARS, ENG or HST at 200 level or higher with B or better OR Visiting University Student
ARS	439	Art of the 20th Century II	Art since World War II, with consideration of new concepts and experimentation with media and modes of presentation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 or 438 with B- or better; Credit is allowed for only ARS 439 or ARS 539
ARS	440	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
ARS	441	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Also considers historical precedents, including Civil War monuments and the City Beautiful Movement.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	442	Critical Issues in Am Painting	Explores issues of national identity and western expansion, Manifest Destiny, through images of race and violence in western American painting from 1800 to the early 20th century. Includes "claiming and settling the wilderness," cultures in conflict, the cowboy, and visions of an enchanted land.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 442 or 542
ARS	443	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430

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ARS	444	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
ARS	445	History of Animation	Covers popular art forms of animated films as they relate to the art of the west as well as their greater global context. Begins with a brief look at the importance of storytelling in human culture before turning to the roots of animation; the invention of moving animated pictures in the early 20th century; the rise of major animation studios like Walt Disney, Fleischer Studios and Warner Bros.; television animation; foreign animation classics; and the recent work of independent animators. Students become familiar with some of the most important animation directors and the studio processors for the creation of animated films. Concludes with an investigation of the impact of animation on fine art and live-action films.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 445 or ARS 494 (History of Animation)
ARS	456	Intro to Museums	Broad scope of what museums do by exploring their history and the critical issues they face. Acquaints students with the basic functions of specific museum departments and staff, including the role of director, curator, registrar, preparator, as well as fund raising, marketing, audience development, education, exhibitions, conservation, ethics, cultural/heritage tourism and public art. Guest speakers and field trips enhance classroom material.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or ARS 102 OR any 200-, 300- or 400-level course in ASB, ENG or HST with B- or better
ARS	460	Art Now	Critical overview of major issues and controversies of the last 10 years within the global, national, and local art scene.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102 with B- or better or one course in ARS, ENG, or HST at the 200 level or higher with B or better, OR Digital Culture major
ARS	465	Native Art of North America	Native American art forms of the United States and Canada from prehistoric times to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & C & H	Prerequisite(s): minimum 45 hours; minimum 2.00 GPA; Credit is allowed for only ARS 465 or ARS 565 OR Visiting University Student
ARS	472	Art of China	Study of major forms in Chinese art: ritual bronze, sculpture, ceramic, calligraphy, painting, and architecture. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 50 hours; minimum 2.00 GPA OR Visiting University Student
ARS	473	Art of Japan	Japanese art from the Joman period to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 55 hours; Credit is allowed for only ARS 473 or ARS 574 OR Visiting University Student
ARS	475	Chinese Painting	From Ku K'ai-chin to Ch'i Pai-shih. Major artists, styles, and movements in Chinese painting. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 475 or 575
ARS	480	Research Methods	Methodology and resource material for art historical research. Techniques of scholarly and critical writing and evaluation of bibliographic sources.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): Art (Museum Studies) or Art (Art History) major; ARS 101 with C or better; ARS 102 with C or better; minimum 56 hours OR Visiting University Student
ARS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARS	485	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): ARS 101; ARS 102; Credit is allowed for only ARS 485 or ARS 585 OR Visiting University Student
ARS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student
ARS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	
ARS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Pre-requisite: Minimum 90 hours

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ARS	501	Methodologies and Art History	History of the discipline and an exploration of various methodologies, critical theory, and bibliographies used by art historians.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	502	Critical Studies/Egyptian Art	Egyptian art from pre-Dynastic to New Kingdom periods. Focus on aesthetic, philosophical, and cultural contexts. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 402 or 502
ARS	503	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)
ARS	504	Critical Approach to Greek Art	Art and architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 404 or 504
ARS	506	Critical Studies in Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire. Research paper and/or supplemental readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	514	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 414 or ARS 514
ARS	533	The Pre-Raphaelites	Explores Pre-Raphaelite culture, both literature and art, and relevant social history, from the Pre-Raphaelite Brotherhood through Aestheticism and early twentieth century, focusing on interactions between images and texts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	534	Art & Visual Culture/19th Cent	Critical study of visual arts using primary source material from mid-19th century to WWI within philosophical, socioeconomic, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 434 or 534
ARS	538	Art of the 20th Century I	Charts how the avant-garde in the early 20th century developed different strands of modern art as it sometimes grew closer to, and at other times veered away from, radical politics.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 438, 538 or 598 (Art of 20th Century I)
ARS	539	Art of the 20th Cent. II	General introduction to major trends and issues of Euro-American art created between 1955 to around the turn of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for either ARS 439 or ARS 539 or ARS 598, Art of 20th C
ARS	540	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
ARS	541	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Considers historical precedents including Civil War monuments and the City Beautiful Movement.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)
ARS	544	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking). Credit is allowed for only ARS 444, ARS 544, ARS 598 (Films of India) or FMS 426

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ARS	574	Studies in Japanese Art	Critical examination of the nature and history of Japanese art, its rich heritage and its indebtedness to foreign sources.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 473 or 574
ARS	575	Approaches to Chinese Painting	Critical history of Chinese painting from Eastern Chou to 1911. Emphasis on masters, regional developments, and conceptual underpinnings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Minimum 108 hours; Senior or Postbaccalaureate Undergraduate or Graduate; Credit is allowed for only ARS 475 or 575
ARS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	585	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 485 or 585
ARS	586	Theories of Contemporary Art	Upper-level introduction to a variety of issues in contemporary art theory. Over the course of the semester, students travel through a different thematic segment each week. Topics covered include globalization, activism, relational aesthetics, art and ecology, as well as other themes that have found increased relevance as new art forms, media and theory proliferate in the 21st century.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 586 or ARS 591 (Theories of Contemporary Art)
ARS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	710	Current Research in Art Histor	Review and critical evaluation of contemporary literature and research in art history.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Design, Environment and the Arts PhD student

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ARS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	110	Drawing as Seeing and Thinking	Immerses students from a broad range of non-art disciplines in the practice of drawing. Considers and reflects on drawing in its most expanded form: as a primary tool of communication and creative problem solving, as movement, as sensory experience and as its own unique method of cognition. Divides class meetings among lectures, exercises, field excursions and opportunities for critical dialogue. Students leave with an appreciation of the unique power of mark-making and an improved understanding of its application in their lives.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Credit is allowed for only ART 110 or 194 (Drawing as Seeing and Thinking) OR Visiting University Student
ART	111	Foundation Drawing	Fundamental, technical, and perceptual skills using common drawing media and their application to pictorial organization. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	112	2-D Design	Fundamentals of pictorial design. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art, Art-Exploratory, Minor in Studio Art, or BIS concentration in Studio Art student OR Visiting University Student
ART	113	Color	Principles of color theory as related to the visual arts. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	115	3-D Design	Fundamentals of 3-D form. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	116	Intro to Digital Media	Concentrates on the fundamentals of digital media, including imagery, sound, video, animation, and the Web. Assignments are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques and software as they become familiar with contemporary artistic processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 116 or ART 194 (Introduction to Digital Media) OR Visiting University Student
ART	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	201	Photography I	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	

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ART	202	Photography I Lab	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	0		Corequisite(s): ART 201
ART	204	Photography II: Black & White	Photography as an art medium with additional exploration into personal photographic aesthetics. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	205	Photography II: Color	Uses both film and digital capture to explore color photography in depth. Emphasizes computer editing and printing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	206	Digital Photography I	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of photography as a form of creative expression. With an emphasis on the student's own creative practice, covers technical, aesthetic and conceptual aspects of photography and explores how meaning is created in a photograph. Introduces basic digital editing, camera controls, selection and sequencing. Assignments cover traditional genres such as landscape, portrait and still life. Places a strong emphasis on interaction with classmates' work and receptivity to critique. Fully manual DSLR is suggested but not required for this course.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 206 or ART 294 (The Still Image in Digital Culture) OR Visiting University Student
ART	207	Digital Photography II	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of digital photography as a form of creative expression. With an emphasis on the student's own creative practice, explores the ways in which the recently increased speed of creation and dissemination have led to the ubiquity of photography and how these aspects have radically altered how photographs function in today's world. Covers technical, aesthetic and conceptual aspects of digital photography and explores how meaning is created in a digital photograph. Students learn digital editing, camera controls, file formats, workflow and explores media theory in relation to digital imaging technology. Assignments cover topics such as appropriation, social media, surveillance, vernacular and ritual photography. Places a strong emphasis on interaction with classmates' work and receptivity to critique.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ART	211	Drawing	Continued development of technical and perceptual skills. Emphasizes materials and pictorial content. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	214	Figure Drawing	Development of skill and expressiveness in drawing the basic form, construction, and gesture from the human figure. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	216	Intermedia Practices	Investigates the multidisciplinary practice of Intermedia within a fine art context and functions as a bridge between foundation courses and the Intermedia degree area specialty. Relying on principles and techniques from foundation level classes, students learn to choose appropriate media for a particular idea and construct work that is concept-driven and incorporates cross-disciplinary approaches. Students develop individual and diverse approaches to fusing traditional art disciplines with experimental, performative, spatial, and digital technologies. Students explore the full range of options available to contemporary artists and discuss the ever-shifting definition of intermedia and new media. Students may work in media including drawing, photography, mixed media, video, sculpture, networked, multimedia, electronic arts, digital sound manipulation, image processing, performance, and installation.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre- or coreq(s) w/ C or better: ART 113, 116 or 194 (Intro to Intermedia); 2 from ART 111, 112 or 115 OR Art Dig Cult major; ART 111, 112 or 113; Credit allowed for ART 216 or ART 294 (Intermedia Practices) OR Visiting University Student

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ART	217	Intro to Computer Animation	Prepares students for the exciting world of digital animation. Looks back at animation through history and how it has developed into what we understand today. Looks at history, theory, principles, practices and animation techniques. Expands the student's current knowledge of 3D digital animation and how it has changed and affected society through time. Students use learned techniques to create art in animation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 217 or ART 294 (Introduction to Animation) OR Visiting University Student
ART	218	3D Tools	Introduces 3D data capture, 3D modeling and rendering, and 3D prototyping and fabrication through creative/research activities using CNC and rapid prototyping tools. Projects are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques, software tools, and hardware in the course of making their creative/research projects, becoming familiar with contemporary artistic and engineering processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 218 or 294 (3D Tools)
ART	223	Painting	Fundamental concepts and materials of traditional and experimental painting media. Emphasizes preparation of painting supports, composition, and color. Lab. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	227	Watercolor	Fundamental concepts, materials, and techniques of watercolor. Emphasizes problem solving, basic skills, composition, and color. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	231	Sculpture I	Explores sculptural forms through concepts related to basic materials. Students learn how to create original sculptures using mold-making, wood-working and sheet metal construction. Focuses on studio production, safety, aesthetic criticism and history of sculpture. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
ART	253	Introduction to Printmaking	Introduces basic monotype, intaglio, relief, and related techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 113 with C or better OR Visiting University Student
ART	261	Ceramic Survey	Handforming methods, throwing on the wheel, decorative processes, and glaze application. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 112 with C or better; ART 115 with C or better OR non-Art major; minimum 45 hours OR Visiting University Student
ART	272	Intro to Metals and Jewelry	Emphasizes metal fabrication. Basic techniques of cutting, piercing, forging, soldering, and forming of non-ferrous metals.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; maximum junior standing; ART 112 with C or better; ART 115 with C or better OR Visiting University Student
ART	274	Wood I	Fundamental woodworking techniques to produce creative functional 3-D objects. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	276	Introduction to Textiles	Explores traditional and contemporary materials and basic techniques related to fibers. Embroidery, feltmaking, dyeing, block printing, plaiting, 3-D structures.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	300	Narrative/Non-Narrative	Explores how structure in images can be created both within the image (by setting up a picture) and by sequencing images that may or may not have had any relation when they were created. By exploring two prevalent ways in which images function in the art world—the directoral mode and sequencing mode—students gain valuable tools in terms of understanding how to construct meaning with their images. Emphasizes creating cohesive and complete sequences both narrative and non-narrative.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207

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ART	301	Alternative Processes I	Recognition Alternative Processes of the inherent characteristics of nonsilver processes and their use in communicating ideas. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major with completed portfolio; ART 204 with C or better OR Visiting University Student
ART	302	Digital Photo and Video	Through screenings, readings, discussion and practical assignments, explores the differences between the still and the moving image coming from the perspective of a still photographer. How does the addition of time, sound and movement affect the way we experience images? How have the histories of photography and cinema overlapped and how are they different? How does the fact that video and film are no longer prohibitively expensive for most people affect the approach that people take to creating videos? How can photographers make engaging video using their photo skills? Looking at practitioners and learning basic video editing tools--as well as various methods for output--students create video and still images with an understanding of the intersections, variations and potential of the similar yet markedly different languages of film, video and still photography.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207
ART	304	Junior Photographic Projects	Interpretation and manipulation of light as a tool in the performance of expressive photography. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with completed portfolio; ART 204 with C or better; ART 101 with C or better; ART 201 with C or better
ART	307	View Camera	View camera and darkroom techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better
ART	308	2D Digital Animation	Technical, conceptual and aesthetic world of 2D digital animation as a fine art and influential form of visual culture. Explores craft and technique in detail as well as principles of narrative and non-narrative, mise-en-scène, mood and affect, and visual rhythm and sound. Through assignments, tutorials, lectures, discussions and critiques, students expand their understanding of how their projects relate to histories of animated cinema, live action cinema, games, AR and VR, mobile media, and the visual arts at large. Students gain confidence using a range of 2D digital animation software. If interested in traditional hand-drawn and/or hand-manipulated puppet animation, students are encouraged to pursue these tools but these techniques will not be covered in class. The goal is for students to produce well-crafted, expressive and intelligent animations and to contribute to larger cultural conversations about 2D digital animation as a cinematic and artistic genre.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 308 or ART 394 (2-D Computer Animation) OR Visiting University Student
ART	311	Intermediate Drawing	Emphasizes composition and exploration of drawing media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 211 with C or better OR Visiting University Student
ART	312	Illustration	For the purposes of this class, to illustrate means to illuminate. The prompts challenge students to engage in storytelling and explore text/imagery relationships while simultaneously honing basic rendering skills. At times we find images to "illuminate," enhance or subvert the meaning of written language and at other times we create language as a result of creating an image. The interplay between text and images is a constant in this class.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is only allowed for ART 312 or ART 394 (Illustration) OR Visiting University Student
ART	314	Intermediate Figure Drawing	Drawing from the model with greater reference to structural, graphic, and compositional concerns. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 394 (Figure Drawing for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	317	Advanced Digital Photography	Builds on the skills and conceptual underpinnings of previous coursework and is the final course in the required photo foundation for the Digital Photography BFA. Students build on their understanding of photography in relation to the technical, aesthetic and conceptual aspects of photography. Requires students to create a short video and create physical objects, including printed photographs and a book. Places a strong emphasis on idea development, interaction with classmates' work and receptivity to critique.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206 or 207 OR Visiting University Student
ART	323	Intermediate Painting	Development of competency in skills and expression. Assigned problems involve light, space, color, form, and content. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 223 or 394 (Painting for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student

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ART	325	Figure Painting	The human figure clothed and nude as the subject for painting in selected media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 223 with C or better OR Visiting University Student
ART	327	Intermediate Watercolor	Explorations of personal expression in watercolor. Continued development of watercolor skills using traditional and experimental materials and techniques. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 227 or 394 (Watercolor for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	331	Sculpture II	Emphasizes metal fabrication as an expressive sculptural process. Techniques in welding, cutting and bending of metals and their aesthetics. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art BIS major or Studio Art minor; ART 110 with C or better; ART 115 with C or better OR Pre- or corequisite(s): Art BA or BFA major; ART 231 with C or better if completed OR Visiting University Student
ART	332	Sculpture III	Explores diverse media with a focus on mold-making processes. Development of the sculpture portfolio. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 with C or better
ART	333	Foundry Casting Methods	Fine art and techniques of metal casting; mold making, foundry safety, finishing techniques, application of patinas, and history of casting. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better OR Visiting University Student
ART	345	Visualization & Prototyping	Studio/seminar introduces concepts of computer visualization, modeling, and rapid prototyping in an interdisciplinary manner.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Digital Art OR Intermedia student
ART	346	3-D Computer Imag & Animation	3-D modeling and animation. Emphasizes concepts and fine arts applications.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	CS	Prerequisite(s): ART mjr or Digital Culture (Art) mjr: ART 111, ART 112 or ART 113 w/ a C or better OR Minor in Studio Art (HISTARTMIN): ART 110 w/ a C or better, and ART 112 or ART 113 or ART 115 or ART 116 w/ C or better OR Visiting University Student
ART	348	Animation Motion Studies	Principles and applications of 3-D animation for fine arts. Emphasizes animation techniques for expressive effects.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 346 with C or better OR Visiting University Student
ART	351	Intaglio I	Introduces concepts and techniques of intaglio processes, including non-acid and acid techniques such as drypoint, line etch, aquatint, photo etching; introduces multiple plate printing ala poupee wiping, chine colle, and basic color. Idea-generating exercises include visual signifiers of identity, democratic multiple, time and space, the disembodied gaze, and reconsidering beauty. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better
ART	352	Lithography I	Monochromatic and color planographic printmaking utilizing stone and aluminum plate processes. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 253 with C or better, or Studio Art Minor: ART 110 with C or better; ART 112 or 113 with C or better
ART	354	Screen Printing I	Introduces paper, direct, and photographic stencil techniques. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; two from ART 111, 112, 113 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better OR Visiting University Student
ART	360	Ceramic Throwing	Design analysis and production of functional pottery. Emphasis on throwing techniques, surface enrichment, and glaze application.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	364	Ceramic Handbuilding I	Search for form using handbuilding techniques. Kiln firing and related problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	365	Ceramic Handbuilding II	Continuation of ART 364 with an additional focus on large-scale works, surface treatments, and glaze decoration with related kiln firing applications.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; ART 364 with C or better OR BIS Studio Art student or Studio Art student; ART 364 with C or better OR Visiting University Student
ART	367	Ceramic Vessels	Focuses on the exploration and creation of ceramic vessel forms utilizing a variety of technical approaches. Students develop a personal direction through guided assignments focusing on both historical/contemporary vessels, function vs. design, and various forming processes. Students should have previous experience with either wheel-throwing or hand-building techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 367 or ART 394 (Ceramic Vessels)
ART	372	Casting and Jewelry Techniques	Covers lost wax casting for jewelry scale work and alternative casting methods and mold making as well as other techniques such as chain making and marriage of metals.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better

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ART	373	Form Emphasis in Metals	Covers forming non-ferrous metals using techniques such as anticlastic and sinclastic forming, raising, fold forming. Projects focus on hollow forms using these various techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better
ART	374	Wood II	Individual and directed problems in wood related to the production of unique functional art objects. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better OR Visiting University Student
ART	376	Weaving and Dyeing	Focuses on loom-controlled woven structures in conjunction with a variety of dye techniques. In the investigation of these new practices, an emphasis is placed on technical issues, historical trajectories and contemporary contexts.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 276 with C or better OR Fashion BA major: FSH 201 with C or better OR All other majors: ART 110, 112, 113, 115, or 116 with C or better OR Visiting University Student
ART	377	Textile Design	Explores a variety of surface design processes such as sewing, embroidery, dyeing and interlacing, as well as the construction of collage, piece work and creatively fabricates sculptural forms with their newly soft design materials.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276 with C or better or FSH 201 with C or better OR Visiting University Student
ART	378	Dig Text	Starting in the 19th century with advent of the Jacquard loom, which is often noted as the inspiration for the modern day computer, explores the interwoven history and practice of textiles and technology. Taking theoretical and practical approaches, works through textile techniques, such as knitting, printing and wearables, as well as research and readings. Emphasizes applying the information presented to support individual bodies of work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) C or better: ART 110 or 111; ART 112, 113, 115, or 116; min 2.00 GPA OR Dig Cult stdnt; AME 111; AME 112 or 130; min 2.00 GPA OR Fashion maj; FSH 201; Credit for only ART 378 or 394 (Digital Textiles) OR Visiting University Student
ART	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	400	The Photobook	Photographers have long seen the photobook as an excellent way to showcase their work. From the mid 1960s art photographers have used self-publishing through methods as simple as a photocopier to disseminate their work. Recent advances in the accessibility of high-quality reproduction capacities have resulted in an explosion of flexible and creative ways for photographers to execute their ideas and contribute to a wide range of conversations. Practical and theoretical course on the photobook. Students learn about the history of the photobook and the multitude of contemporary applications from the major photography publishers such as Aperture, through to the small press and self-publishing and the exciting world of art book fairs. Students also create a handmade photobook and create and order a print-to-order book of their own work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 300 OR Visiting University Student
ART	402	Traditional Genres in Photo	Through practical assignments, lectures, readings, discussion and critique, investigates traditional photographic genres such as portrait and landscape. Students create works in the genre in question and contextualize these images in historical and contemporary art. Addresses such questions as what defines a genre and the social, political and cultural impacts these genres have had on photography and art. Also addresses how genres have been transformed with the advent of digital technology explores how this affects images in a broader cultural and social history. Emphasizes the students' work and a final portfolio of portraits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 300 OR Visiting University Student
ART	403	Senior Photographic Projects	Technical and philosophical refinement of personal aesthetic with various photographic media. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better
ART	404	Portraiture Photography	Photographing people. Critical discussions and slide lectures on issues in portraiture. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better OR Visiting University Student
ART	406	New Genres in Digital Photo	Explores the ways in which contemporary technology and the key changes--ubiquity, speed and reproducibility--have spawned new genres in photo-based art. Explores these emerging and changeable genres and examines the potential they present for creative expression and in-depth conversation about new ideas. Defines these new genres: selfie sticks, Instagram, screenshots from Google Streetview or remote cameras that we control from our home computer. Students are given weekly assignments and at the end of the course create a project within one of the new genres.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 300

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ART	407	Digital Photography Capstone	Culminating class of the online Digital Photography degree. It is organized around a single, major self-directed project. Students will submit work once a week for critiques and will participate in their classmates' critiques as well. Classmates and instructor will guide each student towards the best execution of their vision. Students will complete course with a portfolio of images that may be realized in a variety of forms including but not limited to: an online gallery, a website, or a printed portfolio or a photobook. Students will also write an artist statement to accompany the work and conduct research where there is an audience for their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317
ART	408	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 3.00 GPA; minimum 45 hours. Credit is allowed for only ART 408 or ART 508
ART	409	Photographic Exhibition	Care of photographic prints, print presentation, and exhibition. Practical experience in gallery operations. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	410	Landscape Photography	Photographing landscapes. Critical discussion and presentations on issues in landscape photography. May be repeated for credit. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	411	Drawing IV	Visual and intellectual concepts through problem solving and independent study. Emphasis on the individual creative statement. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 211 and ART 311 with C or better
ART	412	Advanced Techniques	Highly technical course consists mainly of technical applications, readings, quizzes and discussion. Focuses on learning advanced image-editing software such as Photoshop, and photo management and manipulation software. Covers montage and color management systems including profiling for color printing and monitors. Students also learn about using digital backs on medium format and view cameras.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	414	Life Drawing III	Various media and techniques on an advanced level. The human figure as an expressive vehicle in various contexts. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 314; credit is allowed for only ART 414 or ART 514
ART	415	Digital Compositing	Photographically based lab/lecture course designed to address ideas and concepts using digital montage/manipulation as an expressive medium. Emphasizes both assignments and self-defined projects. Includes discussion of technological theory and the extent to which digital imaging has affected the field of photography in the fine arts and professional arenas. Introduces new and more advanced techniques, but students also review retouching, coloration, enhancement and montage techniques. Covers the basic principles of pattern design in relationship to photography and the use of the computer as a pattern generator.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 415 or ART 494 (Digital Compositing) OR Visiting University Student
ART	417	Storyboard & Narrative Sequenc	Focuses on the representation and manipulation of time, cause and effect, and viewpoints in narrative sequences. Designed for students interested in live action film, animation, video gaming and comic book formats. Although storyboarding is typically considered a preparatory stage, students are to treat each project as a finished piece, thereby requiring an amplified level of attention and understanding with a special emphasis on consistency and coherence.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is allowed for only ART 417 or ART 494 (Storyboarding and Narrative Sequencing) OR Visiting University Student

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ART	418	Alternative Processes II	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 418 or ART 494 (Alternative Processes II) or ART 518 or ART 598 (Alternative Processes II)
ART	423	Advanced Painting	Further exploration of techniques and concepts of painting.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 323 with C or better; min 2.00 GPA OR All other majors: ART 110 with C or better; ART 112, 113, 115, or 116 with C or better; min 2.00 GPA; Credit is allowed for only ART 423 or ART 523
ART	424	Stop Motion Animation	Hands-on studio focuses on creating original stop motion animations. Covers the theory of timing for animation, how to plan and collaborate on animations and about the history of the art form. In-class activities include demonstrations, project work, and viewing of and discussion of stop motion animated films. Homework includes hands-on animation as well as reading, writing and viewing of films.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 424 or ART 494 (Stop Motion Animation) OR Visiting University Student
ART	425	Intermediate Figure Painting	The human figure clothed and nude as the subject for painting in selected media. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 325 with C or better; Credit is allowed for only ART 425 or ART 525
ART	427	Art on Paper	Advanced techniques, concepts, and processes with water media and mixed painting and drawing media on paper.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better; Credit is allowed for only ART 427 or ART 527 OR Visiting University Student
ART	428	Video & Sound as Sculpt Mat	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry Pi. The latest developments in video and sound for sculpture and sculpture for video and sound.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art BA or BFA major; ART 231 with C or better; Credit is allowed for only ART 428 or ART 494 (New Systems-Sculpture) or ART 528
ART	429	Adv Painting & Drawing Studio	Advanced-level students produce a series of drawings, paintings and/or mixed media works based around their chosen theme. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Expects students to have a high level of motivation, a consistent work ethic, and a desire to advance their creative practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Painting and Drawing BFA major; ART 311, 314, 323, or 425 with C or better; minimum 2.00 GPA; Credit is allowed for only ART 429 or ART 494 (Painting and Drawing Studio Capstone)
ART	430	Adv Sculpture: Materials&Tech	Encourages individual investigation in sculpture with an emphasis on the development of a personal approach to materials and techniques. Students have acquired a strong background in the basic techniques and materials in sculpture in previous classes and now are working toward the development of a portfolio or body of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 OR Visiting University Student
ART	431	Special Problems in Sculpture	Development of a personal approach to sculpture. Emphasis on form, individual problems, and related color technology. Professional practices and presentation. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231, ART 331 and 332 with C or better
ART	432	Neon Sculpture	Techniques for creating neon in an art context. Glass tube bending and fabrication. Construction of artworks utilizing light-generating gasses. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231 with C or better or BIS Studio Art emphasis or Studio Art minor; ART 110 and 115 with C or better

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ART	433	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Requires participation in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Provides a history of the use of cast metal in the visual arts and an understanding of how casting processes can be applied to contemporary sculptural concepts. Requires participation in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 331 with C or better OR Non-art majors; ART 231 with C or better OR Visiting University Student
ART	434	Adv. Sculpture:Context/Content	Studio-based class offers an opportunity for guided individual study with an emphasis on content, context and professional practices. Students work on developing a series of related works on a theme of their choosing. Assignments help students gain a greater understanding of the themes and ideas that are important in their art and expand their awareness of historical and contemporary artist working along similar lines. Requires students to develop a packet for self-promotion including a resume, portfolio and artist statement and to submit these materials to a competitive exhibition, commission, residency, scholarship or similar opportunity.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331
ART	435	Foundry Research Methods	Research in foundry techniques.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	436	Architectural Sculpture	Sculptural concepts as related to architecture and other man-made environments. Scale drawing, models and relief sculpture. Students learn to produce proposals for large-scale and public commissions.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better
ART	438	Moving&Interactv Sys Sculpture	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 231 with C or better; Credit is allowed for only ART 438 or ART 538 OR Visiting University Student
ART	439	Intermedia Studio	Exploring visual effects by combining traditional and nontraditional methods, techniques, and concepts. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student or Digital Culture (Art) student; ART 111, ART 112 or ART 113 with C or better or Studio Art minor (or BIS Studio Art emphasis), ART 110 and 116; credit is allowed for only ART 439 or 539
ART	440	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The Experimental Video Art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 116 with C or better, or Art minor or non-Art major with minimum 45 hours OR Visiting University Student
ART	441	Video Art	Utilizing video and audio equipment essential to the production of broadcast quality video art. 2 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): Art portfolio completed; corequisite ART 440
ART	442	Art and Community	Explores through studio practice, research and presentations intermedia social art practice, public practice, art/life practice, relational aesthetics, community-based projects, and other critical theories and conventions that engage art and community.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Performance and Movement major or Studio Art minor or BIS Studio Art emphasis or minimum 45 hours; ART 110 with C or better; ART 116 with C or better OR Visiting University Student
ART	443	Intermedia Performance	Experimental, conceptual, and interdisciplinary studio art with emphasis on performance and new media practices.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art minor or BIS Studio Art emphasis; ART 110 with C or better; ART 116 with C or better OR Art major OR Performance and Movement BA major; Credit is allowed for only ART 443 or ART 543 OR Visiting University Student

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ART	445	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques, including image capture, film generation and analog processes, and digital and inkjet printing.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): 50 minimum hours; credit is allowed for only ART 445 or 494 (Digital Process for Print)
ART	449	Computer Animation and Video	Integrates 3-D fine arts animation with video and compositing. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 346 and ART 348 with C or better
ART	451	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 351 with C or better; credit is allowed for only ART 451 or ART 551
ART	452	Advanced Lithography	Continuation of ART 352. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student or completion of portfolio milestone; ART 253 and ART 352 with C or better
ART	453	Experimental Printmaking	Alternative methods of working with print techniques, including installations, actions or performances, and other nontraditional formats.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): at least one of the following: ART 351, 352, 354, 355, 456, 459, 477, 478, 494 (Relief), or 394 (Photolithography) with C or better; Credit is allowed for only ART 453 or ART 553
ART	454	Advanced Screen Printing	Continuation of paper, direct, and photographic stencil techniques. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 354 with C or better OR Visiting University Student
ART	455	Artists' Books	Concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic editing and low-tech printing techniques while simultaneously working on studio assignments that challenge them on a conceptual level.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 455 or ART 494 (Artists' Books) or ART 555 OR Visiting University Student
ART	456	Letterpress Studio	Equipment, techniques and applications of letterpress printing. Students hand set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR non-art major with 56 hours; minimum 2.50 GPA; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	457	Fine Printing & Bookmaking II	Continuation of ART 456. Bookbinding, book design and printing, advanced typography, theory, and presswork. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 253 with C or better; ART 456 with C or better; Credit is allowed for only ART 457, ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	458	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with ART 112 with C or better, OR non-Art majors with 56 minimum credit hours and minimum 2.50 GPA; Credit is allowed for only ART 458 or ART 558
ART	459	Monoprinting	Nonmultiple printed image using a variety of technical approaches. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BA or BFA Art major, minimum 45 hours; or BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor; ART 110, 112, 113, 115 or 116 with C or better
ART	460	Ceramic Clay	Research into various clay body formulations, local natural materials, slip glazes, and engobes.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; Pre- or corequisite(s): ART 360 and ART 364 with C or better if completed
ART	461	Animation Capstone	In this studio course, advanced-level students produce a substantial animation project of their own devising. This project could be a very short film individually produced in any animation medium, or a more substantial film produced in collaboration with other students. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Students should enroll in the class with a clear idea about the project that they want to undertake.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art (Animation) BFA major; ART 308 with C or better; ART 346 with C or better; ART 417 with C or better; minimum 2.00 GPA
ART	463	Ceramic Glaze	Glaze calculation and formulation using various glaze colors and surfaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 261 with C or better

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ART	466	Special Problems in Ceramics	Emphasis on personal expression within structure of seminars, critiques, and studio work. Professional methods of presentation/documentation of work. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 and ART 364 with C or better
ART	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	472	Adv Jewelry Surface Techniques	Covers jewelry forms and techniques including surface embellishment such as granulation, keum-boo and filigree to be used as tools for aesthetic expression and expand student awareness of historical and contemporary jewelry/metalwork.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 and ART 372 with C or better
ART	473	Advanced Metals & Mechanisms	Covers new techniques and develops existing skills in non-ferrous metal forming and mechanism fabrication while further refining fitting and finishing techniques, incorporating concept with craft and emphasizing professional practices/portfolio development.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better; ART 373 with C or better; Credit is allowed for only ART 473 or 598 (Adv. Metals & Mechanisms)
ART	474	Advanced Wood	Extended experience and advanced techniques in the use of wood to create functional works of art. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better; ART 374 with C or better OR Visiting University Student
ART	476	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 276 with C or better; ART 376 with C or better
ART	477	Printed Textiles	Techniques for screen printing on fabric exploring pattern as a compositional element. Various stencil methods including photographic processes.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 276 with C or better; ART 377 with C or better OR Fashion BA major: FSH 201
ART	478	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276, ART 377 and ART 477 with C or better; Credit is only allowed for ART 478 or ART 578
ART	479	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major or Studio Art minor; ART 276 with C or better; Credit is allowed for only ART 479 or ART 579 or ART 598 (3-D Fibers)
ART	482	Senior Exhibitions/Portfolio	Capstone course required of all BFA studio art majors. Students participate in a group exhibition and focus on professional practices, including exhibition display and advertisement, career planning, and development of a professional packet with artist statement, CV, and digital portfolio.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BFA student; minimum 100 hours; Credit is allowed for only ART 482 or ART 494 (Senior Exhibition/Portfolio) OR Visiting University Student
ART	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): Art student
ART	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ART	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	STO	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student
ART	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	

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ART	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): Art student
ART	501	Cross-Practice Critique	Engages graduate students in deep, sustained critical discussion about artwork made by students in the class. Students investigate together the process(es) of critiquing artwork and consider and discuss the underlying assumptions and values they bring to this method of communication and pedagogy. Helps students develop and improve their critical voice at whatever level they are at, including the ability to receive and accept critical feedback of their work. Encourages students to hone their sense of personal agency in the context of "the crit."	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate
ART	508	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits. Graduate level focuses on the development of a personal approach.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ART 408, 494 (experimental Film), or ART 508, or ART 598 (Experimental Film)
ART	514	Graduate Life Drawing	Advanced study of the human figure as an expressive vehicle in various contexts. Graduate level focused on the development of personal approach. Timed poses of short and long duration with emphasis on using the figure to enhance the students individual research. Art historical component will be included to enable the student to fit themselves into the context of the use of the figure as it relates to the study of the history of art.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 414 or ART 514
ART	518	Alternative Processes	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 418 or ART 494 (Alternative Processes II) or ART 518 or ART 598 (Alternative Processes II)
ART	523	Graduate Painting	Concentrates on formal and conceptual skills and explores a variety of topics, including historical and contemporary painting issues, visual literacy, critical thinking, and professional practices.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR Senior or Postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 423 or 523
ART	525	Advanced Figure Painting	Advanced study of the human figure clothed and nude as the subject for painting in selected media. Graduate-level study focuses on the development of personal expression.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 425 or ART 525
ART	527	Art on Paper	Exploration focused on conceptual and technical approaches combining mixed media painting and drawing on paper and related surfaces.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 427 or ART 527
ART	528	Video & Sound as Sculpt. Mat.	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry Pi. The latest developments in video and sound for sculpture and sculpture for video and sound.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 428 or ART 528 or ART 598 (New Systems Sculpture)

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ART	529	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The experimental video art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects. Graduate students create a collaborative Video anthology.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 529 or ART 598 (Experimental Video Art) or ART 598 (New Media Concepts)
ART	530	Digital Compositing	Fine arts digital compositing of computer animation, video, and video editing of composites with audio.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior OR postbaccalaureate undergraduate with minimum of 108 earned hours
ART	532	Neon Sculpture	Emphasizes techniques for creating neon in an art context, including glass bending and fabrication.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 532 or ART 598 (Neon Sculpture)
ART	533	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Students are expected and required to participate in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Students deepen their knowledge of the history of the use of cast metal in the visual arts and understanding of how casting processes can be applied to contemporary sculptural concepts, participating in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 533 or 598 (Foundry Casting Methods)
ART	538	Mvg & Intractv Systems in Sculp	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 438 or ART 538 or ART 598 (Experimental Systems in Sculpture)
ART	539	Intermedia Studio	Investigates how intermedia practice can expand the realm of conversations within contemporary art, life and society. Encourages investigation of social art practice, art/life practices, conceptual art, digital art, emergent media, installation, new genre public art, performance, and visual art with emphasis on research, production and theory. Students expand their ability to assess interdisciplinary strategies. Through reinforcing artistic rigor, students deepen their ability to employ intermedia methods as artistic communication, to express a personalized point of view.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 439, 539 or 598 (Intermedia Studio)
ART	542	Art and Community	Through studio practice, research and presentations, explores intermedia social art practice, public practice, art/life practice, relational aesthetics, community-based projects, and other critical theories and conventions that engage art and community. Graduate students, in conjunction with the instructor, create their own workplan for the course.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 542 or 598 (Art and Community)

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ART	543	Intermedia Performance	This concept-driven course explores intermedia as a contemporary art practice from a performance/live art perspective. Students create performance and time-based work connected to their individual artistic interests while making connections among art, life, and society. Students working in a diverse range of disciplines and artistic genres discover new processes of working and negotiate unexpected connections inherent in interdisciplinary production and cross-disciplinary collaboration. Student projects depend on particular specializations and passions brought to the class and may produce a range of multimedia performance work including performing for the camera, interactive networks, analogue/digital sound, video, sculpture, and installation. Semester I addresses the body as material exploring the body, subjectivity, and cultural histories. Semester II focuses on the body in public space exploring intervention and the everyday.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 543 or 598 (Intermedia Performance)
ART	545	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Course is comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques: image capture, film generation and analog processes, and digital and inkjet printing.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 545 or 598 (Digital Processes for Printmaking)
ART	550	Photolithography	Covers various photolithography processes including black and white, multiple color, and CMYK photo reproduction techniques, looking at the transformation of the photo image into print and the nature of printed photographic images.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 550 or ART 598 (Photolithography Prints)
ART	551	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or post-baccalaureate undergraduate with minimum of 108 earned hours; credit is allowed for only ART 451 or 551
ART	553	Experimental Printmaking	Focuses on the development of concepts in printmaking beyond the traditional two-dimensional image on paper that is contained in a portfolio or frame. Explores alternative techniques and materials, methods of extending the print beyond 2 dimensions, and expanding the concept of what is a print. Students are encouraged to understand printmaking within the wider context of contemporary art, especially those directly related to the student's main artistic emphasis (if not printmaking).	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 453 or ART 553
ART	554	Graduate Screenprinting	Focuses on the development of screenprinting techniques and the ability to utilize these techniques as an expressive visual method of exploring and developing individual research concepts.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 554 or 598 (Advanced Screen Printing)
ART	555	Artists' Books	Graduate-level introduction to concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic editing and low-tech printing techniques while simultaneously working on studio assignments that challenge on a conceptual level.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 555 or ART 598 (Artists' Books) or ART 455
ART	556	Letterpress Studio	The equipment, techniques and applications of letterpress printing. Students hand-set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	557	Fine Printing & Bookmaking	Continuing study of letterpress in fine art--the book arts--with emphasis on the book.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 457 or ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	558	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 458 or ART 558

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ART	559	Monoprinting	Investigates monoprint/monotype printmaking and its aesthetic possibilities. Students acquire basic and advanced skills in the medium through demonstrations, problem solving exercises, and experimentation.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 559 or 598 (Monoprinting)
ART	563	Ceramic Glaze Research	Focuses on an investigation into the science and art of clay and glazes and a process of exploration of materials and surfaces, which continues to evolve with the students' evolving creative expression. The first assignments help students choose a direction to investigate for their own artwork. Each student selects a particular glaze to focus on during the term. Investigates ways of altering and improving recipes, focusing on one particular glaze quality at a time. By the end of the term students understand their glaze focus extensively and know how to go about altering all glaze types for special effects and required changes.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 563 or ART 598 (Ceramic Glaze Research)
ART	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	576	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 476 or ART 576 or ART 598 (Woven Structures)
ART	578	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, this class presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 478 or ART 578 or ART 598 (Advanced Surface Design)
ART	579	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ART 479, 579 or 598 (3D Fibers)
ART	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours

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ART	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	621	Studio Problems	Advanced study, 3 hours a week each section.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		
ASB	100	Introduction to Global Health	Current global health crises, challenges; tools for describing health and disease; ecological, cultural, social, historical, political-economic factors; comparative health systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Credit is allowed for only ASB 100 or SSH 100 OR Visiting University Student
ASB	101	Anth: Undrstndng Human Dvstly	Provides an integrated understanding of biological, historical, and cultural evolutionary processes that account for human variation. Specifically examines how humans evolved and how they obtained the characteristics that make us a unique species. Considers cultural and biological models of cooperation, resource acquisition and distribution, sex and marriage, parenting, conflict and warfare, political structures, power and status, sex roles, ritual, religion, and language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	102	Intro to Cultural Anthropology	Introduces concepts and methods of sociocultural anthropology, with illustrative materials from a variety of communities in a globalizing world. Explores the concept of culture and examines a variety of social, political and economic dimensions of how humans organize their lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
ASB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
ASB	210	Human Sexuality: Anth Perspect	Examines the sexual nature and behavior of humans from both a biological and an anthropological point of view across various cultures around the globe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	211	Women in Other Cultures	Cross-cultural analysis of the economic, social, political, and religious factors that affect women's status in traditional and modern societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	
ASB	220	Exprsv Ctr Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or HU or SB) & C	Credit is allowed for only ASB 220 or TCL 230
ASB	222	Buried Cities and Lost Tribes	Archaeology through its most important discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	223	Aztecs, Incas and Mayas	Archaeological and historical study of the three best-known ancient cultures of Mesoamerica and South America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introduction to Evolutionary Medicine) OR Visiting University Student

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ASB	252	Sports and Culture	Cross-cultural examination of symbolic and social dimensions of sports past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Credit is allowed for only ASB 272 or SOS 272
ASB	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
ASB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 300 or SSH 300 OR Visiting University Student
ASB	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
ASB	302	Ethnographic Field Study	Fieldwork study of cultural adaptation through ethnographic research methods and local culture. Taught in Latin America or other international locations.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Pre-requisite: ASB 102, 222, 223, or ASM 104
ASB	305	Poverty and Global Health	From perspectives of anthropology and allied fields, explores critical, social justice, and ethical issues in health care, research, and disparities. Focuses on vulnerable and special populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 305 or SSH 305 or WST 305 OR Visiting University Student
ASB	310	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
ASB	311	Prin of Social Anthropology	Comparative analysis of domestic groups and economic and political organizations in primitive and peasant societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	
ASB	316	Money and Culture	Using the fundamentals of economic anthropology, investigates how culture shapes our relationship to money and decision making. Provides a foundation for thinking about how production, exchange and consumption can be explained by looking at human behavior, thought and culture, and encourages students to apply anthropological knowledge to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better
ASB	319	The North American Indian	Archaeology, ethnology, and linguistic relationship of the Indians of North America. Does not include Middle America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: ASB 102, ASB 222, or ASB 223
ASB	322	Peoples of Latin America	Indigenous, mestizo, and national cultures, rural and urban peoples in the region that today we call Latin America. Covers historic and contemporary events and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	325	Peoples of Southeast Asia	Cultural-ecological perspective on the peoples of mainland and insular Southeast Asia. Subsistence modes, social organization, and the impact of modernization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	G	
ASB	326	Human Impacts on Ancient Envir	World survey of successful and unsuccessful ancient societies and their impacts on the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	
ASB	327	Disaster!	Examines the causes of disasters, such as famines and pandemics, throughout human history. Explores cases in which social responses to disaster have helped people survive or led to their demise. Through hands-on activities, students gain experience with popular tools to understand human responses to disasters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	330	Understanding Archaeology	In-depth study and critique of theories and methods for reconstructing the lives of prehistoric peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student

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ASB	333	Frauds, Myths and Mysteries	Depictions of archaeology in popular culture are full of dubious tales of ancient extraterrestrials, giants and widespread scientific conspiracy. Explores such fantastic claims and learn how archaeologists separate plausible arguments from pseudoscience. Critically examines how and why such pseudoscientific claims develop and take hold of the public imagination.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 333 or ASB 394 (Myth Busters) OR Visiting University Student
ASB	335	Ancient Ruins of the Southwest	Archaeological exploration of the the major cultural developments in the prehispanic Southwest, including Mesa Verde, Chaco Canyon, Mimbres, Hohokam and Rio Grande.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H & C	Prerequisite(s): ASB 102, 222, or 223 or minimum 45 hours OR Visiting University Student
ASB	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
ASB	337	Pyramids and Hieroglyphs	Preconquest cultures and civilizations of Mexico. The Aztecs, Mayas, and their predecessors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339
ASB	340	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours. Credit is allowed for only ASB 340 or SOC 328
ASB	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
ASB	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
ASB	344	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Pre-requisite: Minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334
ASB	346	Marriage and Family Diversity	Social, economic, and cultural factors that shape family diversity in relation to generational and gender dynamics within the family.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	
ASB	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ASB	350	Anthropology and Art	Art forms of people in relationship to their social and cultural setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	
ASB	353	Death&Dying Cross-Culturl Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
ASB	355	Trad Medicine and Healing	In-depth study of world views, practices, and roles of shamans and traditional and contemporary healers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU or SB	Pre-requisite(s): ASB 102, ASB 222, ASB 223 or ASM 104 or SSH 100 or ASB 100 with C or better. Credit is allowed for only SSH 355 or ASB 355
ASB	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356

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ASB	357	Society and Drugs	Analyzes how humans use exogenous chemicals to change psychology, biology and behavior, and what positive and negative consequences this has for human health. Explores how such chemical technologies arise through cultural evolution, how societies decide what are appropriate and inappropriate uses of such technologies, how these technologies change what is considered normal biological functioning and behavior, and how these technologies shape human health. Through this substantive topic, introduces basic concepts and tools in two related fields—medical anthropology and epidemiology. A consistent focus in the course is developing tools that can be applied to improve the provision of care and health care policy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 357 or ASB 395 (Society and Drugs) OR Visiting University Student
ASB	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student
ASB	361	Human Cultural Beginnings	Biosocial evolution in the Plio-Pleistocene, emphasizing technological achievements and the relationship between technology and environment in Eurasia and Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	H	Prerequisite(s): minimum 45 hours
ASB	362	People and Plants	Offers a global survey of ethnobotany, the study of the uses of plants by people. Integrating botany, anthropology and archaeology, students learn about the roles plants have played as foods, tools, medicines and foci of religious devotion and ritual experience across human history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
ASB	368	Hunter-Gatherers	Studies of known hunting and gathering societies with the goal of developing approaches to understanding past and/or present hunting and gathering societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours
ASB	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370 OR Visiting University Student
ASB	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
ASB	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit for only ASB 374, POS 374, SBS 374 or SOC 374

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ASB	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Environment Connections in Anthropology) or ASB 494 (Ecological and Environmental Anthropology)
ASB	376	Global Health Policy	Examines the relationship among global policy, population dynamics and human health. Learn about what quantitative indicators (i.e., measures) can tell us about the scope, distribution and determinants of population health problems. The population focus organizes the course according to the broad domains of fertility, morbidity and mortality.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 376 or ASB 494 (Global Health Policy) OR Visiting University Student
ASB	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378 OR Visiting University Student
ASB	380	Language, Culture & Gender	Focuses on how language, thought and culture are intertwined in everyday practice. Students learn the central role of language in shaping and reflecting social norms and social actions cross-culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 42 hours OR Visiting University Student
ASB	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)
ASB	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
ASB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	395	Topics in Comparative Culture	In-depth study of specific topic(s) cross-culturally. Students engage with the subject matter through critical evaluation of literature, hands-on analysis and interpretation of data, and scientific writing.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 42 hours
ASB	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
ASB	412	History of Anthropology	Historical treatment of the development of the culture concept and its expression in the chief theoretical trends in anthropology between 1860 and 1950.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	

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ASB	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
ASB	442	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over "global cities" anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
ASB	443	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): ASB 100 or SSH 100; Credit is allowed for only ASB 443 or SSH 403
ASB	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
ASB	452	Commnty Partnrshps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student
ASB	455	Practicum for Soc Sci	Students integrate theoretical, methodological, ethical and experiential learning related to social science research questions.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): minimum 42 hours
ASB	457	Global Mental Health	Brief overview of the field of global mental health, an emerging field and one of vital importance for both research and evidence-based interventions. Mental health has been identified as one of the leading causes of death and disability and thus deserves a critical look at why this is occurring globally. Introduces the concept of the field of global mental health, cross-cultural problems and possible solutions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 100; Credit is allowed for only ASB 457 or ASB 498 (Global Mental Health)
ASB	462	Medical Anthro: Culture/Health	Role of culture in health, illness, and curing; health status, provider relations, and indigenous healing practices in United States ethnic groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 462 or SSH 404 OR Visiting University Student
ASB	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
ASB	464	Ethnography Mexico & Bordrinds	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
ASB	466	Peoples and Cultures of Africa	Surveys African peoples and their cultures, external contact, and changes. Meets non-Western requirement.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student

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ASB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASB	490	Earliest Cities	Archaeological research on the origins and development of the earliest urban centers around the world. Applies urban theory and comparative analysis. Compares ancient and modern cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): ASB 222 or 223 with C or better; minimum 45 hours; Credit is allowed for only ASB 490 or PUP 490
ASB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student
ASB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6	L	Prerequisite(s): Barrett Honors student
ASB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student
ASB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-7		
ASB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
ASB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	501	Professionalism	Presents students both information about the tools, opportunities and skills needed to navigate graduate training and future career success, as well as the opportunity to consider all this for themselves. Presents traditional, timeless tools for success, while also taking into account recent and profound changes to the academy that have changed how academic work is done and communicated. Also touches upon considering and preparing for a range of possible career paths for PhDs.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 501 or ASB 591 (Professionalism)
ASB	503	Medical Anthropology	Theory in medical anthropology and cross-cultural studies that illustrate particular theories. ASB 503/SSH 503.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking grad stndt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)
ASB	510	Health: Social BioculturalThry	Comparative and critical approaches to complexities of health, drawn from anthropology and related fields Focuses on theories that address how social and cultural factors shape human health.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518

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ASB	525	Intro to Material Culture	Considers how objects embody social relationships and therefore cultural meanings. Seminar explores theories that give insight into social processes such as exchange, consumption, and identity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	530	Chngng Human-Nature Relatnshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553
ASB	537	Topics/Mesoamerican Archaeolog	Explores changing organization of pre-Columbian civilizations in Mesoamerica through interpretive issues, such as regional analysis, chiefdoms, urbanism, and exchange.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	541	Theory in Sociocultural Anthro	Basic issues and concepts in sociocultural anthropology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560
ASB	567	Southwestern Archaeology	Broad coverage of Southwestern cultural developments focusing on current debates and rigorous use of archaeological data in making cultural inferences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	568	Intrasite Research Strategies	Research issues within a single site context. Topics include quantitative spatial analysis, site definition, sampling, distributional analysis, and substantive interpretation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	572	Museum Collection Management	Principles and practices of acquisition, documentation, care, and use of museum collections; registration, cataloging, and preservation methods; legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ASB 573 or HST 573
ASB	574	Exhibit Design and Development	Exhibition philosophies and development; processes of planning, designing, staging, installing, evaluating, and disassembling temporary and long-term exhibits.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	579	Critical Issues/Museum Studies	Current debates of museum practice from an anthropological perspective. Addresses issues of collection, presentation, authenticity, and authority.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASC	315	Numeracy in Technology	Contextual uses of mathematics in applied sciences. Emphasizes using mathematical methodologies to solve technology-related problems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): BAS major OR Visiting University Student
ASC	325	Physical Sciences in Tech	Physical systems and their interrelationships on technology systems. Real-world applications of physical systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Prerequisite(s): BAS major
ASC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisites: Polytechnic BAS student
ASC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Pre-requisites: Polytechnic BAS student
ASL	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
ASL	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
ASL	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student
ASL	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student

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ASL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ASL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
ASL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ASL	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	104	Bones, Stones/Human Evolution	Physical anthropology and archaeology. Evidence and processes of human evolution and of culture change. Primates. Fossil hominids and their tools. Race, variation, and heredity. Environment and human biology. Prehistoric culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	201	Epidemics and Outbreaks	Covers epidemiologic methods for the control of conditions such as infectious and chronic diseases, mental disorders, community and environmental health hazards, and unintentional injuries. Other topics include quantitative aspects of epidemiology, including data sources, measures of morbidity and mortality, evaluation of association and causality, and study design. A background in basic biology and a basic understanding of the principles of human diseases helpful in succeeding in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Credit is allowed for only ASM 201 or SSH 201 OR Visiting University Student
ASM	246	Human Origins	History of discoveries and changing interpretations of human evolution. Earliest ancestors to emergence of modern humans. Humanity's place in nature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	
ASM	275	Forensic Anthropology	Discusses the role of the forensic anthropologist in medico-legal investigations involving skeletonized human remains. Includes forensic recovery techniques, identification of decedents through skeletal and dental analysis, and reconstructing the crime scene through analysis of trauma patterns. Covers the legal aspects of forensic practice and considers historical case studies and the contributions forensic anthropologists make to mass disaster investigations and human rights abuses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	300	Anthropological Sciences Sem	Focuses on the ways in which research findings are produced by diverse theories and methods in the anthropological sciences, usually in combination with other life and physical sciences, with a strong focus on combination anthropological conceptual frameworks with quantitative methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): Anthropology BS major; Two of the following: ASB 102, 222 or 223, AML 100 or ASM 104 with a C or better OR Visiting University Student

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ASM	301	Peopling of the World	Reviews all evidence for human dispersal during the last 100,000 years, origins of language, cultures, races, and beginnings of modern humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Pre-requisite: ASM 104
ASM	313	Great Adaptations	Tiny hummingbirds and huge whales commute thousands of miles every year, male bower birds construct elaborately decorated structures to impress females, and some parasites program suicidal behavior into their hosts. These amazing (and sometimes bizarre) behaviors are all adaptations--traits that have been favored by selection because they enhance the ability of individuals to survive and reproduce successfully. The study of adaptation helps us to understand how evolution generates complexity and to understand the processes that underlie the rich diversity of life. Covers the principles of natural selection and a diverse and remarkable range of adaptations in nature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASM 313 or ASM 394 (Great Adaptations) OR Visiting University Student
ASM	332	Life & Death in Ancient Egypt	Reveals ancient Egyptian life through recent research in archaeology and physical anthropology on cemeteries, tombs, and the dead themselves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only AFR 332 (or AFS 332) or ASM 332
ASM	338	Anthropological Field Session	Anthropological field techniques, analysis of data, and preparation of field reports.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASM	341	Human Osteology	Osteology, human paleontology, and osteometry. Description and analysis of archaeological and contemporary human populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): ASM 104 with C or better; 25 minimum hours
ASM	342	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: ASM 104 (or BIO 181 or 282). Credit is allowed for only ASM 342 or BIO 327
ASM	344	Fossil Hominids	The fossil evidence for human evolution, emphasizing the concepts and methods for reconstructing the past.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisite: ASM 104
ASM	345	Disease and Human Evolution	Interaction of people and pathogens from prehistoric times to the present, with emphasis on disease as an agent of genetic selection.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 or BIO 100 or BIO 181 or BIO 182 or BIO 281 or BIO 282 OR Visiting University Student
ASM	350	Geoarchaeology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASB 222 or 223, GLG 101 or 103, or GPH 111 with C or better OR Visiting University Student
ASM	365	Doing Archaeology	Using hands-on analysis of artifacts and a mock site, this advanced introduction to archaeology acquaints the student with the field and laboratory methods applied by archaeologists, the information archaeologists use, and how they construct knowledge of the past.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 222 (or ASB 223 or 335 or 337)
ASM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	401	Health and Human Biology	Health and biology in contexts of human evolutionary history, biological and cultural variation, lab-based health status assessments, core concepts of human variation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 100 (or ASM 104); SSH 100
ASM	403	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ASM	414	Urban and Environmental Health	Integrates theory and practice of social sciences (including anthropology, demography, and human geography) to understand environmental contexts of health, particularly urban.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): ASB 100, 102, 222, 223, AML 100, ASM 104, SOS 100, 110, 111, or SSH 100 with C or better; minimum 45 hours; Credit is allowed for only ASM 414 or SOS 414 or SSH 414 OR Visiting University Student
ASM	443	Primatology	Evolution and adaptations of nonhuman primates, emphasizing social behavior. Includes material from fossil evidence and field and lab studies in behavior and biology which must be critically integrated with relevant competing theories concerning the evolution of primate behavior and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; minimum 56 hours; Credit is allowed for only ASM 443 or ASM 543 OR Visiting University Student
ASM	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ASM 301 or BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 546
ASM	450	Bioarchaeology	Surveys archaeological and physical anthropological methods and theories for evaluating skeletal and burial remains to reconstruct biocultural adaptation and lifeways.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): ASM 104
ASM	452	Dental Anthropology	Human and primate dental morphology, growth, evolution, and genetics. Within- and between-group variation. Dental pathology and behavioral-cultural-dietary factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SG	Pre-requisites: ASM 104. Credit is allowed for only ASM 552 or ASM 452
ASM	456	Infectious Disease/Human Evolu	Study of infectious disease and humanity, using evidence from anthropology, history, medicine, and ancient skeletons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 345
ASM	459	Forensic Anthropology	Applies anthropology, primarily human osteology, to legal questions, including individual identification, crime scenes, forensic reports, police work, and court testimony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 341; ASM 275; Credit is allowed for only ASM 459 or 559
ASM	460	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; ASM 341, 342, 344, 345, or 348
ASM	465	Quantificatn & Analysis Anthro	Statistical and quantitative strategies for envisioning and exploring archaeological, physical anthropological, bioarchaeological, and socialcultural data. Univariate and bivariate methods. A basic understanding of algebra is necessary to be successful in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	CS	
ASM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	503	Evolution and Medicine	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth)
ASM	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 506, ASM 506 or MCB 506
ASM	525	Primate Paleobiology	Seminar-based survey of primate evolution, focusing on comparative biology of the extant primates and the fossil record through the Miocene.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	530	Paleoanthropology	Seminar-based in-depth study of the fossil record of human evolution and its geological, environmental, and phylogenetic contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	543	Primatology	Advanced study of nonhuman primate behavioral adaptations, emphasizing comparative sociality, incorporating data on behavior and biology from field and captivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit allowed for ASM 443 or 543
ASM	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); credit is allowed for only BIO 446, ASM 446, BIO 546 or ASM 546

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ASM	548	Geoarchaeology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	552	Dental Anthropology	Evolutionary anthropology of non-human primate and human dentition and research from extant and extinct species of non-human primates and hominins.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 452 or ASM 552
ASM	555	Advanced Human Osteology	Intensive lab course covers identification of human skeletal remains and bone fragments from archaeological contexts. Emphasizes skeletal biology, variation, anatomical landmarks, determinants of age, sex, and stature.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): Anthropology graduate student OR ASM 341
ASM	560	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	565	Quantitative Archaeology	Formal methods of structuring, codifying, and analyzing data for archaeological problems. Designing research to yield data amenable to productive analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	568	GIS and Spatial Technologies	In-depth survey of spatial technologies in anthropological research, including GIS, spatial modeling, remote sensing, and image analysis and classification.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: Graduate student (degree or non-degree); Credit is allowed for only ASM, BIO, or SOS 570
ASM	573	Lithic Analysis	Analysis and interpretation of chipped stone artifacts. Focus on both techniques and underlying concepts and their application to real collections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	611	Paleopathology	Explores patterns of disease manifested in the human skeleton and differential diagnosis of infectious, metabolic, neoplastic, congenital, and other conditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); ASM 555
ASM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	111	Intro/Solar Systems Astronomy	History, properties of light, instruments, study of solar system and nearby stars. For nonscience majors. Optional lab (AST 113). Both AST 111 and AST 113 or AST 114 must be taken to secure SQ general studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	

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AST	112	Intro Stars, Galaxies & Cosmo	Structure and evolution of stars, star clusters, galaxies, cosmology. For nonscience majors. Optional lab (AST 114). Both AST 112 and AST 113 or AST 114 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	
AST	113	Astronomy Laboratory I	Astronomical observations and experiments designed to help the student become familiar with the sky, telescopes, and astronomical measurements. Both AST 111 and 113 or AST 113 and 321 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Pre- or Corequisite(s): AST 111 or 321 OR Visiting University Student
AST	114	Astronomy Laboratory II	Similar to AST 113, but material chosen to supplement AST 112 and 322. Both AST 112 and 114 or AST 114 and 322 must be taken to secure SQ General Studies credit	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Pre/Co-requisite: AST 111, 112, 321 or 322
AST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	301	Physics of Astrophysics	Develops critical physical and mathematical concepts for contemporary astrophysics. Assumes prior knowledge of algebra and calculus. Through the textbook, introduces students to a variety of physical forces in the context of astrophysical processes, including electromagnetic interactions and light, gravity and motion, interactions between light and matter in astrophysical systems, and the strong (nuclear) force responsible for the fusion processes fueling stars. Also explores related concepts such as conservation of energy and momentum and gains experience with applying these concepts using mathematical techniques to broaden understanding of the universe by working analytic problem sets and implementing simple computer programs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 170 with C or better; MAT 210 with C or better; PHY 111 with C or better; PHY 112 with C or better; PHY 113 with C or better; PHY 114 with C or better OR Visiting University Student
AST	321	Intro/Planetary/Stellar Astrop	Physical laws; celestial mechanics; properties of planets, the sun, and other stars; formation and evolution of stars and planetary systems. Both AST 113 and 321 must be taken to secure SQ General Studies credit	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better OR Visiting University Student
AST	322	Intro/Galactic/Extra/Astrophys	Evolved stars, introduction to relativity, galaxies and interstellar matter, structure and dynamics of galaxies, cosmology. Both AST 114 and 322 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121/122 with C or better or PHY 150 with C or better
AST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	421	Astrophysics I	Selected astrophysical topics, including stellar evolution, star formation, interstellar medium, galactic structure, extragalactic astronomy, high-energy astrophysics, and cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better
AST	422	Astrophysics II	Same range of astrophysical topics as for AST 421 but emphasizes different specific topics in a given year.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better OR Visiting University Student
AST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
AST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student
AST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-7		
AST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
AST	521	Stars and Interstellar Medium	Radiative transfer, atomic and molecular properties, stellar atmospheres, line profiles, nonlocal thermodynamic equilibrium, interstellar gas and dust, star formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	522	Stars & Interstellar Medium II	Stellar structure, radiative transport, boundary conditions, equations of state, nuclear reactions, opacity, nucleosynthesis, chemical evolution of the galaxy, stellar evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	523	Stars/Interstellar Medium III	Structure of the interstellar medium, gaseous nebulae, recombination theory, ionization fronts and shock waves, galactic magnetic fields, magnetohydrodynamics, molecular clouds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AST	531	Galaxies and Cosmology I	Structure and evolution of the Milky Way, stellar properties, populations and associations/clusters, interstellar medium, dark matter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	532	Galaxies and Cosmology II	Structure of galaxies and the nearby universe, Hubble sequence, kappa-space, stellar populations, active galaxies, galaxy environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	533	Galaxies and Cosmology III	Issues in modern cosmology, the distance scale, cosmological parameters, cosmological tests, cosmic background radiation, early universe, galaxy formation and evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	540	Astronomical Instrumentation	Studies a range of optical astronomical hardware including telescopes, digital detectors and instrument design and theory. Focuses on the use of CCDs in terms of operation, calibration, use, measurement, limitations, noise and signal, statistics, and preliminary understanding prior to data reduction. Discusses practical optical astronomical observing: the choice of filters and their design, planning your observing run, bringing your data home and the types of data you will need. Final class project requires the reduction and measurement of data using computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AST 540 or AST 598 (Optical Astro Tech & Data) or AST 598 (Observing Instrumentation and Data Analysis)
AST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASU	9	ASU-Uber Online Orientation	Students that are a part of the ASU & Uber Education Partnership will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, become familiar with the partnership and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	10	Connect: ASU Orientation	Students enrolled in the Starbucks College Achievement Plan will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		

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ASU	11	ASU Online Orientation	Students enrolled in ASU Online Orientation will learn about ASU and its mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	12	SDAP Online Orientation	Students enrolled in the Starbucks Degree Achievement Plan Orientation will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/studies balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	19	Jump Start	One-week program for incoming first-year students to ASU and is designed to set them up for academic success. Introduces the tools and processes that support their journey. Students learn how to connect with other students via collaborative environments.	N	LEC	N	YGB	University College	University Academic Success Programs	0		Prerequisite(s): Jump Start or SPIRIT student
ASU	42	Online Military Orientation	Active duty and veteran students enrolled in ASU 42 will explore ASU academic, veteran, and career resources, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and craft a plan balancing work, school, and life.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	120	Emerging Leaders I	Students develop in academic areas while also gaining essential career skills in creativity, problem solving, and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and ASU 120. This is the first part of a two-part curriculum which continues into the spring semester. Separate grades will be issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 120 (or ASU 150) or UNI 120 OR Visiting University Student
ASU	121	Emerging Leaders II	Students continue to develop in academic areas while gaining essential career skills in creativity, problem solving and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and this course. Second part of a two-part curriculum, which continues from the fall semester. Separate grades are issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 121 (or ASU 151) or ASU 194 (The LEAD Project II)
ASU	101-AEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace Engineering undergraduate student OR Visiting University Student
ASU	101-AMT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): undergraduate Aviation programs major
ASU	101-BME	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering student OR Visiting University Student

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ASU	101-CEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CHE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Chemical Engineering major OR Visiting University Student
ASU	101-CHS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions student OR Visiting University Student
ASU	101-CLS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): College of Integrative Sciences and Arts undergraduate student OR Visiting University Student
ASU	101-CNE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		
ASU	101-CON	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CPP	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1		Prerequisite(s): Watts College of Public Service and Community Solutions OR Visiting University Student

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ASU	101-CS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School of Journalism and Mass Communication student OR Visiting University Student
ASU	101-CSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): School of Computing, Informatics, and Decision Systems Engineering major OR Visiting University Student
ASU	101-EEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Electrical Engineering undergraduate student OR Visiting University Student
ASU	101-EGR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Engineering undergraduate student OR Visiting University Student
ASU	101-ERM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): Environmental and Resource Management student or Visiting University Student
ASU	101-FSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-GIT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): Graphic Information Technology student or Visiting University Student

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ASU	101-HDA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
ASU	101-HNR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	1		Prerequisite(s): Barrett Honors student
ASU	101-HSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): Human Systems Engineering student OR Visiting University Student
ASU	101-IEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): School of Computing, Informatics, and Decision Systems Engineering major OR Visiting University Student
ASU	101-IFT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): Information Technology student OR Visiting University Student
ASU	101-LA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Prerequisite(s): The College of Liberal Arts & Sciences student OR Visiting University Student
ASU	101-MAE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student or Aerospace Engineering undergraduate student OR Visiting University Student

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ASU	101-MEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student OR Visiting University Student
ASU	101-MSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science and Engineering BSE major OR Visiting University Student
ASU	101-NCIAS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College of Interdisciplinary Arts and Sciences undergraduate student OR Visiting University Student
ASU	101-NH	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		
ASU	101-NU	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation or Nutrition student OR Visiting University Student
ASU	101-ONL	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): ASU Online students OR Visiting University Student
ASU	101-SOS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability student OR Visiting University Student

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ASU	101-TE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College student OR Visiting University Student
ASU	101-TEM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Prerequisite(s): Technological and Entrepreneurship Management student OR Visiting University Student
ASU	101-TPS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Polytechnic School	1		Prerequisite(s): Ira A. Fulton Schools of Engineering - The Polytechnic School student OR Visiting University Student
ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student
ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student
ASU	101-WPC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1		Prerequisite(s): W.P. Carey student OR Visiting University Student
ASU	140-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	140-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	140-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	140-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	140-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		

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ASU	140-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	140-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	140-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	140-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	140-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	140-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	140-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	140-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	140-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	194-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASU	194-LA	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ASU	194-NCIAS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ASU	194-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	240-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	240-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	240-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut Solutions	0-18		
ASU	240-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	240-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	240-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	240-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	240-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	240-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	240-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	240-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	240-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	240-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	240-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	294-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	340-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	340-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	340-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut Solutions	0-18		

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ASU	340-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	340-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	340-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	340-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	340-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	340-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	340-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	340-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	340-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	340-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	340-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	394-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0.5-4		
ASU	394-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	0.5-4		
ASU	440-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	440-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	440-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	440-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	440-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	440-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	440-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	440-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	440-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	440-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	440-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	440-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	440-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	440-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ATC	230	Fundamntls of Air Traffic Mgmt	Introduces the manuals, procedures, maps, charts, and regulations used by air traffic controllers in the National Airspace System (NAS).	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 201 with C or better OR Visiting University Student
ATC	331	Tower Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in ATC towers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student
ATC	332	TRACON Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA TRACONS.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student

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ATC	333	En Route Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA ATC En Route Centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student
ATC	431	Tower Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 331 with C or better OR Visiting University Student
ATC	432	TRACON Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 332 with C or better OR Visiting University Student
ATC	433	En Route Operations & Procedur	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 333 with C or better OR Visiting University Student
ATC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
ATC	491	ATC Capstone	Overview of problem solution tools, quality metrics, and current technology initiatives related to air traffic management and related industry problems in a project environment. Student projects focus on airport and airspace requirements. Student teams work with partners from industry, government, and academia to define project objectives and work toward a formal recommendation to help solve the specified problem. Class discussions focus on project management, organizational structures, strategic initiatives, strategy implementation and execution. Uses review and analysis of current industry problems and resolutions to provide examples of practical solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): ATC 431 with C or better if completed; ATC 432 with C or better if completed; ATC 433 with C or better if completed
ATC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
ATE	242	Intro to Arch Technology	Materials and methods of construction. Aesthetic, code and construction costs. Exposure to building information management (BIM).	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies major. Corequisite(s): ALA 226
ATE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ATE	361	Architectural Technology I	Introduces load distribution on structures. Static analysis of determinant beams, trusses, arches, and rigid frames. Computer applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 321 OR Visiting University Student
ATE	362	Architectural Technology II	Strength of materials. Stresses in beams and columns. Thermal effects on structures. Analysis, design, and detailing of wood structural systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 361 with C or better
ATE	451	Building Systems I	Principles of solar radiation, heat and moisture transfer, and environmental control systems as form influences. Energy-conscious design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Co-requisites: ADE 421
ATE	452	Architectural Technology III	Architectural design implications of heating, ventilation, and air conditioning systems. Principles of lighting, daylighting, and acoustics, and their applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 362 with C or better; Corequisite(s): ADE 422
ATE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ATE	521	Building Environmental Science	Scientific principles relating to comfort and environmental control. Heat and moisture transfer. Solar/natural energies for heating, cooling, and lighting.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	550	Passive Heating and Cooling	Theory, analysis, and application of passive and low-energy systems in order to maximize comfort and minimize energy consumption in buildings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	553	Architectural Technology IV	Design and integration of building systems, including mechanical, electrical, plumbing, security, communications, fire protection, and transportation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student; Corequisite(s): ADE 521; ATE 563
ATE	556	Architectural Technology V	Comprehensive design development through the understanding and integration of building materials and systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 522; APH 505
ATE	560	Building Energy Analysis	Computer simulation of building thermal behavior. Software review. Detailed study of selected simulation models using case study projects.	N	LAB	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	562	Experimental Evaluation	Instrumentation, measurement and computational techniques for analysis of building components, and assessment of thermal and luminous performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	563	Architectural Technology VI	Analysis, design, and detailing of steel buildings and frames. Lateral analysis of small rigid and braced frame systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student

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ATE	582	Environmental Control Systems	Heating, ventilation, and air-conditioning systems. Loads, psychrometrics, refrigeration cycle, air/water distribution, controls, energy performance standards, and utility rates.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ATE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ATP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ATP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7		
BCH	341	Physical Chem with Bio Focus	Thermodynamics, equilibrium, states of matter, solutions and chemical kinetics with a focus on biological systems. For students in biochemical, premedical, biomedical and educational curricula.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114 or 116 or 118 with C or better; CHM 231 or 233 or 333 with C or better; MAT 251 or 265 or 270 with C or better; PHY 101 or 112 or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student
BCH	361	Principles of Biochemistry	Advanced consideration of the structures, properties, and functions of proteins, enzymes, nucleic acids, carbohydrates, and lipids; principles and theory of the utilization and synthesis of these materials by living systems, and the relationship of these processes to energy production and utilization. The course is recommended for pre-health students. No credit for Biochemistry majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 231 with C or better OR Pre- or corequisite(s): CHM 234 or CHM 334 with C or better if completed OR Visiting University Student
BCH	367	Elementary Biochemistry Lab	Qualitative/quantitative analyses of constituents of biological systems, enzyme activity measurements and metabolic studies.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 361 or LSC 366 with C or better if completed OR Visiting University Student
BCH	371	Modern Concepts Biochemist	Detailed examination of the chemical structure, conformation, and function of proteins, carbohydrates, lipids, and nucleotides; analysis of the energetics, enzymes, and control of the metabolic pathways by which these molecules are degraded or synthesized.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 182; CHM 234; CHM 238 OR Visiting University Student
BCH	372	Modern Concepts Biochemist Lab	Analyzes protein structure, purification and function using spectroscopic, chromatographic, electrophoretic and other methods.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BCH 371 OR Visiting University Student

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BCH	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects. May be repeated for total of 6 semester hours.	N	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	461	General Biochemistry	Structure, chemistry, and metabolism of biomolecules and their role in the biochemical processes of living organisms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; Corequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better if completed OR Visiting University Student
BCH	462	General Biochemistry	Continuation of BCH 461.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 461 with C or better OR Visiting University Student
BCH	463	Biophysical Chemistry	Principles of physical chemistry as applied to biological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better OR Visiting University Student
BCH	467	Analytical Biochemistry Lab	Quantitative analysis, separation and purification of biological molecules. Applies chemical and physical methods to the characterization of biological macromolecules.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Pre- or corequisite(s): BCH 462 with C or better if completed OR Visiting University Student
BCH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
BCH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
BCH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student
BCH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	501	Current Topics in Biochemistry	-	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: Graduate students (degree and nondegree); Credit is allowed for only BCH or CHM 520
BCH	561	Adv Topics in Biochemistry	Topics selected from emerging areas of biochemistry based primarily on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	568	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BCH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCS	101	Elementary Serbo-Croatian	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	102	Elementary Serbo-Croatian	See BCS 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	201	Intermediate Serbo-Croatian	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	202	Intermediate Serbo-Croatian	See BCS 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	311	Bos/Croat/Serb Comp&Conv I	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 202 with C or better; Credit is allowed for only BCS 311 or BCS 394 (Serbo-Croatian Conv & Comp I) or SLC 394 (Serbo-Croatian Comp/Conv) OR Visiting University Student
BCS	312	Bos/Croat/Serb Comp&Conv II	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 311 with C or better; Credit is allowed for only BCS 312 or BCS 394 (Bosnian/Croatian/Serbian Composition and Conversation II)
BCS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
BCS	495	Serbo-Croatian/Heritage Speakr	Generates professional proficiency by developing communicative and written competency in standard literary Serbo-Croatian.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		
BDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		
BDE	702	Biological Design II	Emphasizes the integrative areas of computational bioinformatics, systems biology, and synthetic biology, and their application in biomedical research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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BDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter, Transport & Energy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	100	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	108	Concepts in Plant Biology	Introduces concepts of plant biology that are of human relevance using commercially important, edible, and medicinal plants as examples. Not for majors in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	109	Field Natural History of AZ	Studies the common plants and animals of Arizona including their distribution, adaptations, behavior and ecology. Introduces basic field techniques used in the study of natural history. Off-campus field trips. Cannot be used for major credit in the biological sciences.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	
BIO	112	Discovery - Why Sex?	"Why?" is a question that animates the youngest of children to the most seasoned of scientists. The acts of asking and answering "Why?" highlight the integrated nature of scientific knowledge and discovery. Demonstrates scientific disciplines are not walled cities in which knowledge is neatly segregated from lines of inquiry and knowledge in other disciplines. Instead, scientific concepts weave throughout and between disciplines and scientists increasingly rely on colleagues from different scientific fields to find answers to scientific questions. So our journey to find responses to the question "Why Sex?" takes us not just to biology, but also to earth science and to physics. Along the way, scientists are linked together not only through concepts that crosscut the disciplines, but also in their reliance upon key scientific skills such as the ability to observe, think critically, measure, gather data and communicate their findings.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Credit is allowed for only BIO 112 or BIO 194 (Discovery: Why Sex?) OR Visiting University Student
BIO	113	Dinosaurs	Principles of evolution, ecology, behavior, anatomy and physiology using dinosaurs and other extinct life as case studies. Geological processes and the fossil record. Cannot be used for major credit in the biological sciences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Credit is allowed for only BIO 113 or LSC 294 t 2 (Dinosaurs)
BIO	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
BIO	140	Grk&Lat Roots Biosctfc Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
BIO	151	Biological Thinking	The science behind the science of life. Masters the core concepts of modern biology, understands the scientific discoveries that lie behind those concepts, and develops scientific reasoning skills so that students can contribute discoveries of their own.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): Life Sciences student; Mathematics Placement Test with a score below 50 or ALEKS score below 61; Credit is allowed for only BIO 100 or BIO 151
BIO	160	Intro. to Anatomy & Physiology	Terminology and essential concepts in human anatomy and physiology, as well as the structure and function of the human body. Designed for students in the health-related professions. Acquaints the student with human anatomy, structure and function, and basic disease concepts. Organizes and presents course concepts by organ systems, and the laboratory component of the course emphasizes human structure and function. The course has 3 contact hours for lecture and 2 contact hours for lab per week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	
BIO	181	General Biology I	Biological concepts emphasizing principles and the interplay of structure and function at the molecular, cellular, and organismal levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Credit is allowed for only BIO 181 or BIO 281 or BIO 282 OR Visiting University Student
BIO	182	General Biology II	Biological concepts emphasizing principles and the interplay of structure and function at the organismal, population, and community levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 181 with C or better; Credit is allowed for only BIO 182 or BIO 281 or BIO 282 OR Visiting University Student
BIO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	201	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	

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BIO	202	Human Anatomy & Physiology II	Studies the structure and function of the human body. Topics include cardiovascular, respiratory, lymphatic/immune, endocrine, renal, digestive, and reproductive systems. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 201 with C or better OR Visiting University Student
BIO	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function--e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 230 or BMJ 230
BIO	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introduction to Evolutionary Medicine) OR Visiting University Student
BIO	281	ConceptualApproachBioMajors I	Covers the themes and concepts that underlie the molecular biology of cells and multicellular organisms as well as the biological processes that shape the diversity of organisms on our planet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): School of Life Sciences student; BIO 182 or BIO 181 OR Visiting University Student
BIO	282	ConceptualApproachBioMajors II	Builds upon established conceptual foundations, covers the themes and concepts underlying organismal biology, with an emphasis on physiology and ecology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): School of Life Sciences student; BIO 281 with C or better; Credit is allowed for only BIO 181 or BIO 182 or BIO 282 OR Visiting University Student
BIO	289	SOLUR Researcher	Students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development in this seminar. Enriches individual lab research experiences students by bringing them together in a peer-community environment. Introduces students to the resources they have at their disposal (e.g. on campus, online) to facilitate research productivity and career planning. Rigorously evaluates their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): School of Life Sciences major; minimum 3.00 GPA OR Corequisite(s): BIO 310, or BIO 494 (Advanced Study Practicum), or BIO/HPS/MBB/MIC 484/492/493/495/496/499 OR Visiting University Student
BIO	293	Health Sciences Workplace	Provides exposure to the health science workplace and helps students explore the full range of careers that are open to those who major at the undergraduate level in the health sciences including managerial and administrative aspects. Includes short presentations by professionals in a variety of fields, including biotechnology and bioenterprise, business and the health sciences. Ample opportunities for questions and personal interactions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		
BIO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	301	Field Natural History	Organisms and their natural environment. Cannot be used for major credit in the biological sciences. Both BIO 300 and BIO 301 must be taken to secure SQ General Studies credit	N	PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1	SG	Pre- or corequisite(s): BIO 300 or LSC 310 with C or better if completed
BIO	302	Cancer-Mother of All Diseases	History of cancer; disease statistics; pathogenesis; diagnosis, treatment and prevention; case studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s) with C or better: BIO 181, BIO 182, BIO 201, BIO 281, BIO 282, MIC 205, or MIC 220 OR Visiting University Student
BIO	303	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s): BIO 181 (or BIO 188) with C or better; BIO 182 (or BIO 187 or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 303 or ENV 300 or PLB 300
BIO	304	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
BIO	305	Biology Behind the Crime Scene	Explores biological technology behind forensic techniques like fingerprinting, Polymerase Chain Reaction (PCR), and paternity testing.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Pre-requisites: Minimum Sophomore standing

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BIO	306	Modes of Biological Thought	Involves students in the process of biological discovery to examine how we identify truth in biological science.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ENG 101 or 105 with C or better; BIO 181 (or BIO 188) and BIO 182 (or BIO 187) with C or better OR Visiting University Student
BIO	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
BIO	309	Plant Anatomy	Development and mature structure of tissues of vascular plants; patterns and modifications of the leaf, stem, root, and flower.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	310	Special Problems & Techniques	Qualified undergraduates may investigate a specific biological problem under the direction of a faculty member.	N	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	311	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student
BIO	312	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
BIO	313	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
BIO	314	Rsch Colloquium/Biology/Soc I	Develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): Biological Sciences (Biology and Society) BS majors
BIO	315	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Minimum 35 hours; Credit is allowed for only ENG 370 or BIO 315
BIO	316	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
BIO	317	History of Science	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student
BIO	318	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
BIO	320	Fundamentals of Ecology	Organization, functioning, and development of ecological systems; energy flow; biogeochemical cycling; environmental relations; population dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better; CHM 116 or 118 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	321	Introductory Ecology Lab	Lab and field observations and experiments to test current concepts and theories in ecology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 320 with C or better if completed OR Visiting University Student
BIO	322	Conservation of Biodiversity	Species-level approaches to the protection, management, and restoration of biological resources from scientific and policy perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	323	Ecosys Restoration&Management	Ecosystem-level approaches to the protection, management, and restoration of biota and ecosystem processes from local to global scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	324	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student

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BIO	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 100, BIO 182, BIO 282, GLG 101, or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, or 114 with C or better; Credit is allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
BIO	327	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ASM 104, BIO 181 or 282 with C or better; Credit is allowed for only ASM 342 or BIO 327
BIO	331	Animal Behavior	Theories of evolutionary, genetic, physiological, and ecological bases of animal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for only BIO 331 or LSC 331 OR Visiting University Student
BIO	340	General Genetics	Science of heredity and variation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prereqs w/C or btr: non-Molec Biosci&Biotec maj; BIO 181; BIO 182 OR non-Molec Biosci&Biotec maj; BIO 181, BIO 281 or MBB 245; MBB 247 OR non-Molec Biosci&Biotec maj; BIO 281; BIO 282; Credit allowed for BIO 340 or MBB 347 OR Visiting University Student
BIO	342	General Genetics Laboratory	Explores general principles of inheritance with special reference to Mendelian, molecular, and computational genetics via lab experiments.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 340 with C or better if completed OR Visiting University Student
BIO	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): MBB 347 or BIO 340 with C or better; Credit is allowed for only BIO 343 or MBB 343
BIO	345	Evolution	Processes of adaptive change and speciation in sexual populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340, LSC 347, or MBB 347 with C or better OR Visiting University Student
BIO	351	Developmental Biology	Principles of developmental biology, including the development of major organ systems and their underlying molecular and cellular mechanisms. Illustrated mainly using vertebrate examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better OR Visiting University Student
BIO	352	Lab in Vertebrate Dev Anatomy	Morphology of representative embryonic and adult vertebrates.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Pre- or corequisite(s): BIO 351 with C or better OR Visiting University Student
BIO	353	Cell Biology	Surveys major topics in cell biology, including structural, biochemical, and molecular aspects of cell function.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182; CHM 116 or 118 OR BIO 281; BIO 282; CHM 116 or 118 OR Biomedical Engineering BSE major; BIO 181; CHM 114 or 116 OR Visiting University Student
BIO	354	Cell Biology Laboratory	Investigational lab using modern molecular and cellular techniques to analyze molecular, biochemical, and anatomical traits of cells.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BIO	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
BIO	357	Cell & Molecular Bio Lab	Laboratory concepts and techniques central to cell biology and molecular biology emphasize principles and the interplay of these two sub disciplines. Intended for life sciences, biology, and health-related science majors.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 with C or better; Credit is allowed for only BIO 357 or BIO 394 (Cell and Molecular Biology Laboratory) OR Visiting University Student

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BIO	360	Animal Physiology	Principles and mechanisms of physiological regulation in animals, with a focus on humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	361	Animal Physiology Laboratory	Experimental lab studies of physiological mechanisms in animals and model systems.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 360 with C or better if completed OR Visiting University Student
BIO	370	Vertebrate Zoology	Characteristics, classification, evolution, and natural history of the major groups of vertebrate animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	385	Comparat Invertebrate Zoology	Characteristics, life cycles, adaptations, and evolution of invertebrate animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	386	General Entomology	Specialized focus on form, activities, and classification of insects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	389	SOLUR Scholar	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): Life Sciences major; minimum 3.00 GPA OR Visiting University Student
BIO	390	Medical/Dental Field Placement	Field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
BIO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
BIO	403	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth) OR Visiting University Student
BIO	407	Novel Ecosystems	This primarily field course challenges preconceptions and received wisdom. Visit and discuss a variety of sites within about one hour's drive of ASU Tempe. These sites range from apparently relict desert mountain parks to effluent-dominated wetlands, active agricultural fields, newer and older commercial and residential areas, recreational ponds and (presently) abandoned vacant lots.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320; BIO 322 or 323 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 407 or BIO 494 (Novel Ecosystems) OR Visiting University Student

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BIO	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
BIO	410	Techniques ConservationBio&Eco	Lecture, field, and laboratory experience in techniques used in conservation biology and ecology. Course is modular, with each module instructed by a discipline-specific expert (e.g., plant ecologist, mammal conservationist, soil ecologist).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; BIO 320 with C or better; BIO 322 or BIO 323 with C or better
BIO	411	Quant Methods in Conserv & Eco	Quantitative methods in conservation ecology; develop mathematical models of ecological and natural resource systems and use the models to better understand and inform management of ecosystems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 320 or 322 with C or better; BIO 415 or STP 226 or STP 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
BIO	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412
BIO	414	Rsch Colloquium/Bio/Society II	Further develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): BIO 314 with C or better OR Visiting University Student
BIO	415	Biometry	Statistical methods applied to biological problems, design of experiments, estimation, significance, analysis of variance, regression, correlation, chi square, and bioassay; the use of computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	CS	Prerequisite(s): MAT 210, 251, 265 or 270 with C or better, or a 200 level statistics course (STP 226, or 231) with C or better OR Visiting University Student
BIO	416	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only for BIO 416 or HPS 410 OR Visiting University Student
BIO	417	Experimental Design	Fixed, random, mixed models; crossed and nested factorial designs; balanced and unbalanced data; completely randomized, blocked, repeated measure designs; ANCOVA.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 415 with C or better
BIO	418	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: ABS 370 or BIO 320. Credit is allowed for only ABS 434 or BIO 418
BIO	419	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 or PLB 308 with C or better; Credit is allowed for only BIO 419 or PLB 419 or BIO 519 or PLB 519
BIO	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student
BIO	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student
BIO	422	Ecosystem Ecology	Explores the structure, development and dynamics of ecosystems, with a focus on the exchange of energy and materials between the atmosphere, soils, water, biosphere, and anthro-sphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 422 or BIO 494 (Ecosystem Ecology)
BIO	423	Population & Community Ecology	Organization and dynamics of population and communities. Theoretical and empirical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better
BIO	425	Marine Conservation Ecology	Marine conservation biology is increasingly important for society, as evidenced by frequent media coverage and the recent report by the U.S. Commission on Ocean Policy. Expect exposure to multiple perspectives on important conservation issues in the marine environment and gain valuable experience in critical thinking, communication skills, and the use of science in effective debate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	426	Limnology	Structure and function of aquatic ecosystems, with emphasis on freshwater lakes and streams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3-4	L	Prerequisite(s): BIO 320 with C or better

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BIO	427	Fire	A survey of fire on Earth—history, ecology, behavior, and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
BIO	430	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
BIO	431	Genes, Development & Evolution	Contribution of genes, developmental processes, and evolution to pattern of phenotypic variation, including disease.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	432	Why People Steal,Cheat,and Lie	Explores the ecological and evolutionary causes of selfishness and cooperation in human societies. Students apply biological models to predict patterns of behavior in human populations and evaluate these models with empirical data. Develops new scientific and philosophical perspectives on human behavior by integrating ideas from complementary disciplines, including biology, psychology, anthropology, criminology, sociology and philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB	Prerequisite(s): BIO 182 or 282; Credit is allowed for only BIO 432 or BIO 494 (Why People Steal, Cheat, and Lie) OR Visiting University Student
BIO	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: MAT 117 or higher or SOS 101; junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Servcs:People&Nature)
BIO	435	Rsch Technique/Animal Behavior	Experimental and field studies of animal behavior; description and quantification of animal behavior and interpretation of behavior within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better
BIO	436	Sociobiology & Behavioral Ecol	Surveys animal and human social behavior examined from ecological and evolutionary perspectives using theoretical and empirical constructs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better OR Visiting University Student
BIO	439	Computing for Research	Works mainly with command-line programs for data analysis, with a major focus on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class trouble-shooting and for out-of-class assignments where students work on problem-solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for BIO 439 or BIO 539 or EVO 539 or MCB 539 or BIO 498 (Computing Rsrch) or BIO 598 (Computing Rsrch) or EVO 598 (Computing Rsrch) or MCB 598 (Computing Rsrch)
BIO	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or CBS 540 or MBB 440 or MCB 540
BIO	443	Appld Molecular Genetics/Genom	Nature and function of the gene; emphasizes the molecular genetic disease states; molecular biology; regulation of gene expression; genomics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): LSC 347 with C or better; CHM 233 with C or better; CHM 237 with C or better
BIO	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ASM 301 or BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 446 or BIO 546

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BIO	450	Advanced Developmental Biology	Current concepts and experimental methods involving differentiation and biosynthetic activities of cells and organisms, with examples from microorganisms, plants, and animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 351 with C or better
BIO	451	Cell Biotech: Cell Culture	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they will collect data, do analysis and prepare the results for a final project presentation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 343, BIO 353, MBB 343 or MBB 347 with C or better; Credit is allowed for only BIO 451 or BIO 551 OR Visiting University Student
BIO	453	Animal Histology	Microscopic study of animal tissues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 201, 353, or 360 or MIC 220
BIO	461	Comparative Animal Physiology	A comparative approach to understanding the function of animal physiological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	462	Endocrine Physiology	Mechanisms of action of hormones; endocrine control of homeostasis, growth, stress responses, and reproduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	465	Neurophysiology	Detailed treatment of cellular and organismal neurophysiology and nervous system function.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	467	Neurobiology	Introduces major areas of neurobiology, from fundamental cellular and molecular processes through systems neuroscience and neural bases of behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	471	Ornithology	Biology of birds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	472	Mammalogy	Classification, structure, habits, ecology, and distribution of mammals, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	474	Herpetology	Classification, structure, habits, ecology and distribution of reptiles and amphibians, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	475	Adv. Human Anatomy	Continues study of the human body. Specifically, explores and differentiates anatomic concepts at an advanced level. Additional didactic assignments designed to facilitate critical evaluation of pathophysiological principles and common misconceptions of human physiology, as well as a capstone presentation project. Grades are determined by class exercises, presentations and a series of critical thinking exercises.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR BIO 360 with C or better; Credit is allowed for only BIO 475 or BIO 494 (Advanced Study Practicum: Anatomy & Physiology) OR Visiting University Student
BIO	476	Cellular & Molecular Neuro	Explores the cellular and molecular neurobiology of the central nervous system across many levels (genetic, molecular, cellular and network) by examining the principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	477	Systems & Behavioral Neuro	Explores the functions of the nervous system across many levels (genetic, molecular, cellular and network) in regard to how neural systems produce behavior, and how problems (e.g., injury, disease) of the CNS arise and can be overcome. Examines principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	480	Methods of Teaching Biology	Methods of instruction, experimentation, organization, and presentation of appropriate content in biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better

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BIO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
BIO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
BIO	489	SOLUR Fellow	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): School of Life Sciences majors; minimum 3.50 GPA OR Visiting University Student
BIO	490	Surgical Field Placement	Advanced field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 390 with C or better OR Visiting University Student
BIO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
BIO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student
BIO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
BIO	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
BIO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
BIO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	502	Trans Electron Microscopy	Theory, use, and methods of preparing biological materials for transmission electron microscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Pre/Co-requisites: BIO 504
BIO	503	Bioimaging Lab	Provides a fundamental understanding of light-based microscopy through the training and use of instruments contained within the SOLS Keck Bioimaging laboratory. Examines the use of bright field, contrast, epi-fluorescent, total internal reflective fluorescence (TIRF), confocal, multiphoton and atomic force microscopy and how they are applied to various research applications. Additional focus given toward image ethics, analysis, and presentation using programs such as Adobe Photoshop and ImageJ. During the second half of the semester, students propose and develop an experimental project, based on their graduate research, in which they collect data, do analysis, and prepare results for a final project presentation.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre/Co-requisites: BIO 504, MCB 504, or BIO 598 Special Topic: Bioimaging Current Techniques; Credit is allowed for only BIO or MCB 503
BIO	504	Bioimaging	Lecture survey of modern techniques for imaging tissues, cells, and macromolecules, including light microscopy (e.g. video, fluorescence, confocal, multiphoton, single molecule), electron microscopy (e.g. transmission, scanning, cryogenic, tomographic) and ancillary techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO or MCB 504
BIO	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	6		Pre-requisites: Graduate student; Credit is allowed for only ASM, BIO or MCB 506

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BIO	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)
BIO	510	Evolution and Medicine	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth)
BIO	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
BIO	516	Foundations of Bioethics	Advanced introduction to the theoretical and normative foundations of the field of bioethics.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
BIO	518	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518 or HPS or HST 516
BIO	519	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 519, PLB 419 or PLB 519
BIO	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521
BIO	522	Populations: Evolutionary Ecol	Principles of population biology and community ecology within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum & Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum & Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum & Env Sys)
BIO	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
BIO	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
BIO	530	Scientific Teaching	Guides graduate students to better understand issues related to undergraduate learning in science courses, and prepares students to become more effective teachers. Topics focus on emerging research that supports active and student-centered learning activities as well as methods that include the 5Es, concept-mapping, and "backward" design. Students reflect on their own teaching philosophy, and begin building an ePortfolio documenting and validating their ability to teach effectively.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 530 or 591 (Scientific Teaching)
BIO	531	Adv. Scientific Teaching	Further develops the teaching abilities of graduate students by applying knowledge into the more advanced teaching activities including large class sizes, diverse student populations, online delivery, and technology-integrated teaching. Students have more in-depth practice fully developing lesson plans, assessments and other teaching activities based on the concepts of evidence-based teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 531 or BIO 594 (Advanced Scientific Teaching)
BIO	532	Recent Papers in Discipline	Discipline-based education research is a newly emerging scholarly field that combines the knowledge of teaching and learning with the deep knowledge of discipline-specific science content. Currently, discipline-based education research is being used to transform the way we teach undergraduate science courses. Readings in recent papers in the field of discipline-based education research, spanning the disciplines of physics, chemistry, geosciences and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
BIO	543	Molecular Genetics & Genomics	Advanced study of genetics, focusing on the molecular basis of inheritance and gene expression in eukaryotes and prokaryotes, and study of genomics, or the high-throughput analysis of the entire organism's genes and their function. Knowledge of general genetics recommended before registering for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	545	Populations Evolution Genetics	Mathematical models in the description and analysis of the genetics of populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 446, 546, BIO 446 or 546
BIO	549	Phylogenetic Biology&Analysis	Basic theory and general concepts of phylogenetic inference as well as practical, hands-on experience with many of the commonly used methods for inferring and interpreting phylogenetic trees.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	551	Cell Biotechnology	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they collect data, do analysis and prepare the results for a final project presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 451 or BIO 551 or BIO 598 (Cell Biotechnology Laboratory)
BIO	552	Developmental Genetics	Genetic approaches to the analysis of development during the life cycle of eukaryotic organisms, and the role of genes in the unfolding of the differentiated phenotype.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
BIO	564	Cellular Physiology & Signaling	Emphasizes the molecular basis for cell structure, function and intercellular signaling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568

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BIO	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM, BIO, or SOS 570
BIO	571	Evolutionary Medicine Capstone	Provides a culminating experience in which students bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that students carry out to demonstrate their ability to integrate the core concepts of evolutionary thinking and analysis; and places disease in the context of changing environments, exposures and the encompassing ecology of life in which an individual is embedded. Demonstrations weave perspectives from biology, anthropology, public health and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Evolutionary Medicine graduate certificate student
BIO	578	Environmental Leadership & Com	America remains inactive about the ramifications of critical societal challenges such as climate change, environmental hazards and living sustainably, and less than 2% of Congress has any professional background in science. Environmental issues are no longer local and solutions cannot remain provincial. Scientists must become envoys of knowledge that is global; science is now part of an unavoidable and contentious public discussion on these issues, and we need it to catalyze solutions. Increasingly, scientists who are communicators are moving into positions of leadership, engaging with society and changing their academic institutions from within. This seminar provides leadership training and important skills for early career scientists to communicate science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 578 or BIO 591 (Environmental Leadership and Communication)
BIO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	610	Intro Resp Conduct Research	Introduces ethical and regulatory issues in the nine core areas of responsible conduct of research. Discusses real and hypothetical cases that tie broad ethical considerations to current concern of scientists.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	611	Topics Resp Conduct Research	Explores a single topic in the responsible conduct of research in depth. Topic changes depending on current issues in responsible conduct of research as well as the interests of the instructor and students. Possible topics include: responsible authorship; conflicts of interest; human subjects research; and misconduct, data management, and academic integrity.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
BIO	614	Biometry	Fundamental concepts of statistics and how to apply a range of standard statistical tools to the analysis of biological data. Uses the software applications SPSS and R to carry out these tests, and how to identify the particular situations in which each test is appropriate. Topics include: basic probability, descriptive statistics, estimation, hypothesis testing, t-tests, analysis of variance, regression, correlation, chi-square analysis, randomization tests, and nonparametric statistics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
BIO	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO or HPS 620
BIO	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	100M	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	130M	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	201M	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SG	
BIS	343	Social Processes in Orgs	Examines the interdisciplinary nature of social processes and human interactions across a number of different organizational contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
BIS	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student
BIS	350	Diversity and Organizations	Critical interdisciplinary analysis of individual, cultural, and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours. Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
BIS	353	Interdisciplinary Leadership	Offers interdisciplinary perspectives on the theory and practice of leadership in a range of organizational environments	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing
BIS	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
BLE	220	Foundations of SEI	Examines current educational practices and historical legal issues. Prepares teacher candidates with a provisional Structured English Immersion endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Educational Studies BAE major
BLE	221	Theories Acquiring& Learn Lang	Languages are tools people use and learn to use for a variety of purposes. While nearly all people naturally acquire at least one language in their lifetime, the construct of bilingualism or multilingualism can occur as either an elective or a forced process. The context or the decision that leads to second or multiple language learning can have profound effects on the way and the extent to which those languages are learned. Examines the variables affecting both language acquisition and language learning as well as some methods to better facilitate these processes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student
BLE	322	Reading Methods BLE/ESL	Instructional/assessment strategies, including systematic, research-based phonics, vocabulary, comprehension, spelling, writing, phonemic writing in Spanish/English.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	324	Soc Studies/Diverse Lang Clsm	Social studies education standards, curriculum, and instructional strategies for English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	335	Language Diversity-Classrooms	Issues in sociolinguistics and language variation in schools with a focus on classroom interaction, instruction, curriculum, assessment, and language policy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
BLE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
BLE	396	Clinical Experience I	Applies course content in BLE/ESL elementary education classrooms grades 1-8; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	397	Clinical Experience II	Applies course content in BLE/ESL elementary education classrooms grades 1-8; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	400	Prin of Language Minority Educ	Overview of philosophical and theoretical foundations of bilingual education and ESL models of instruction. Other topics include significant legislative and judicial measures.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404

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BLE	407	SEI for Secondary Students	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the 7-12 classroom.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program
BLE	408	SEI for Linguistically Diverse	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the K-8 classroom.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program
BLE	411	Sci Curr Instr Assess BLE/ESL	Methods, management strategies, and assessment procedures for teaching science to BLE/ESL students in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	412	Math Curr Instr Assess BLE/ESL	Teaching, management, and assessment of mathematics in K-8 BLE/ESL settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	413	Language Arts in BLE/ESL Sett	Literacy and language arts instruction; assessment of reading and writing; transition literacy skills, particularly critical reading of content.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	478	Student Teaching: BLE/ESL EED	Student teaching in BLE/ESL elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
BLE	481	Reading Practicum	Applies concepts from BLE 414. Supervised school-based experiences in teaching reading to BLE/ESL students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	511	Intro/Language Minority Educ	Historical, philosophical, theoretical, and pedagogical foundations of language minority education in the United States.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	520	ESL for Children	Examines approaches to second-language development for children congruent with recent research in second-language acquisition in children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	522	Literacy/Biliteracy Developmnt	Acquaints teachers with first- and second-language literacy research, practice, and assessment in elementary school settings (Spanish-English emphasis)	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	529	Lang Assess & Eval ESL/BLE St	Assessment and evaluation of linguistic minorities; test theory, score interpretation; culturally responsive assessment; assessment of language and school achievement.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	534	Lang Plcy Pwr Past Present	Examines theories, concepts and findings in language policy and planning for educating multilingual learners locally, nationally and globally.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	535	Sociolinguistic Iss/Bilingual	Surveys major theoretical issues (e.g., language situations, communicative competence, language attitudes) interrelating language, social processes, and bilingual education.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	536	Ed for Social Transformation	Theoretical and practical issues concerning education for social transformation. Recognizes features, reflections, affordances and challenges to transforming education through interactions and exchanges. Also considers assessment frameworks to assist educating multilingual learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	537	Linguistics for Educators	Main theories and approaches within linguistics and their application to language learners in educational contexts. Areas include phonetics, phonology, morphology, syntax and translanguaging.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510
BLE	538	Mthd Educate Mltilingual Lnrs	Applied methods and pedagogies for educating multilingual learners. Includes pedagogies supported by second language acquisition (including multilingual perspectives); multiteracies; and bilingualism including heteroglossic bilingual instructional practices, translanguaging practices, critical multilingual awareness and complex language/literacy use.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	561	Parent Involvement in Language	Examines issues, approaches, and strategies for improving parental and community involvement in the schooling of language minority children and youth.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; minimum 9 hours in English as a Second Language MA program

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BLE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	597	Capstone	Reflective, experience-based integration of theory and practice; professional development for individuals working with English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MA English as a Second Language major
BLE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BMD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMD	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502
BMD	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMD	510	Curr Perspectives BMD Diagnost	Seminar course using external speakers who review the current state of the biomedical diagnostics industry in terms of technology, regulation or legal issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA

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BMD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511
BMD	513	Prin Diag Tech Immunoassays	Provides a detailed understanding of the theory and applications of advanced diagnostic assay systems and devices. Students gain knowledge in immunoassay design and validation with particular attention to the manipulation of the immune system for disease recognition. This module assumes no former knowledge of immunoassays, but some knowledge would be advantageous.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 513 or BMD 598 (Principles of Diagnostic Technology 2: Immunology)
BMD	514	Molecular Diagnostics	Survey course covering topics such as multiple types of analytes including DNA, RNA and protein; a multitude of disease application areas; major molecular diagnostic platforms; development of molecular diagnostics tests; sample preparation; and future prospects for molecular diagnostics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree or nondegree-seeking graduate student; Credit is allowed for only BMD 514 or BMD 598 (Molecular Diagnostics)
BMD	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550
BMD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617
BMD	667	Regulation Medical Diagnostics	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate

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BMD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	100	Intro to Biomed Engineering	Introduces engineering design methods, experimental practices, data gathering, presentation and statistical analysis. Lecture/labs focus on device design and application, including hands-on experience.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major OR Visiting University Student
BME	111	Engr Perspectives/Biologic Sys	Biological concepts for the emerging engineer. Introduces biological and earth systems engineering, materials, structures, fluid mechanics, bioelectricity, and the dynamic, nonlinear nature of nature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering student OR Visiting University Student
BME	121	Programming in BME	Introduces computer programming in the context of scientific and engineering problem solving. Topics include loops, functions, pointers, data structures, and algorithms in the context of a biomedical problem. Culminates in an introduction to object-oriented programming, with a look at modern wireless (iPad and iPhone) devices for biomedical applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite: Biomedical Engineering student; Pre/Co-requisite: MAT 265 or MAT 270
BME	122	Statistics for Biomedical Eng	Introduces statistics tests in the context of common biomedical experiments. Students perform basic linear regression and correlation analyses, experiment using power analysis, generate descriptive statistics, and perform statistical tests using statistical software.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering major; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
BME	182	Biomedical Prod Dsgn & Dev I	Continuation of hands-on training and implementation of medical device product design and development skills; FDA-regulated U.S. and global medical device healthcare markets and opportunities, business development in regulated environments, medical product and project management planning, exempt and Class I medical devices, medical product component and device levels, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best-industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed OR Visiting University Student
BME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	200	Conservation Principles in BME	Applies bioengineering analysis and problem solving of mass, energy, and charge balances to medical and biological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prereq(s): Biomedical Engineering major; BIO 181 or BME 111 w/C or better; CHM 114 or 116 w/C or better; PHY 121 w/C or better; Pre- or corequisite(s): MAE 215 w/C or better if completed; MAT 275 w/C or better if completed OR Visiting University Student
BME	211	MATLAB & Mathcad in BME	Introduces the basics of MATLAB and Mathcad programming in the context of biomedical engineering conservation of mass problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering student; CHM 114, 116 or 118 with C or better; BIO 181 with C or better; Pre- or corequisites: PHY 131 or 151 with C or better if completed; MAT 274 or 275 with C or better if completed
BME	213	BME Ethics	Explores ethical issues in biomedical and medical sciences and engineering practices and includes professional ethics, medical ethics, engineering ethics and the Biomedical Engineering Society (BMES) Code of Ethics, the ethics of human and animal tissue and subjects use in biomedical science and engineering research, responsible conduct for research, ethical issues in the design and manufacture of medical devices for developing and developed countries, and the impact of biomedical engineering solutions on society and the environment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering student OR Visiting University Student
BME	214	FDA & Technical Communications	Develops writing skills to factually and effectively communicate all facets of biomedical product design and development activities that are required to successfully conceive, develop, and launch a medical device into the market place using the FDA quality systems best practices that are utilized by the health care technology industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering major; Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed OR Visiting University Student

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BME	235	Physiology for Engineers	Physiology of the nervous, muscular, cardiovascular, endocrine, renal, and respiratory systems. Emphasizes use of quantitative methods in understanding physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prereq(s): Biomed Engr major; BIO 181 or BME 111 w/ C or better; CHM 114 or 116 w/ C or better; Pre- or coreq(s): CSE 110 w/ C or better if completed; PHY 121 w/ C or better if completed; PHY 122 w/ C or better if completed OR Visiting University Student
BME	282	Biomedical Prod Dsgn & Dev II	Hands-on training and implementation of product design skills that combine virtual analytical model prototype development with component and sub-assembly integration to develop both virtual and physical prototypes of a medical device product at the product architecture level and verify selected product architecture specifications from design input and earlier design process verification steps.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering major OR Visiting University Student
BME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	300	Bioengineering Product Design	The fundamentals of financial and organizational structure of business and how it influences bioengineering analysis, design, and decision making; biomedical ethics and device and drug regulation; and fundamentals of business and technical management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 100 or FSE 100 with C or better; BME 213 with C or better; BME 214 with C or better; ENG 102, 105, or 108 with C or better; minimum junior standing OR Visiting University Student
BME	301	Numerical Methods in BME	Applications of numerical methods to biomedical engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student
BME	316	Biomechanics for BME	Biomechanics provides conceptual and mathematical tools that are necessary for understanding how living things move. Focuses on human biomechanics with an emphasis on the musculoskeletal system.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; PHY 121 with C or better; PHY 122 with C or better; Pre- or corequisite(s): BME 235 or BIO 202 with C or better if completed OR Visiting University Student
BME	318	Biomaterials	Material properties of natural and artificial biomaterials. Tissue and blood biocompatibility. Uses of materials to replace body parts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): Biomedical Engineering BSE major; BIO 181 or BME 111 with C or better; BIO 202 or BME 235 with C or better; CHM 114 or 116 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
BME	322	Statistics for BME	Introduces parametric and nonparametric statistics tests in the context of common biomedical experiments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student
BME	331	Transport Phenomena for BME	Transport phenomena with emphasis on momentum, energy, and mass transport in living systems, medical devices, and other therapeutic/diagnostic applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200, 212, or 294 (Conservation Principles) with C or better; MAT 274 or 275 with C or better; PHY 121 with C or better OR Visiting University Student
BME	340	Thermodynamics for BME	Thermodynamics is a branch of science dealing with processes (chemical or mechanical) and the subsequent energy and mass transfers. Studies whether a process is favorable (possible) or unfavorable (impossible) while assessing energy and mass transfer within each specific stage of the process. The operation of living systems is heavily based on the use of chemical reactions and or mechanical processes such as beating of the heart, biochemical reactions of a drug in liver, phase equilibria. Covers the fundamental principles and laws of thermodynamics. Helps students think thoroughly about the applications of thermodynamics in biological sciences and bioengineering with the main emphasis on basic concepts and problem-solving skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
BME	350	Signals & Systems for Bioengrs	Applies principles of calculus and ordinary differential equations to analysis and computer processing of biosignals and linear modeling of biosystems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; MAT 275 with C or better OR Visiting University Student

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BME	360	Control in Biological Systems	Illustrates the basic principles of control through examples from evolved and synthetic biological systems. Surveying topics including feedback and feedforward control mechanisms, insulation of circuits via modularity, and discovering optimal intervention strategies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; BIO 353 with C or better; EEE 202 with C or better; MAT 275 with C or better
BME	362	Methods Molecular & Cell Bio	Gives junior-level undergraduate students hands-on experience on the methods used in molecular and cellular biology lab, especially methods to engineer or analyze DNA and protein.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BME	370	Microcomputer Apps in BME	Uses microcomputers for real-time data collection, analysis, and control of experiments involving actual and simulated physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; EEE 202 with C or better; BME 350 with C or better
BME	382	Biomedical Prod Dsgn & Dev III	Continuation of hands-on training and implementation of medical device product design and development skills; experimental practices, data gathering, presentation, and statistical analysis in regards to demonstration of validation and verification tools and testing, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; BME 182 with C or better; BME 282 with C or better OR Visiting University Student
BME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	413	Biomedical Instrumentation	Principles of medical instrumentation. Studies of medical diagnostic instruments and techniques for the measurement of physiologic variables in living systems. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3	L	Prerequisite(s): Biomedical Engineering major; BIO 202 or BME 235 with C or better; BME 350 with C or better; Corequisite(s): BME 423 OR Visiting University Student
BME	416	Advanced Biomechanics	Mechanical properties of bone, muscle, and soft tissue. Static and dynamic analysis of human movement tasks such as locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; BME 316 with C or better
BME	417	Biomed Engr Capstone Design I	Technical, regulatory, economic, legal, social, and ethical aspects of medical device systems engineering design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s) all with C or better: Biomedical Engineering major; BME 300; BME 318; BME 331; BME 382; BME 122 or 322; BME 360 or 370; BME 316, BME 416, or MAE 212; EGN 211 or 212
BME	423	Biomedical Instrumentation Lab	Lab experience with problems, concepts, and techniques of biomedical instrumentation in static and dynamic environments. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1	L	Prerequisite(s): Biomedical Engineering BSE major; Corequisite(s): BME 413 OR Visiting University Student
BME	434	App of Bioengineer Transport	Develops mathematical models of transport phenomena in physiological systems, medical devices, and pharmacokinetic analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 331 with C or better
BME	465	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME 350 or EEE 304; Credit is allowed for only BME 465 or BME 494 (Principles Magnetic Resonance) or BME 565 or BME 598 (Principles Magnetic Resonance Spectroscopy & Imaging)
BME	467	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s) w/ C or better: Biomedical Engineering major; BME 318; BME 331; BIO 353; MAT 275; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine) OR Visiting University Student
BME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		
BME	490	Biomedical Engr Capstone II	Individual projects in medical systems or medical device design and development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s): Fulton Engineering undergraduate student; BME 417 with C or better
BME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6		Prerequisite(s): Barrett Honors student

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BME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6	L	Prerequisite(s): Barrett Honors student
BME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BME	521	Neuromuscular Control Systems	Overview of sensorimotor brain structures. Application of nonlinear, adaptive, optimal, and supervisory control theory to eye-head-hand coordination and locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	525	Surgical Techniques	Principles of surgical techniques, standard operative procedures, federal regulations, guidelines, and state-of-the-art methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Pre-requisites: Graduate Engineering students only
BME	526	Intro to Neural Engineering	Introduces the field of neural engineering. Neural engineering, as with all engineering fields, can be thought of as applied scientific understanding, in this case, applied neuroscience. Covers aspects of neurophysiology, neuroanatomy, neurosurgery, biophysics, electronics and signal processing; integrates these knowledge areas into neural engineering applications. Covers an entire process for conducting research in neural engineering: surgical implantation of electrodes, data acquisition, processing neural signals, decoding neural data, and controlling prosthetic devices. Provides foundation for working with neural engineering applications and conducting research in neural engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BME 526 or BME 598 (Intro to Neural Engineering)
BME	527	Biomedical Device Design	Basic phenomena behind various types of biomedical devices which measure indicators using optical, thermal and other modalities. Provides an introductory coverage of the theory and history of these devices and includes some hands-on activities to use, reverse engineer and analyze data gathered from in-class activities with currently existing devices. Uses Matlab to perform most of the analysis. Preliminarily exposes students to principles of device design and testing with consideration to FDA regulations and requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): graduate Biomedical Engineering student; Credit is allowed for only BME 527 or BME 598 (Biomedical Device Design)
BME	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556
BME	561	Clinical Neuroscience	Fundamental mechanisms that underlie diseases and disorders of the central and peripheral nervous systems. Introduces assessment and pharmacological, surgical and rehabilitative management of nervous systems disorders. Prior knowledge of neural systems is helpful. Identifies the mechanisms by which key disease and trauma states impact neural systems and how clinicians identify the locus and type of damage based on clinical and imaging criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	565	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering graduate student, Chemistry MS or PhD student, or Physics MS or PhD student; Credit is allowed for only BME 565 or BME 465 or BME 494 (Principles Magnetic Resonance) or BME 598 (Principles Magnetic Resonance Spectro & Imaging)
BME	566	Medical Imaging Instrumentatn	Design and analysis of imaging systems and nuclear devices for medical diagnosis, therapy and research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BME	567	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies. Prior knowledge of high-level engineering mathematics (up to differential equations), engineering transport concepts (particularly mass transfer), and biology is expected.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering graduate student; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine)
BME	568	HumanFactors&SystDsgnAssistTech	The field of human factors engineering as it relates to the design, development and use of assistive technology for individuals with sensory, motor and cognitive disabilities. Includes lectures, guest lectures, hands-on demonstrations and class discussions of relevant and current topics related to human-centered design of assistive technology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME graduate student; Credit is allowed for only BME 568 or BME 598 (IGERT: Human Factors)
BME	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		Pre-requisites: Graduate Bioengineering students only
BME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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BME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	101	Introduction to Bioinformatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Introduces topics in translational bioinformatics, such as sequence alignment, the Human Genome Project, gene expression analysis, genome-wide association studies, next-generation sequencing.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	102	Intro Pop Health Informatics	Applies information and computer science and technology to public health practice, research, policy and decision support. This new scientific area focuses on the capture, management and use of electronic public health data. Introduces the field of population health informatics and the current systems that are used for population health decision making. This is not a programming course or a mathematics course. While these backgrounds are prominent in the field, this course provides the history and context of the field and enables students to develop their own population health informatics system using techniques of their choice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	201	Intro to Clinical Informatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Provides an introduction to biomedical informatics techniques and applications used in clinical environments. Includes searching and organizing free text information, decision analysis techniques and clinical decision support systems, and clinical applications including physician order entry used in electronic medical records. Also covers challenges in clinical informatics, including sociotechnical and cognitive issues in implementation and use.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
BMI	211	Modeling Biomedical Decisions	First semester of a three-semester course sequence surveying the methods and theories underlying the field of biomedical informatics. Explores models of medical decision making, including classical decision theory, Bayesian, and cognitive models. Also includes a component discussing evaluation methods in biomedical informatics.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	221	Knowledge Representation BMI	Introduces topics in knowledge representation and modeling, including frame-based systems, logic-based systems, rule-based systems, inference, and reasoning. Overview of history and present state of the field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	311	Modeling Biomedical Knowledge	Introduces concepts of artificial intelligence and knowledge modeling using medical informatics examples. Historical foundations and motivations of AI in medical applications; problem solving, reasoning, knowledge management, and planning as applied to medical informatics problems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	312	Modeling Biomedical Data	Third semester of a three-semester course surveying the methods and theories underlying the field of biomedical informatics. Explores methods of use in the design and maintenance of biomedical databases, machine learning techniques, information retrieval in biomedicine and other methods specific to bioinformatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	330	Topics Trans Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medicine research. Topics include bioinformatics data acquisition and management, including microarrays, database modeling and integration; analysis methodologies, including statistics and data mining; and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	332	Team Dynamics Healthcare IT	Teaches the fundamentals of leadership, management, and team dynamics in a project-focused software engineering environment, and with a focus on informatics and healthcare applications. Teaches students about team and group dynamics, recognizing dysfunctional teams, and helping to foster productive group and leadership skills.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		

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BMI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	404	Clinical Environments	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and exposes students to the clinical environments in which health care providers create, manage, and use clinical information. Students attend lectures and spend a significant portion of time examining and reporting on different clinical settings throughout the semester.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
BMI	410	Database Mgt in Health Care	Database fundamentals and the use of databases in health care. Fundamental concepts in relational database design spanning both operational and analytical use cases. Students learn and practice SQL syntax. Discusses modern implementations of databases in health care; exposes students to the most common forms of modern health care data: EHR data, claims (pharmacy and medical), and health care data models (includes health care data warehouses). When possible, exposes students to real (deidentified) data and database schemas, but synthetic data may also be used that closely matches the format it is intended to represent.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BMI 410 or BMI 394 (Database Management in Healthcare)
BMI	461	Advanced Topics in BMI I	Covers current trends and cutting-edge research areas of clinical, public health, and consumer health informatics. Particular emphasis on research that is of relevance to patients, and the healthy public, covering such topics as outbreak detection and the personal health record. Also covers research on the use of technology in medical education, and the ways in which clinical decision support systems are applied in contemporary medical practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	462	Advanced Topics in BMI II	Covers current trends and cutting-edge research areas of bioinformatics, imaging informatics, and translational science. Emphasizes informatics approaches to the novel data sources that are supplied by the next generation of methods for affordable gene sequencing, and initiatives underway to accelerate the integration of novel research findings into everyday clinical practice. Includes a series on modeling and simulation, current approaches to computer-aided diagnosis of medical images, ways in which technology can support the discovery of new knowledge, and the application of telemedicine to remotely facilitate clinical care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	465	Intro to Comparative Genomics	Explores genomic sequences and hypotheses for their structure, evolutionary history, and underlying mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only BMI 465 or BIO 455
BMI	482	Capstone I	First course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of a research project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	
BMI	483	Capstone II	Second course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of an applied project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): BMI 482 with C or better
BMI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
BMI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
BMI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
BMI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
BMI	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMI	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502

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BMI	504	Intro to Clinical Environments	Course is divided into three sections. The first section covers medical and health care concepts and terms, and discuss observational techniques. In the second portion, students investigate a variety of different clinical environments and report back to the class on their findings. The final portion summarizes the key points of information technology in these clinical environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): graduate BME or BMI major; Credit is allowed for only BMI 404 or BMI 504
BMI	505	Foundations of BMI Methods II	Second semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 502 with C or better
BMI	506	Clinical Decision Support	The course will provide an in-depth analysis of computer-based approaches to supporting clinical decision making for providers and patients (as well as healthy individuals, for disease prevention/health maintenance). The history of the field of clinical decision support (CDS) and the spectrum of methodologies will be reviewed. Practical issues involved in successful implementations of CDS will be discussed. The roles of standards and infrastructure will be examined. Current research topics and foci will be explored.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMI	515	App Biostats Med & Informatics	Comprehensive treatment of the statistical methods used most often to analyze quantitative data collected in medical and biomedical informatics studies, including clinical trials, epidemiologic studies, studies of the accuracy and performance of screening and diagnostic tests, and studies to develop predictive models. Students learn to use SAS statistical software to analyze biomedical data.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	516	Adv Biomedical Data Analysis	Acquisition, conversion and organization of biological data into relevant diagnostic, therapeutic, and research information using information extraction and data mining.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 501 with C or better
BMI	517	Adv Biostats Biomed Research	Covers the use of computation as a tool for biostatistical data analysis and methods development, especially for research on multivariable regression analysis of biostatistics and health science. Major topics include understanding of hypothesis testing; regression model development; multivariable regression analyses on continuous, binary and censored outcomes; how to handle statistics issues related to regression modeling such as collinearity, overfitting and missing data. Students use the R statistical programming language to display and analyze data, and to evaluate statistical procedures and algorithms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 515; Credit is allowed for only BMI 517 or BMI 598 (Biostatistics with Computational Applications)
BMI	520	Modeling Gene Reg Networks	Computational and mathematical modeling used to approximate gene regulatory networks as well as signaling pathways and inference of model parameters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 505 with C or better; BMI 516 with C or better
BMI	540	Problem Solving in BMI	Theory and practice of software engineering principles as they apply to large- and medium-scale clinical systems from bench to bedside.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601 with C or better
BMI	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550
BMI	555	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515 or IEE 572 or IEE 578; Credit is allowed for only BMI 555 or IEE 520

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BMI	560	Teaching Biomedical Informatics	Student serves as a teaching assistant with a faculty member who is teaching either a required or elective course in the Biomedical Informatics curriculum. Such courses will generally be BMI courses but with the approval of the student's faculty program advisor may include a course that is an approved elective in the BMI program but is offered in another department within the university. The experience provides a significant teaching role, either lecturing or moderating small group sessions or laboratories. Grading class homework assignments and designing/grading examinations will also typically be part of the experience. Assisting other students outside of class and being available during office hours will also generally be part of the student teacher's role. A student may also receive 1 hour of credit for participating substantively in the design of a new course, working closely with a faculty member. Generally in such circumstances the student should then serve as course teaching assistant when it is offered for the first time (separate enrollment in this course).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Biomedical Informatics PhD student
BMI	570	BMI Symposium	Students attend the BMI Symposium Speaker Series twice a month and the student journal club discussion on alternate weeks. During the journal club weeks, each student leads a discussion on a current topic pertinent to the field of biomedical informatics.	N	SEM	Y	YGB	College of Health Solutions	College of Health Solutions	1		Pre-requisite: BMI Graduate student
BMI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student
BMI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics MS student
BMI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Health Informatics MAS, Biomedical Informatics MIP, or Biomedical Informatics MS student
BMI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): graduate Biomedical Informatics student
BMI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student
BMI	601	Health Informatics	Offers an overview of the field of health informatics. Combines perspectives from medicine and computer science for use of computers and information in health care and the health sciences. Includes an overview of health information literacy and data standards. Covers specific applications and general methodology in health informatics using current topics in the field. Discusses evaluations of health systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BMI	602	Programming Health Care Domain	Intensive introduction to object-oriented programming concepts focused on the unique challenges such as those related to data volume, complexity, and uncertainty inherent to applications in a health care domain. Also covers the fundamentals of algorithm analysis and data structure design. Stresses a software engineering approach to abstraction for problem decomposition and solution formulation, with object-oriented and reusability concepts introduced early. Emphasizes the use of generic data structures and abstractions from template libraries for reusability, as well as modular design. In addition, also covers basic concepts of algorithms and data structures.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	603	Health Informatics Database	Thorough coverage of the foundations of database systems and their specific use and modeling in healthcare and biomedical environments. Students learn through hands-on experience with the modeling and implementation of health-related databases using the relational approach. Topics include an overview of database models and architecture, database design, SQL, XML, and data warehousing as they are applied in clinical domains. Students are encouraged to explore database-related topics of their own, choosing ones that are relevant to a bioinformatics or clinical domain.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	604	Health Information Literacy	Students learn to locate, retrieve, and store information with an emphasis on electronic search, retrieval, and storage. They also learn to assess the validity and quality of information, improve the quality of information, and how to improve the quality of, protect, and effectively communicate health information.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Pre-requisite: Health Informatics MAS student
BMI	605	Health Info Systems & Apps	Explores the use of information systems in different health care settings, analyzing operational and strategic objectives for their deployment. Emphasizes the analysis of the different factors that influence decision making during the process of design and deployment of systems, including human factors, hardware, software, policy, communications, and the successful management of such systems. Also covers guidelines for the design and successful deployment of systems to meet those objectives and includes discussion of architectures, components, and models. Analyzes specific case studies of successfully and unsuccessfully deployed systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	608	Project Mgmt Interdis Teams	Introduces students to the health care team and explores tools and techniques for establishing effective interdisciplinary teams in a health care setting, emphasizing collaborative clinical decision-making and patient management. By working in small teams, the course puts into practice these techniques, allowing students to collaborate with other health professionals to solve specific problems, provide services, or develop new understandings. Also covers the concepts, skills, tools, and techniques involved in the management of information system projects, providing an introduction to the established discipline of project management, with a specific focus on how they apply to managing information systems for a biomedical setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	610	Clinical Culture & Health Care	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and reviews clinical environments in which health care providers create, manage and use clinical information. Students perform observations in a variety of clinical environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Informatics MAS student
BMI	612	Applied Data Mining	Comprehensive introduction to data mining methods and algorithms used most often to analyze data collected in biomedical informatics studies, including genomics and proteomic disease association studies, clinical trials, clinical image analysis and studies of the accuracy and performance of screening and diagnostic tests. Emphasizes assessing data quality, understanding how to select an overall approach to analysis, and presenting and interpreting the results of data mining analysis. Students learn to use Excel to effectively display data collected in biomedical research studies and Weka software to analyze data using approaches that are used commonly in biomedical studies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
BMI	613	Workflow Analysis & Redesign	Provides an overview of workflow analysis and process redesign and their use in quality improvement activities, including specification. Uses case examples to highlight key concepts and measurement concepts and covers techniques. Includes the links of systems engineering to fundamentals of decision theory, statistics and optimization. Includes discussion of current successful techniques for systems engineering. System engineering seeks to enable the successful design, implementation, deployment and maintenance of successful systems. Emphasizes gathering and analysis of customer needs for the specification and documentation of required functionality early in the system's lifecycle.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	614	Curr Persp Health Informatics	Seminar course using external speakers to discuss and review the current state of the health informatics field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601
BMI	615	Human Factors Eng Biomed App	Fundamental principles of human-computer interaction and human factors and how to apply them to real-world problems through class projects, homework, and real-world design. Focuses on learning why user-friendly interfaces can greatly improve work productivity and enhance the quality of healthcare without radically changing the underlying technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	616	Clinical Decision Support	Focuses on the major problems of human decision making in health care including causes of errors, decreased quality and increased costs. Explores the role of information technology, primarily through computer-based clinical decision support (CDS), to address these problems. Explores key methods used to provide CDS, the capabilities and limitations of current approaches, and the challenges for managing and updating the knowledge needed to deliver CDS in an enterprise setting. Origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation; and the history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Students gain hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate health policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	617	Prin Evidence-based Medicine	The origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation. The history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Health Informatics MAS student
BMI	618	Leadership & Change Clinical	Covers core concepts related to leadership and specific methodologies used by effective leaders, including running meetings, negotiation, and conflict management. Also reviews change management as a structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state. Provides exposure to various models and processes related to change management and the tradeoffs between these different approaches. Includes case examples related to health information.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics PhD student
BMI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student
BMI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student

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BMY	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function—e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Credit is allowed for only BIO 230 or BMY 230
BMY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	302	Principles of Life	Explores nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. Develops participants' understanding of the deep patterns found in nature, and acts as an introduction into the methodology of biomimicry—including the review and study of life's operating conditions on Earth; the six primary principles; and their related sub-principles. Gives the knowledge necessary to bring these design guidelines into practice and provides opportunity to integrate them into one's discipline.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better
BMY	304	The Practice of Biomimicry	Explores the process of nature-based design from a methodology-based approach. Deep dives into the biomimicry process and reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluation. Introduces the art of translating biological concepts into strategies for application and building a taxonomy of design principles. Includes a practicing tools component and a final multi-week group project. Offers the structure for which biomimicry can be put to practice.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better OR Visiting University Student
BMY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	430	Biomimicry Practicum	Allows participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have meaningful outcomes achievable within the semester, and allow the investigation of biomimicry life's principles as well as engage students in the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based with the final deliverable having an application in a real-world setting.	N	PRA	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): BMY 230; BMY 302; BMY 304
BMY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		
BMY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		
BMY	501	Essentials of Biomim	Offered as a sampler of the various topics (discipline, emulate, ethos, (re)connect and iSites, human-nature connection, biomimicry thinking, and life's principles) within the discipline of biomimicry. Each week is devoted to a specific topic and is led by a different instructor. Provided a basic overview of each aspect of the discipline with ample opportunity for conversation and dialogue around the specific components, with an understanding that greater depth into each topic can be learned by taking the advanced BMY courses.	N	LEC	N	OP2	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	502	Life's Principles	Life's principles are nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. With instruction by Dr. Dayna Baumeister, this 16-week online course takes participants on a deep dive of life's principles, including the review and study of life's operating conditions, the six primary principles and their related sub-principles. Gives participants the experience necessary to bring these design guidelines into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMY 501

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BMJ	503	BIO Taught Functionally	Biomimicry teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores how biologists gather and research information and how that knowledge can inform other disciplines. Also introduces the art of translating biological concepts into strategies for application, which is then carried throughout all the courses. Students learn how to work with biologists on a biomimicry team and how to weave biology and biomimicry together. The biologists in the cohort not only learn to look at nature through the function lens, but also act as subject matter experts for their interdisciplinary teams and teaching assistants.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMJ 501
BMJ	504	Biomimicry Thinking	Biomimicry thinking is the practice of biomimicry from a methodology-based approach. It is a 15-week intensive in the methodology of biomimicry that reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluating. Covers the art of translating biological concepts into strategies for application and building a taxonomy of design principles.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Prerequisite(s): Biomimicry MS student or Biomimicry certificate student; Pre- or corequisite(s): BMJ 501
BMJ	511	Biomimicry and Design	Biomimicry is innovation inspired by nature, or the conscious emulation of nature's genius. Prepares participants to design sustainable innovations using the biomimicry philosophy and methodology. Participants complete a 16-week series of lectures and assignments to demystify the design thinking process, understand how to harness the potential of approaching challenges with a design mind, distill a design challenge, understand user needs, build a bridge between biology and design, use a methodology for discovering models from nature, abstract design principles from bio-inspired strategies, and translate those principles into sustainable innovations. Participants both with a design background and without equally experience a deep immersion into the world of biomimetic design.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMJ 501
BMJ	512	Biomimicry and Engineering	Prepares participants to understand the field of engineering; identify the types of engineers and what each one does; what constrains engineers' work under, materials selected by engineers, how to present biological ideas to engineers and how to integrate ideas from their discipline into sustainable engineering designs using biomimicry principles. Most examples used are of large engineered structures. These structures play critical functions in human systems, have a significant impact on the environment and last for over a 100 years, so it is important to imbed as much sustainability into their design as possible. Requires a final team project designed to put these ideas into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMJ 501
BMJ	516	Biomimicry and Business	Addresses business topics from the biomimicry point of view; explains mechanisms and tools for comparing and contrasting business and nature. Challenges participants to question conventional ways of conducting business and come up with new approaches based on a different point of view. Recommend BMJ 502 and BMJ 504 to be successful in this course.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMJ 501
BMJ	517	Human-Nature Connection	Grounds the emerging discipline of biomimicry as a continuation of our ancestral connection with nature. Human-Nature Connection (HNC) engages participants in an exploration of the meaning and value of connecting with nature. Topics include defining humans, nature, and our connection with nature; establishing the evolutionary, personal, and socio-cultural influences on the different expressions of this connection; and illustrating the relevance of biomimicry to the human-nature connection.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Pre- or corequisite(s): Biomimicry MS student; BMJ 501
BMJ	530	Virtual Design Lab Prac	Practicum designed to allow participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have a meaningful outcome achievable within the semester, and should engage the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based, and the final deliverable should have application in a real-world setting.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Prerequisite(s): BMJ 501; BMJ 502; BMJ 503; BMJ 504; Biomimicry MS student with minimum 20 hours or Biomimicry Certificate student with minimum 13 hours; Pre- or corequisite(s): Biomimicry MS or Biomimicry Certificate student

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BMY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): Biomimicry MS student; BMY 501; BMY 502; BMY 503; BMY 504
BMY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-4		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BUA	380	Small Business Leadership	Develops leadership skills needed to form, lead, and operate a small business. Emphasizes creating a vision, research, and problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	381	Small Business Acct & Finance	Accounting and finance skills needed by small business owners to acquire, allocate, and track monetary resources and evaluate performance.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student. Must not have earned credit in ACC 382.
BUA	383	Small Bus Working Relationship	Addresses communication and the people in a business--clients, employees, suppliers, competitors, governments, family, and self development.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
BUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
BUS	384	Business Operations & Planning	Planning and executing plans--the what, when, where, how, and who from product/service/project idea to pay back or completion.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): SCM 300 or 303 OR Visiting University Student
BUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 45 hours
BUS	424	Sales and Negotiations	Principles and techniques of selling, merchandising and negotiations applicable for all businesses and organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): MKT 300
BUS	434	Business Risk Management	Strategies to manage business risk: derivatives, insurance, self-insurance and public policy.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303 OR Visiting University Student
BUS	436	Frontiers in Risk Management	Highlights practices and challenges faced by firms in terms of identifying, measuring and communicating a variety of business and financial risks, as well as designing and implementing risk management strategies as a critical component of the overall strategic management process. Emphasizes a variety of financial and nonfinancial risks in a holistic framework. Develops an understanding of the risk management practices and challenges faced by firms in a variety of business settings and industries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303
BUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAP	120	Intro to Counseling	Provides an introduction to and broad overview of the field of counseling. Covers several counseling topics related to ethics, prevention, intervention and treatment, as well as multicultural counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
CAP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	220	Self in Multicultural Society	Covers current theories and research on culture, race and ethnicity, gender and other specific aspects of cultural diversity in a multicultural society. Explores themes, theories, topics and research related to power, privilege and oppression in the United States.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	
CAP	240	Counseling Skills	Provides an introduction to counseling skills and intervention techniques used in treatment. Focuses on active listening, self-awareness and other related skills.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	260	Careers in Counseling & Ap Psy	Provides a broad overview of the various career opportunities in counseling and applied psychology fields.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): CAP 120 or PSY 101
CAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	310	Addictions I - Fdn. & Princ.	Covers the history, overview and principles of addiction as well as introductory counseling techniques specific to addictions and substance abuse. Students also learn the basic types of addictions and techniques to diagnose them.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	315	Trauma & Crisis Intervention	The role of counselors in traumatic events, crises and situations. Also introduces students to counseling skills and techniques particularly specialized for crises such as child abuse, partner violence, war, natural disasters and many others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120
CAP	320	Theor. Counseling&Psychotherpy	Provides the theoretical foundations and knowledge related to the principles of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108; CAP 120; CAP 240
CAP	325	ProfPrac & Ethics	Discusses ethical issues (confidentiality, informed consent, integrity, respect) and professional codes of conduct in the counseling field.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240 OR Visiting University Student
CAP	330	Group Counseling	Provides an overview of theories, techniques and approaches to group counseling and therapy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	335	Addiction Group Counseling	Offers an overview of the role and efficacy of group therapy in substance abuse treatment. Students learn about the different types of substance abuse treatment groups; screening and criteria for groups; group development and stages of treatment; and group leadership skills and techniques (e.g., motivational interviewing). Through weekly discussions, journal reflections and experiential activities, students learn the various techniques used in group substance abuse treatments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	340	Multicultural Counseling	Provides an overview of multicultural theory, research and practice. Topics include acculturation, identities, prejudice and other related topics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220
CAP	342	Community Outreach Prev. & Int	Provides an understanding of the methodologies in community outreach and prevention treatment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220
CAP	351	Issues Assess Diagnosis Trtmnt	Builds upon previous coursework. Provides students with an understanding of the major screening, assessment and diagnostic approaches for substance abuse and addictions. Students obtain knowledge of (1) models, (2) instruments, and (3) diagnostic criteria, and will be able to link this knowledge to treatment planning and interventions for addictions. Please note: the goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field. The goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 310 with C or better
CAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
CAP	400	Advanced Research Methods	Builds upon introductory research methods and provides students with a strong foundation of research knowledge in counseling. Covers critical reading and analysis of peer-reviewed journal articles, types of research methodologies and proposal development.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; PSY 290

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CAP	420	School Counseling	Provides an overview of counseling in school settings. Covers the role of school counselors in supporting youth and adolescents in many areas such as developmental disabilities/mental illness, as well as ethical and legal issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	440	Addictions II - Treat & Recov.	Builds upon previous course work. Covers philosophies and models of treatment, recovery, relapse prevention and continuing care in substance abuse counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 310
CAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 45 hours
CAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
CAP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 45 hours
CAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
CAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		
CAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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CDE	232	Human Development	Lifespan development from conception through adulthood, with emphasis on family influences. Recognition of individuality within the universal pattern of development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
CDE	244	Children with Health Challenge	Provides a comprehensive introduction to family-centered care, psychosocial assessment of the hospitalized and chronically ill child, and techniques to support their coping. Utilizes the principles/theories of child development, and introduces the role of a child-life specialist in the promotion of effective coping through play, preparation and education among children, youth and families facing challenges related to health care and hospitalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Credit is allowed for only CDE 244 or CDE 294 (Children Facing Health Care Challenges) OR Visiting University Student
CDE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 24 hours; SOC 101, PSY 101, FAS 101, or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
CDE	337	Early Childhood Intervention	Explores how child development theory affects practice with children and families, emphasizing development of young children and early intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
CDE	338	Child Development Practicum	Supervised practicum in the Child Development Lab preparing students for work in child care centers and agencies serving young children and families.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	2-4		Prerequisite(s): minimum 45 hours
CDE	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
CDE	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
CDE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PGS 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
CDE	430	Infant/Toddler Devel in Family	Examines the development of infants/toddlers, the socialization processes of families, and the interactions of these processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
CDE	450	Child Dysfnc in the Family	This course will provide a focused study of the development of dysfunction within the family context. Other contextual influences will also be considered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 232, PGS 101, or SOC 101 with C or better; minimum junior standing OR Visiting University Student
CDE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
CDE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student
CDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
CDE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
CDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		

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CDE	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)
CDE	531	Theoretical Issues Child Devel	Major developmental theories, related research, and their application to family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	533	Research Issues in Child Devel	In-depth exploration and critique of research focusing on child development in a family setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	534	Risk & Resilience in Children	Integrates child development, family theory, and research to understand risk and resilience in children and adolescents.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: CDE 531; FAS 500
CDE	570	Child Development for IFP	Examines development during infancy and early childhood with an emphasis on social and emotional development, mental health, and early parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	571	Infant Mental Health for IFP	Surveys the biological and environmental risk factors that jeopardize the mental health of infants and young childre; overview of prevention and intervention strategies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	572	Assessment for IFP	Developmentally appropriate assessment of mental disorders and developmental disabilities in infants, toddlers, and preschool children and parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	573	Cultural Competence for IFP	Examines cultural issues impacting parent-child relationships and child rearing and the effectiveness of infant mental health and early intervention services on families of various ethnic and cultural backgrounds.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	574	Observation&Reflection for IFP	Strategies for observing infant behavior and parent-child relationships and skills for reflective, relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	575	Adv Observation for IFP	Advanced strategies for observing infant behavior and parent-child relationships and skills for reflective relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	576	Appl Research Methods for IFP	Survey and critical examination of child development, parent-child relationships, family relationships, and early intervention research and the application to IFP.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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CDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	610	Gender Development	Examines current theories and research concerning the various aspects of gender and developmental change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	612	Children's Peer Relationships	Studies scientific theory, research, and evidence on peer relationships and social competence from early childhood through adolescence.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite(s): CDE 531 with C or better
CDE	634	Prevention & Child Development	Advanced training in research and theory-based approaches to developing and evaluating prevention programs for children at risk.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite: CDE 534
CDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CDH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CDH	501	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives—whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
CDH	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CDH	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CED	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	250	Career Development	Covers models of the individual, the world of work, and decision making with emphasis on individual application.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	
CED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
CED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
CED	501	Res & Eval. in Counseling	Introduction to the basic models of research and evaluation in the field of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CED 501 or 591 (Res. & Eval. in Counseling)
CED	502	Counseling data analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate counseling research problems using statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CED 502 or CED 591 (Counseling Research Data Analysis)
CED	522	Theories of Counseling/Psychoth	Presents major theories of psychological intervention as well as underlying personality theory upon which they are based.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	523	Psychological Tests	Standardized tests in the study of the individual, with emphasis on test score interpretation in counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	527	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CED	529	Lifespan Human Development	Issues and models of human development as it occurs across the lifespan.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CED	534	Occupations and Careers	The world of work, career development, education, and training for occupational entry and mobility.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	545	Analysis of the Individual	Theory and methods commonly used in studying the individual. Observational methods, diagnostic interviews, structured, and semi-structured methods for assessing personality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	567	Group Dynamics and Counseling	Group process factors, theory, and diversity issues determining effective interaction in small groups. Emphasis placed on lectures, self awareness, and experiential components.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	577	Counseling Prepracticum	Focus on racial, social, and cultural factors in the development of helping relationships through integration of cognitive and affective self-awareness with counseling skills.	N	LEC	N	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student
CED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student

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CED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CED	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671
CED	672	Couple Family Counseling	Couple and family counseling theories. Emphasizes a systems-communication model utilizing cocounseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student
CED	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student
CED	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CEE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	HU	Credit is allowed for only CEE 181, FSE 181, or SOS 181

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CEE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; PHY 122 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CEE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student
CEE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CEE	281	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	300	Engineering Business Practice	Engineering economic principles, cost/benefit analysis, project financing and delivery, management of engineering design, business practices, ethical and professional responsibilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	L	Prerequisite(s): Engineering BSE major; MAT 267 with C or better; minimum junior standing OR Visiting University Student
CEE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212 or CNE 212 or MAE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CEE	341	Fluid Mech for Civil Engineers	Fundamental principles and methods of fluid mechanics forming the analytical basis for water resources engineering, Conduit and open channel flow.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engr BSE major; CEE 212 with C or better; CEE 213 with C or better OR Environmental Engr BSE major; EVE 214 with C or better; Pre- or corequisite(s): CEE 384 or MAE 384 with C or better if completed OR Visiting University Student
CEE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE, Construction Engineering BSE, or Environmental Engineering BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student
CEE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CEE	361	Intro to Environmental Engr	Concepts of air and water pollution; environmental regulation, risk assessment, chemistry, water quality modeling, water and wastewater treatment systems designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 with C or better; CHM 114 or 116; Pre- or corequisite(s): IEE 380 OR Visiting University Student
CEE	372	Transportation Engineering	Fundamental background of highway and traffic engineering in the areas of planning, design, and operations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 212 with C or better; CEE 213 with C or better; Pre- or corequisite(s): IEE 380 OR Visiting University Student

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CEE	384	Numerical Methods for Engrs	Numerical methods and computational tools for selected problems in engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	CS	Prereq(s) with C or better: Fulton Engr undergrad; MAT 274 or 275; MAT 242 or 343 (or 342 for non-MAE major); Pre- or corequisite(s): MAT 267 or 272 with C or better if completed; Credit allowed for only MAE 384 or CEE 384 OR Visiting University Student
CEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	(L or HU) & H	Prerequisite(s): Civil Engineering BSE major; CEE 300 with C or better OR non-CEE major; minimum junior standing; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CEE	412	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 412 or 511 OR Visiting University Student
CEE	420	Steel Structures	Behavior of structural components and systems. Design of steel members and connections. Load and resistance factor design methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 420 or CNE 420 OR Visiting University Student
CEE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CEE	423	Structural Design	Analysis and design of reinforced concrete steel, masonry, and timber structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 421 with C or better; Pre- or corequisite(s): CEE 420 with C or better if completed
CEE	432	Developing Software Engr Appls	Matrix and computer applications to structural engineering and structural mechanics. Stiffness and flexibility methods, finite elements, and differences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; Credit is allowed for only CEE 432 or CEE 532
CEE	440	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student
CEE	441	Water Resources Engineering	Applies the principles of hydraulics and hydrology to the engineering of water resources projects; design and operation of water resources systems; water quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Environmental Engineering BSE major; CEE 341 with C or better
CEE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CEE	462	Unit Operations Environ Engr	Design and operation of unit processes for water and wastewater treatment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 with C or better OR Environmental Engineering BSE major; EVE 302 with C or better OR Visiting University Student
CEE	466	Urban Water System Design	Capacity; planning and design of water supply; domestic and storm drainage; and solid waste systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 341 with C or better; CEE 361 with C or better OR Environmental Engineering BSE major; CEE 341 with C or better; EVE 261 with C or better OR Visiting University Student

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CEE	467	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 or MIC 220 with C or better OR Environmental Engineering BSE major; EVE 303 with C or better; Credit is allowed for only CEE 467 or CEE 567 OR Visiting University Student
CEE	470	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 361; Credit is allowed for only CEE 470 or CEE 494 (Sustainable Environmental Biotechnologies) or CEE 570 or CEE 598 (Sustainable Environmental Biotechnologies) OR Visiting University Student
CEE	474	Transportation Systems Planning	Transportation systems modeling procedures, travel characteristics analysis, traffic predictions, transportation systems management, and transit planning methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; CEE 384 with C or better OR Visiting University Student
CEE	475	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; Credit is allowed for only CEE 475 or CEE 576
CEE	481	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; CEE 351 with C or better; CEE 372 with C or better; Credit is allowed for only CEE 481 or CEE 585
CEE	483	Highway Matl. Constr. Quality	Properties of highway materials, including aggregates, asphalt concrete, and portland cement concrete; construction practice; material delivery, placement, and compaction; quality control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 372 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 483 or CEE 583 OR Visiting University Student
CEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		
CEE	485	Sustainable CEE Systems Engr	Provides working knowledge of operations research methodologies, both the traditional and more modern metaheuristic techniques, to evaluate sustainable civil engineering systems and quantitatively evaluate project alternatives involving single or multiple goals.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 300; MAT 242 with C or better
CEE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4	L	Prereq(s): Civ Engr maj; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR Con Engr maj; CEE 321 or CNE 321; CEE 351 or CNE 351 OR Envir Engr maj; CEE 341; EVE 302; EVE 303; Credit allowed for only CEE 486 or CNE 486 OR Visiting University Student
CEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6		Prerequisite(s): Barrett Honors student
CEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6	L	Pre-requisite: Barrett Honors Engineering student
CEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-3		
CEE	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)

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CEE	506	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
CEE	507	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598 (Urban Infrastructure Anatomy/Sustainable Dev) or PUP553 or 598 (Urban Infrastructure Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastructure Anatomy & Sustain Dev)
CEE	511	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 412 or CEE 511
CEE	512	Pavement Performance and Mgmt	Pavement management systems, including data collection, evaluation, optimization, economic analysis, and computer applications for highway and airport design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student
CEE	513	Pavement EMR	Provides the necessary information for pavement engineers to evaluate, identify, and select reliable and cost-effective rehabilitation alternatives for existing Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) pavements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	514	Bituminous Materials and Mix	Types of bituminous materials used in pavement mixtures. Chemical composition, physical properties, desirable aggregate characteristics, optimum asphalt contents, superpave asphalt binder, mixture design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Graduate Civil Engineering student
CEE	515	Properties of Concrete	Materials science of concrete. Cement chemistry, mechanisms of hydration, interrelationships among micro- and macro-properties of cement-based materials. Mechanical properties, failure theories, fracture mechanics of concrete materials. Cement-based composite materials and the durability aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	516	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	521	Stress Analysis	Introduces tensors: kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student; Credit is allowed for only CEE 521 or MAE 520
CEE	523	Structural Damage	Fundamental mechanisms of damage in infrastructural materials from both imposed mechanical and environmental loading. Covers assessment of damage through noninvasive tools involving stress-wave, electrical, electro-chemical, radiographic and optical techniques. Methods for strengthening of structural elements and selected methods of design of strengthening systems for concrete and steel structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil or Construction Engineering student; Credit is allowed for only CEE 523 or CEE 598 (Structural Damage Evaluation and Strengthening)
CEE	526	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Engineering student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527

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CEE	527	Advanced Concrete Structures	Ultimate strength design. Combined shear and torsion. Serviceability. Plastic analysis. Special systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	530	Prestressed Concrete	Materials and methods of prestressing. Analysis and design for flexure, shear, and torsion. Prestress losses due to friction, creep, shrinkage, and anchorage set. Statically indeterminate structures. Design of flat slabs, bridges, and composite beams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	532	Developing Software Engr Appls	Fundamentals of engineering software development and object-oriented programming. Programming in C++. Development of matrix toolbox. Introduces finite element method. Computer graphics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student; Credit is allowed for only CEE 432 or CEE 532
CEE	533	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
CEE	536	Structural Dynamics Civil Engr	Free vibration and forced response of discrete and continuous systems, exact and approximate methods of solution, response spectra, computational techniques, special topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Construction Engineering or Engineering CEE graduate student
CEE	540	Groundwater Hydrology	Physical properties of aquifers, well pumping, subsurface flow modeling, unsaturated flow, numerical methods, land subsidence, and groundwater pollution.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	541	Surface Water Hydrology	Hydrologic cycle and mechanisms, including precipitation, evaporation, and transpiration; hydrograph analysis; flood routing; statistical methods in hydrology and hydrologic design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	543	Water Resources Systems	Theory and application of quantitative planning methodologies for the design and operation of water resources systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	545	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models and systems. Rain-runoff models. Hydrologic design. Concepts, properties and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS, MSE or PhD major; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology)
CEE	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 546 or GLG 546 or GLG 598 (Advanced Watershed Hydrology)
CEE	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
CEE	550	Soil Behavior	Physicochemical aspects of soil behavior, stabilization of soils, and engineering properties of soils.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	551	Advanced Geotechnical Testing	Odometer, triaxial (static and cyclic) back pressure saturated and unsaturated samples, pore pressure measurements, closed-loop computer-controlled testing, in-situ testing, and sampling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	552	Soil Improvement	Physical, chemical and biological methods for improving (modifying) the properties of the ground for engineering purposes; the applicability of these techniques to different ground conditions (e.g., sand, silt, clay) and design objectives (e.g., erosion control, stability, liquefaction mitigation); design of ground improvement programs for common ground modification techniques used in practice.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering student; Credit is allowed for only CEE 552 or CEE 598 (Soil Improvement)
CEE	553	Advanced Soil Mechanics	Applies theories of elasticity and plasticity to soils, theories of consolidation, failure theories, and response to static and dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	554	Shear Strength/Slope Stability	Shear strength of saturated and unsaturated soils strength-deformation relationships, time-dependent strength parameters, effects of sampling, and advanced slope stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student

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CEE	555	Advanced Foundations	Deep foundations, braced excavations, anchored bulkheads, reinforced earth, and underpinning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	557	Geoenvironmental Engineering	Environmental site assessment, solid waste management, waste containment system design, soil and groundwater remediation, soil erosion control, brownfields development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	558	Unsaturated Soil Mechanics	Advanced unsaturated soil mechanics theory, including introduction of stress-state variables and constitutive relationships for unsaturated flow and stress-strain applications. Knowledge of CEE 351 or equivalent material is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	559	Earthquake Engineering	Characteristics of earthquake motions, selection of design earthquakes, site response analyses, seismic slope stability, and liquefaction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	560	Soil/Groundwater Remediation	Presents techniques for remediation of contaminated soils and groundwaters with basic engineering principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	561	Phys-Chem Treat/Water & Waste	Theory and design of physical and chemical processes for the treatment of water and wastewaters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	562	Environ Biochem/Waste Treatmnt	Theory and design of biological waste treatment systems. Pollution and environmental assimilation of wastes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	563	Environmental Engineering Chem	Analyzes water, domestic and industrial wastes, lab procedures for pollution evaluation, and the control of water and waste treatment processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	564	Contaminant Fate and Transport	Fate and transport processes with emphasis on governing equations and parameters relevant to the migration of chemicals in the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	565	Adv Environ Biotechnology	Emerging topics in environmental biotechnology and related problem-solving techniques.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); CEE 562 and 567; Credit is allowed for only CEE 565 or 598 (Advanced Environmental Biotechnology)
CEE	566	Water Reuse and Reclamation	Reuse and reclamation of water, tertiary treatment technologies of water for reuse applications, cloth filtration and UV disinfection, agricultural reuse and engineering, landscape irrigation, industrial reuse, environmental restoration, groundwater recharge, direct and indirect potable reuse, water reuse planning and dual distribution systems, storage requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 566 or CEE 598 (Water Reuse & Reclaim)
CEE	567	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Engineering CEE Graduate student; Credit is allowed for only CEE 467 or 567
CEE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only CEE 469 or CEE 569 or CHE 469 or CHE 569
CEE	570	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Civil, Environmental and Sustainable Engineering MS, MSE or PhD student; Credit is allowed for only CEE 470, 494 (Sustainable Environmental Biotechnologies), 570 or 598 (Sustainable Environmental Biotechnologies)
CEE	572	Life Cycle Assess Civil Engin	Concepts of the life cycle assessment (LCA) framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposure to tools and data sources occur throughout the course; presents approaches for evaluation of sensitivity and uncertainty of results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction Engineering major
CEE	573	Transportation Operations	Driver, vehicle, and roadway characteristics; traffic control devices; traffic engineering studies; and transportation system management measures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	576	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student; Credit is allowed for only CEE 475 or 576

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CEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	581	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student; Credit is allowed for only CEE 581 or SOS 552
CEE	582	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Prerequisite(s): Civil, Environmental, and Sustainable Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 483 or CEE 583
CEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	585	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MS, MSE or PhD Civil, Environmental and Sustainable Engineering major. Credit is allowed for only CEE 481 or CEE 585
CEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering MS or MSE student
CEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering PhD student
CEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Pre-requisite: Civil Engineering PhD student

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CEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering PhD student
CEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Prerequisite(s): Civil Engineering PhD student
CEL	100	Great Ideas Politics & Ethics	Introduces fundamental debates and ideas of politics in both the West and beyond. Surveys ancient, medieval and modern thinkers in the Greek, Jewish, Christian and Muslim traditions, tracing their influences on contemporary debates with focus on the great questions of human nature, social and political life, and the relationship between religion and politics. Studies both the ideas and historical statesmanship of such figures as Plato, Cicero, Tertullian, Aquinas, Saadyah Gaon, Maimonides, Al-Farabi, Ibn Rushd (Averroes) and Al-Ghazali, as well as various leaders and writers from modernity in America and abroad. Includes separate discussion to encourage active learning; expects students to write analytical papers and make a class presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 100 or CEL 194 (Great Ideas of Politics and Ethics)
CEL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	200	Great Debates Amer Pol & Econ	Introduces fundamental ideas and debates about liberty and equality in American thought from the colonial era to the present, focusing on major political and economic figures and issues—ideas that continue to shape political and economic debates in 21st-century America, thus providing crucial foundations for future leadership roles in either public affairs or the private sector. A major theme is the tension between liberty and equality and between constitutionalism and democracy, in three centuries as a democratic, commercial republic. Includes separate discussion sessions at the end of each week to encourage active learning; expects students to write analytical papers and make a class presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 200 or CEL 294 (Great Debates in American Politics and Economics)
CEL	235	Debating Amer Constitutionalism	Examines the arguments and questions raised by the Federalists and Anti-Federalists during their debates over the 1787 Constitution, which provide resources to understand and contribute to contemporary political debates. Federalists and Anti-Federalists debated such fundamental issues as political power, federalism, republicanism, representation, separation of powers, protection of rights, slavery and the character of the people and their leaders. They model how intellectually deep, and morally serious, public discourse can be. Students study their arguments and, with the help of Tocqueville's Democracy in America, apply these debates to our current politics, while considering the rhetorical and other demands placed upon statesmen in constitutional, democratic systems. Students write analytical papers and participate in a simulation of a modern-day constitutional convention.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 235 or CEL 294 (Federalists, Anti-Federalists & Enduring Debate)
CEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	300	Capitalism & Grt Econ Debates	Explores the relationship, positive or negative, between markets and morality in a capitalist system. Approach is historical and comparative, beginning with the classical world which, for the most part, looked down on economic activity. Then considers the modern philosophers and political economists most associated with both the rise of capitalism and the emergence of the science of political economy. Readings come from Aristotle, Locke, Mandeville, Smith and Marx, among others.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 300 or CEL 394 (Capitalism and Great Economic Debates) OR Visiting University Student

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CEL	305	Pol Philosophy & Statesmanship	Examine the themes of justice and leadership in democracy and war through the texts of classical political thinkers, including Plato's Republic, Aristophanes' Clouds, Aristotle's Politics and Ethics, and Thucydides' account of The Peloponnesian War. Investigates questions of political leadership, ambition and the common good. Proceeds through discussion and student-led presentations of the big questions these texts raise.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 305 or CEL 394 (Classical Political Philosophy & Statesmanship)
CEL	320	Debating Modern Pol Liberty	Examines crucial debates in modern political thought, especially in the United States. A focus is defining what is distinctive about "modern thought," with recourse to Tocqueville's Democracy in America on the difference between ancien régime monarchies and modern liberal democratic polities. Other primary readings include works from such seminal moderns as Machiavelli, Hobbes and Locke, but America (not Europe) is the ultimate focus. Queries the core documents and ideas of the American Founding, and discerns the complex interplay of classical republican and liberal intellectual traditions. Close reading of The Federalist and selected Anti-Federalist writings prepare for a broader re-examination of the American political tradition, concluding with the ongoing dispute among progressivism, socialism and conservatism.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 320 or CEL 394 (Mod Political Thght:Orgns & Debats abt Mod Librty)
CEL	345	Classics of Mod Econ Thought	Addresses how major economic thinkers since Adam Smith (and his contemporaries) have dealt with the political, moral and economic issues that arise from modernity's embrace of the goal of economic progress. Course readings cover the age of Smith and Rousseau up to the times of Thomas Piketty and Deirdre McCloskey. Features close readings and discussion of primary texts and class presentations. Students write analytical papers on these important authors and debates.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 345 or CEL 394 (Clsscs of Mod Econm Thght:Smith to Hayek & Beyond)
CEL	375	Politics, Leaders & Revolution	Examines political thought and political leadership in the era of the American, French, Haitian and Latin American Revolutions. Begins with a look at Enlightenment political thought, focusing on natural rights, constitutionalism and political economy. Then considers leading political ideas connected with each of the great upheavals that began with the American Revolution and ended, 50 years later, with the independence of Latin America. Examines the record of political leadership during the same episodes, via biographies of figures such as Washington and Jefferson, Sièyes and Robespierre, Toussaint and Napoleon, Bolivar and San Martin.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 375 or CEL 394 (Politics & Leadership in the Age of Revolution)
CEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	475	Statesmanship & Am Strategy	Discusses great ideas and figures in political leadership and statesmanship, from ancient Greece and early modern Europe to America's founding and the present global uncertainty, especially the major arguments about war, peace and international affairs--ideas that shape foreign policy and grand strategy debates in the 21st century, thus providing crucial foundations for future leadership roles. Major thinkers and episodes include Thucydides, Plutarch, Montesquieu, George Washington, Lincoln, Truman and the Cold War, and Reagan, as well as contemporary debates about America's post-Cold War strategies for its leadership role in global affairs. Incorporates a Marshall brief (a policy presentation) and a group simulation exercise.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 475 or CEL 494 (Statesmanship and American Grand Strategy)
CEL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		
CEL	485	Capstone	Integrates theory and practice by studying selected topics of the intellectual foundations for leadership with exemplars of leadership and statesmanship, culminating in a research presentation and paper.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 60 hours
CEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		

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CEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		
CEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-7		
CEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	501	Literary Leaders	Students read a selection of the great books said to contribute to what is known as Western civilization. Beginning with accounts of the beginnings, read and compare Genesis with Hesiod's Theogony. Also examines ways people accepting these different views of the world and the god(s) lived and organized their communities by comparing the stories of the patriarchs in Genesis with the depictions of the ancient heroes in Homer's epic poems, the Iliad and Odyssey, Sophocles's tragedy, Oedipus the King, and Aristophanes's comedy, Lysistrata. Since we also investigate the development and significance of different literary genres, then examines the ways in which Virgil adapted the Greek epic in light of Roman experience in his Aeneid, and the modifications Shakespeare made on both Greek tragedy and comedy during the Renaissance in Macbeth and Midsummer's Night Dream.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 501 or CEL 598 (Literary Leaders)
CEL	503	Political Philosophy & Justice	Provides an overview of the four major periods of political thought--ancient, medieval, modern and postmodern--and engages in close readings of classic texts from each of these periods. The concept of justice serves as an organizing theme, complemented by analyses of other political concepts such as virtue, the common good, natural law, rights, liberty, and equality. Texts include Plato's Republic, St. Thomas Aquinas' Summa Theologica, Machiavelli's Prince, John Locke's Second Treatise of Government, and John Rawls' A Theory of Justice, among others.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	510	Classic Texts in Nat Sci & Phi	Studies the development of natural philosophy and theories of scientific knowledge from Plato and Aristotle to Newton and Darwin. Gives particular attention to the period known as the Scientific Revolution, inspired most famously by Francis Bacon. Explores the relationships among natural philosophy, epistemology, moral philosophy and political philosophy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	513	Classic Texts in Leadership/Statesmanship	Encounters classic texts featuring analyses and discussions of important historical leaders and their actions. These texts both situate examples of leadership and statesmanship in their historical context, and highlight timeless principles of wise and effective leadership. Texts include Thucydides' History of the Peloponnesian War, Plutarch's Lives, Cicero's On Duties, Shakespeare's histories, and the writings and speeches of Abraham Lincoln.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	520	Classic Texts in Foundations of Logic	Provides an introduction to the principles of logical thought through close readings of Euclid's Elements and Aristotle's Organon. Students learn and demonstrate Euclidean geometric proofs in class, and reflect in discussion upon the relationship between Euclidean geometry and the logical principles analyzed in Aristotle's works.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	501	Computer Systems I	Introduces digital CMOS circuit and logic design and signal processing and analysis. Design of digital CMOS logic gates, combinational and sequential logic circuits, arithmetic logic unit; register-transfer-level design; Fourier and z transforms, filters, sampling, random variables, distribution and density functions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre-requisites: Computer Engineering Graduate student; Credit is allowed for only CEN 501 or 591 (Computer Systems I)
CEN	502	Computer Systems II	Covers fundamentals of computer architecture and focuses on basic principles of systems programming, operating systems, compilers and networking topics that cover the computer science to computer engineering interface.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre-requisite: Computer Engineering Graduate student; Credit is allowed for only CEN 502 or 591 (Computer Systems II)
CEN	503	Algo for Comp-Aided Desn of Di	Provides the algorithmic underpinnings of CAD (Computer-Aided Design) tools for digital systems—from high-level algorithmic specifications down to an optimized network of logic cells. Covers the underlying theory and algorithms that have been incorporated into many commercial tools over the past two decades. Covers behavioral to RTL (Register-Transfer Level) synthesis, and from RTL to logic, including combinational and sequential network optimization, gate and interconnect timing models, retiming of sequential networks, clock tree design and optimization. To be successful in this course, students need an undergraduate background in combinational and sequential logic design, discrete mathematics, and a strong background (preferably at the graduate level) in fundamentals of data structures and algorithms; strong experience in programming (C or C++) and coding and documentation standards. (All code developed in class is in Python).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Scie or Comp Engr or Elect Engr graduate student; Credit is allowed for only CEN 503 or CEN 591 (Digital Logic Synthesis&Verifi) or CEN 598 (Algo Synth & Opt Digital Sys) or CSE 591 (Digital Logic Synthesis&Verifi)
CEN	571	Hardware Accele and FPGA Compu	Graduate students collaboratively work on challenging class projects that focus on designing and optimizing hardware accelerators for computationally intensive algorithms to advance real-life applications. Topics include energy-delay models, timing, circuit optimization, architecture techniques, architecture flexibility, DSP arithmetic, data flow control, and field-programmable gate (FPGA) essentials. In order to be successful in this course, students should have prior knowledge of at least one of the following topics: (1) digital integrated circuits and VLSI systems; or (2) a domain of computational algorithms, e.g., digital signal processing, machine learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, or Electrical Engineering graduate student. Credit is allowed for only CEN 571 or CEN 598 (Hardware Acceleration and FPGA Computing)
CEN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CEN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHE	211	Intro to Chemical Processing	Applies chemical engineering analysis and problem solving to chemical processes material and energy balance methods and skills.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHM 116 with C or better; MAT 266 or 271 with C or better OR Visiting University Student
CHE	231	IntroTransport Phenom I:Fluids	Transport phenomena, with emphasis on fluid systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 211 with C or better; MAT 267 or 272 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed
CHE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		
CHE	334	Intro TP II:Heat/Mass Transfer	Applies heat and mass transport principles. Design of heat exchangers and continuous contactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; MAT 275 with C or better OR Visiting University Student
CHE	342	Intro Applied Chem Thermodyn	Applies conservation and accounting principles with nonideal property estimation techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student

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CHE	352	Chemical Engineering Lab I	Engineering lab equipment, data collection and analysis; strengthens ability to generate written reports and oral presentations; reinforces teamwork skills; strengthens and extends the understanding of earlier technical contents in the curriculum; strengthens abilities in recognizing and understanding key issues associated with lab and process safety.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 334 with C or better; CHE 342 with C or better; PHY 131 with C or better
CHE	384	Numerical Methods Chem Eng	Study and application of numerical methods in solving problems commonly encountered in chemical engineering. Emphasizes chemical engineering applications using MATLAB and Excel. Roots, linear algebraic equations, matrices, curve fitting, differentiation, integration, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s) w/C or better: Chm Engr BSE major; MAT 242, 342, 343; MAT 274, 275; Pre- or coreq(s): MAT 267, 272 w/C or better if completed; Credit allowed for CEE 384, CHE 384, CHE 394 (Num Mthds for Chm Eng), or MAE 384 OR Visiting University Student
CHE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		
CHE	432	Principles Chem Engr Design	Multicomponent distillation, engineering economics, equipment sizing and costs, plant operation economics, process safety, and simulation and optimization techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	433	Modern Separations	Design of modern separation equipment in chemical engineering other than fractionation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better
CHE	442	Intro Chemical Reactor Design	Applies kinetics to chemical reactor design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better; Credit is allowed for only CHE 442 or CHE 505
CHE	451	Chemical Engineering Lab II	Operation, control and design of experimental and industrial process equipment; strengthens abilities in recognizing and understanding key issues associated with lab and process safety; group research projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 352 with C or better; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	461	Process Dynamic Control	Process dynamics, instrumentation, and feedback applied to automatic process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s): Chemical Engineering BSE major; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	462	Process Design	Applies economic principles to optimize equipment selection and design; process safety; development and design of process systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 432 with C or better; CHE 433 with C or better; CHE 442 with C or better
CHE	468	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prereq(s): Chem Eng BSE mjr; CHE 231 w/ C or better; CHM 233 w/ C or better; Credit for only CHE 468 or CHE 568 or CHE 494(PolyPrin & Proc) or CHE 598(PolyPrin & Proc) or CHM 494(PolyPrin & Proc) or CHM 598(PolyPrin & Proc) OR Visiting University Student
CHE	469	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engr BSE major; CHE 342 OR Civil Engr BSE major; CEE 361 OR Environmental Engr BSE major; EVE 302 OR Materials Scie & Engr BSE major; MSE 330; Credit for only CEE 469 or CEE 569 or CHE 469 or CHE 569 OR Visiting University Student
CHE	473	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells) OR Visiting University Student
CHE	475	Biochemical Engineering	Applies chemical engineering methods, mass transfer, thermodynamics, and transport phenomena to industrial biotechnology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisite: CHE 334 and 442

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CHE	477	Inorganic Membrane & Thin Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 433 or MSE 420; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Films) or CHE 598 (Inorganic Membrane and Films)
CHE	478	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engr BSE major; CHM 116 w/ C or better; CHE 231 w/ C or better; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Tech) or CHE 598 (Biomass Energy Conversion Tech) OR Visiting University Student
CHE	479	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 342 with C or better; CHE 442 with C or better; Credit is allowed for only CHE 479 or CHE 494 (Microbial Bioprocess Engineering) or CHE 598 (Microbial Bioprocess Engineering)
CHE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		
CHE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CHE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student
CHE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
CHE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
CHE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-3		
CHE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MSE 518, EEE 518, MAE 518, MSE 475, or CHE 518
CHE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
CHE	543	Thermodynamics of Chemical Sys	Classical and statistical thermodynamics of nonideal physicochemical systems and processes; prediction of optimum operating conditions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisites: Graduate Engineering student

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CHE	544	Chemical Reactor Engineering	Reaction rates, thermodynamics, and transport principles applied to the design and operation of chemical reactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	561	Advanced Process Control	Dynamic process representation, linear optimal control, optimal state reconstruction, and parameter and state estimation techniques for continuous and discrete time systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	568	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 468 or CHE 568 or CHE 494 (Polymer Principles & Proc) or CHE 598 (Polymer Principles & Proc) or CHM 494 (Polymer Principles & Proc) or CHM 598 (Polymer Principles & Proc)
CHE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only CEE 469 or CEE 569 or CHE 469 or CHE 569
CHE	573	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells)
CHE	577	Inorganic Membrane and Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Film) or CHE 598 (Inorganic Membrane and Film)
CHE	578	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Technology) or CHE 598 (Biomass Energy Conversion Technology)
CHE	579	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 579 or CHE 598 (Microbial Bioprocess Engineering)
CHE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student

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CHE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): graduate CHE major
CHE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Pre-requisite: Graduate Engineering student
CHE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHI	101	First-Year Chinese I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student
CHI	102	First-Year Chinese II	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 101; Credit is allowed for only CHI 102 or MND 102 OR Visiting University Student
CHI	110	Intensive Chinese I	Adopts different pedagogical approaches to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, appropriate cultural information related to language use is also an important component of instruction. Trains students to be able to function successfully in Chinese culture. Students don't simply learn to "speak Chinese" or read and write characters as some form of party trick. Teaches a practical skill set that allows students to communicate and behave appropriately in Chinese culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only CHI 101 or CHI 102 or CHI 110
CHI	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
CHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	201	Second-Year Chinese I	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 102; Credit is allowed for only CHI 201 or MND 201 OR Visiting University Student
CHI	202	Second-Year Chinese II	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 201; Credit is allowed for only CHI 202 or MND 202 OR Visiting University Student
CHI	205	Chinese Calligraphy	Introduces styles and techniques of Chinese writing. Requires no knowledge of Chinese or Japanese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		

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CHI	210	Intensive Chinese II	Intensive 2nd-year college-level Modern Standard Chinese designed for students who are highly motivated and have successfully completed at least 1st-year college-level Modern Standard Chinese language course or equivalent. Reviews and reinforces 1st-year Chinese grammatical patterns and introduces new ones in order to further develop students' communicative competence in listening, speaking, reading and writing in modern Chinese. Introduces over 500 new characters and presents and expands an equal number of spoken vocabulary items. Students increase their vocabulary, consolidate their grammar, describe objects and express ideas more accurately and fluently.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): CHI 102 with B or better or CHI 110 with C or better; Students who have credit for CHI 201 or CHI 202 may not enroll in CHI 210
CHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	301	Third-Year Chinese I	Expansion of proficiency in listening comprehension, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student
CHI	302	Third-Year Chinese II	Continuation of CHI 301.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 301 with C or better OR Visiting University Student
CHI	307	Intro to Literary Chinese I	Reading in various genres of pre-20th century literature (wen-yen), with analysis of the structure of the classical writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 202, CHI 210, JPN 202, or KOR 202 with C or better OR Visiting University Student
CHI	308	Intro to Literary Chinese II	Continuation of CHI 307.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 307 with C or better
CHI	321	Chinese Literature	Masterworks of the tradition from the 7th century BCE through the 13th century. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
CHI	322	Chinese Literature	Masterpieces from the later tradition and its transition to modern times. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
CHI	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
CHI	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
CHI	338	The Daoist Bible: Daode jing	At 5,000 words, the Daode Jing (Tao-te ching) is arguably the shortest religious book in the world. It is also the most widely translated, after the Christian Bible. Introduces the wisdom of the Old Boy, Laozi himself, and to some of the startlingly wide variety in which his short, gnomic utterances have been interpreted. No knowledge of Chinese required; all readings and lectures in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338, 394 (Daoist Bible: The Dao De Jing) or REL 338
CHI	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
CHI	345	Chinese Film and Civilization	Screening and discussion of recent films from China, Taiwan, and Hong Kong in the context of modern Chinese civilization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346
CHI	348	Pathways into Chinese Culture	Introduces some important aspects of China's cultural history and traditions. Provides an overview of Chinese history and culture and reviews major developments in science and technology. Incorporates current social and cultural topics and reviews through the lens of historical context. Classroom activities enable students to gain a better understanding of traditional Chinese culture with respect to both elite and popular culture. Conducted in Mandarin and is designed for the students who are currently enrolled in CHI 301 and CHI 401 or whose Chinese proficiency level in all four skills (speaking, listening, reading and writing) are at the intermediate mid to intermediate high level according to ACTFL guidelines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student

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CHI	380	The Chinese Language	Introduces the Chinese languages from linguistic perspectives. Topics include the linguistic structure and characteristics (phonetics, phonology, morphology and syntax) of the Chinese language; linguistic history and dialects of Chinese; and its relationship with culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	401	Fourth-Year Chinese I	Focuses on solidifying and improving students' knowledge of modern Mandarin. Emphasizes learning strategies to increase reading and listening comprehension, as well as further strengthening oral fluency and written skills. Surveys a wide variety of original text and media materials, in both full-form and simplified characters. Conducted in Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 302 with C or better OR Visiting University Student
CHI	402	Fourth-Year Chinese II	Continuation of CHI 401.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 401 with C or better OR Visiting University Student
CHI	407	Chinese Acad & Prof Prps I	Part of the Chinese Flagship program; course has a three-fold objective: (1) to improve language proficiency in all four language skills; (2) to support other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; and (3) to develop the use of explicit language learning strategies that support professional-level literacy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 402 with C or better OR Visiting University Student
CHI	408	Chinese Acad & Prof Prps II	Part of the Chinese Flagship Program. Improves language proficiency in all four language skills; supports other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; develops the use of explicit language learning strategies that supports professional level literacy. All course work in Mandarin Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 407 with C or better
CHI	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
CHI	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
CHI	470	Modern Chinese Lit & Culture	Readings in modern Chinese literary texts, including prose, fiction, and poetry. Course content changes with instructor.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302 with C or better
CHI	482	History of Chinese Language	Introduces the history of the Chinese language. Graduate/advanced undergraduate-level introductory course on the historical changes of the sounds, writing system, grammar, and other aspects of the Chinese language. Topics include the historical phonology of Chinese, development of graphs (Hanzi), some topics of syntactic changes in texts, morphology, lexicography, cultural implication of language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302; CHI 308 OR Visiting University Student
CHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
CHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
CHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
CHI	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHI	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501
CHI	514	Advanced Classical Chinese	Close readings in selected premodern texts, with focus on special grammatical features, and increased vocabulary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	561	Readings Traditional Xiaoshuo	Introduces major issues, texts, and resource materials for the study of narrative forms, including short stories and longer works of fiction. Focuses on the period from 1400 to 1900. One year of university-level classical Chinese or equivalent proficiency; three years of university-level modern Chinese recommended.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
CHI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHI	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
CHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	101	Introductory Chemistry	Elements of general chemistry. Adapted to the needs of students in nursing and kinesiology and those preparing for general chemistry. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	
CHM	107	Chemistry and Society	General chemical principles and concepts presented in context of social and technological issues, e.g., energy, pollution, global warming, and others. This lecture course may be combined with the laboratory CHM 108 for those interested in lab course credit. Cannot be used for major credit in chemical or biochemical sciences. Both CHM 107 and CHM 108 must be taken to secure SQ credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	
CHM	108	Chemistry and Society Lab	Experiments in chemical principles presented in chemistry and society lectures (CHM 107). Students must complete both CHM 107 and CHM 108 to receive an SQ (General Studies).	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or Corequisite(s): CHM 107 OR Visiting University Student
CHM	111	Gen Chem Lab for Majors I	Laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 117 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Suitable for students who have completed introductory chemistry at the high school level. Both CHM 117 and CHM 111 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 117 with C or better OR Visiting University Student

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CHM	112	Gen Chem Lab for Majors II	Continuation of CHM 111 laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 118 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	;Prerequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 111 with C or better; Pre- or corequisite(s): CHM 118 with C or better
CHM	113	General Chemistry I	Principles of chemistry. Adapted to the needs of students in the physical, biological, and earth sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better, or Mathematics Placement Test score of 50% or higher, or ALEKS score of 61 or higher, OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265 or 270 with C or better if completed OR Visiting University Student
CHM	114	General Chemistry for Engrs	Chemical principles with emphasis toward engineering. Students without high school chemistry or are chemical engineering majors must enroll in the CHM 113, 116 sequence instead of CHM 114.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better, or Mathematics Placement Test score of 50% or higher, or ALEKS score of 61 or higher, OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
CHM	116	General Chemistry II	Continuation of CHM 113. Equilibrium theory, thermodynamics, kinetics, electrochemistry, nuclear chemistry, descriptive chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 113, 114, or 117 with C or better OR Visiting University Student
CHM	117	General Chemistry for Majors I	Lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the CHM 111 laboratory course. Covers electronic structure of atoms and molecules, intermolecular forces, bonding models, molecular geometry, physical states of matter, gas laws, and chemistry of condensed matter and modern materials. Highlights chemical reactivity, periodic trends and descriptive chemistry. Both CHM 111 and CHM 117 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prereq(s): Biochmtry, Biophyscs, or Chmstry mjr; CHM 101 w/ C or better, or Math Placement Test score of >=50%, or ALEKS score of >=61, or Pre- or coreq(s): MAT 170, 171, 210, 251, 265, or 270 w/ C or better if completed OR Visiting University Student
CHM	118	Gen Chemistry for Majors II	Continuation of CHM 117 lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the major's CHM 112 laboratory course. Topics include thermodynamics, properties of solutions, chemical equilibrium, aqueous chemistry, acids and bases, electrochemistry, chemical kinetics, nuclear chemistry, coordination chemistry. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): Biochemistry, Biophysics, or Chemistry major; CHM 117 with C or better
CHM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		Pre-requisites: Biochemistry or Chemistry major; Maximum 45 hours
CHM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	231	Elementary Organic Chemistry	Surveys organic chemistry, with emphasis on the reactivity of basic functional groups. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): CHM 101, 114, 116, or 118 with C or better OR Visiting University Student
CHM	233	General Organic Chemistry I	Chemistry of organic compounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	234	General Organic Chemistry II	Continuation of CHM 233.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 233 or 333 with a C or better; Credit is allowed for only CHM 234 or CHM 334 OR Visiting University Student
CHM	235	Elementary Organic Chem Lab	Organic chemistry experiments in synthesis, purification, analysis, and identification. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): CHM 231 with C or better if completed OR Visiting University Student
CHM	237	Gen Organic Chemistry Lab I	Microscale organic chemical experiments in separation techniques, synthesis, analysis and identification, and relative reactivity.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 233 with C or better if completed; Credit is allowed for only CHM 237 or CHM 337 OR Visiting University Student

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CHM	238	Gen Organic Chemistry Lab II	Continuation of CHM 237.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 237 or 337 with C or better; Pre- or corequisite(s): CHM 234 with C or better if completed; Credit is allowed for only CHM 238 or 338 OR Visiting University Student
CHM	240	Math Methods in Chemistry	Introduces mathematical/computational methods in chemical kinetics, thermodynamics, quantum chemistry. Mathematical-based computer lab.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	CS	Prerequisite(s): CHM 116 or 118 with C or better; Pre- or corequisite(s): MAT 272 or 267 with C or better if completed
CHM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	302	Environmental Chemistry	Explores major environmental issues, problems, and solutions from analytical and chemistry perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better OR Visiting University Student
CHM	303	Environmental Chemistry Lab	Lab in environmental chemistry to complement CHM 302. First-hand experience with sampling methods, analytical techniques, and environmental lab methods. Both CHM 303 and CHM 348 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2	L	Pre- or corequisite(s): CHM 302 with C or better if completed
CHM	325	Analytical Chemistry	Advanced principles and theory of quantitative analysis, including stoichiometry, equilibria, photometric methods, electrochemistry, separation processes, statistical data analysis, and applications to advanced topics in analytical chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	326	Advanced Analytical Chem Lab	Practical methods of quantitative analysis for chemistry majors, including titrimetric, gravimetric, and photometric analysis, and analytical separation processes, statistical data analysis, and applications to advanced topics in chemical analysis.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 325 with C or better if completed OR Visiting University Student
CHM	327	Instrumental Analysis	Principles of instrumental methods in chemical analysis. Electroanalytical and optical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 325 with C or better; CHM 326 with C or better; Pre- or corequisite(s): CHM 346 with C or better if completed
CHM	328	Instrumental Analysis Lab	Experiments in chemical analysis by electroanalytical and optical techniques.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2		Pre- or corequisite(s): CHM 327 with C or better if completed
CHM	341	Elementary Physical Chemistry	Thermodynamics, equilibrium, states of matter, solutions, and chemical kinetics. For students in premedical, biological, and educational curricula.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better; MAT 251, 265, or 270 with C or better; PHY 101, 112, or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student
CHM	343	Elementary Physical Chem Lab	Physical chemistry experiments.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 341 or CHM 341 with C or better if completed; Credit is allowed for only CHM 343 or CHM 348 and CHM 349 OR Visiting University Student
CHM	345	Physical Chemistry I	Introduces quantum chemistry with application to electronic structure and dynamics of atoms and molecules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better; CHM 240 OR PHY 201 OR both MAT 274 or 275; MAT 242, 342 or 343 with C or better; MAT 267 or 272 with C or better; PHY 131 or 151 with C or better OR Visiting University Student
CHM	346	Physical Chemistry II	Introduces equilibrium and statistical thermodynamics. Laws of thermodynamics, equations of state, multicomponent chemical and phase equilibria, and electrochemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 345 with C or better
CHM	348	Physical Chemistry Lab I	Lab experiments in spectroscopy and computational chemistry. To secure L General Studies credit the following must be taken: CHM 303 & CHM 348 or CHM 348 & CHM 349 & CHM 452.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Pre- or corequisite(s): CHM 345 with a C or better if completed OR Visiting University Student
CHM	349	Physical Chemistry Lab II	Lab experiments in thermodynamics, electrochemistry, and computational chemistry. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Pre- or corequisite(s): CHM 346 with C or better if completed

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CHM	385	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BIO 100, BIO 182, BIO 282, GLG 101, or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, or 114 with C or better; Credit is allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
CHM	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	433	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, and Woodward-Hoffmann rules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better; CHM 234 or 334 with C or better; Credit is allowed for only CHM 433 or CHM 531 OR Visiting University Student
CHM	435	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 361 or BCH 461 or CHM 460; CHM 234 or CHM 334; Credit is allowed for only CHM 435 or CHM 535 OR Visiting University Student
CHM	442	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 101, 114, 116, or 118 with C or better; Credit is allowed for only CHM 442 or CHM 494 (Practical Nuclear Magnetic Resonance Spectroscopy) or CHM 542
CHM	452	Inorganic Chemistry Laboratory	Preparation and characterization of typical inorganic substances, emphasizing methods and techniques. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Pre- or corequisite(s): CHM 453 with C or better if completed
CHM	453	Inorganic Chemistry	Principles and applications of inorganic chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better OR Visiting University Student
CHM	460	Biological Chemistry	Structure and function of macromolecules and their involvement in the processing of energy and information by living cells.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; CHM 346 with C or better
CHM	471	Solid-State Chemistry	Crystal chemistry, thermodynamics and electrochemistry of solids, nonstoichiometric compounds, diffusion and solid-state reactions, crystal growth, and selected topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre- or corequisite(s): CHM 346 with C or better if completed; Credit is allowed for only CHM 471 or CHM 571
CHM	480	Methods of Teaching Chemistry	Organization and presentation of appropriate content of chemistry; preparation of reagents, experiments, and demonstrations; organization of stock rooms and laboratories; experience in problem solving.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		
CHM	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
CHM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
CHM	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Prerequisite(s): CHM 302 or GLG 321 or GLG 481 with C or better; Credit is allowed for only CHM 489 or GLG 489 or GLG 490 (Field Geochemistry)
CHM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
CHM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student
CHM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		

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CHM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	501	Current Topics in Chemistry	-	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate students (degree and non-degree); Credit is allowed for only BCH 520 or CHM 520
CHM	524	Separation Science	Addresses principles and applications for all areas of chemical separations. Emphasizes separations principles in microfluidics and its interface with nanotechnology and traditional electronic materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	531	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, molecular orbital theory, and Woodward-Hoffmann rules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: degree- or nondegree-seeking graduate. Credit is allowed for only CHM 433 or CHM 531
CHM	535	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate degree or non-degree seeking students; Credit is allowed for only CHM 435 or 535
CHM	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
CHM	541	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 541 or MSE 524
CHM	542	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 442 or CHM 542 or CHM 596 (Practical Nuclear Magnetic Resonance Spectroscopy)
CHM	543	Computational Chemistry	Provides basic concepts and practical experience in computational chemistry as applied to molecules and solids. Systematically covers theoretical background and applied aspects of electronic structure methods/simulation, and related visualization techniques. Provides weekly laboratory session will provide hands-on experience with state-of-the-art molecular and solid-state simulation/visualization packages, with an emphasis on their reliability, predictive capability and practical limitations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	546	Molecr Spectroscopy/Group Thy	Applies quantum mechanics to the general problem of the interaction of light with molecular systems. Angular momentum and group theory. Symmetry classifications. Overview of the formalism and experimental techniques in different resonant-based spectroscopies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	553	Advanced Inorganic Chemistry	Principles of modern inorganic chemistry applied over the entire periodic system. Bonding theory, chemical reactivity, spectroscopic and magnetic properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560
CHM	571	Struct, Bond, Symmetry in Mls	Principles of structural and materials chemistry, emphasizing crystal chemistry. Symmetry of periodic structures (space groups), factors determining bond lengths and coordination geometries, and the role of structure in determining physical properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 471 or 571
CHM	581	Structure of Matter/Properties	Models of matter and its properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581

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CHM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	100	Optimizing Health&Performance	Explores concepts, attitudes, research and practices associated with the optimization of health and performance. Students gain practical and foundational knowledge regarding evidence-based practice, nutrition, physical activity, executive function, strategies and cognition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): College of Health Solutions undergraduate student; Credit is allowed for only CHS 100 or CHS 300 OR Visiting University Student
CHS	101	The ASU Experience	Required, one-hour course, offered in sections capped at 19 and designed to introduce all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university. Covers several core topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		
CHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CHS	201	Intl Indigenous Health	This course aims to develop student's understanding of core concepts in the health and well-being of Indigenous peoples worldwide, with particular focus on the Aboriginal and Torres Strait Islander peoples in Australia and Indigenous peoples in United States (or the Americas more broadly). The course highlights the differences in distribution of disease and health disparities between Indigenous and non-Indigenous peoples and develops an understanding of underlying interrelated physical, psycho-social, cultural and other determinants of Indigenous peoples' health. Students will be provided with examples of evidence-based research and health practice to learn about the ways in which Indigenous health and well-being can be supported.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	260	Health Professions Terminology	Prepares students for a field in the health care field and covers medical terms related to all the major body systems including: muscular system, skeletal system, respiratory system, circulatory system, digestive system, reproductive system and urinary system.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only CHS 260 or KIN 294 (Health Professions Terminology)
CHS	280	Exptl Comm Hlth & Research	Provides experiential learning in community health and/or research. Gives students the opportunity to develop professionally; enhance their health education; take ideas and concepts beyond the classroom; and gain experiences and real-world perspectives in research, clinical or community-based settings. Students interact with faculty, researchers and/or professionals in the field across a range of observations and activities.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): College of Health Solutions student or Edson College of Nursing and Health Innovation student OR Visiting University Student
CHS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	300	The Science of Well-Being	A scientific exploration into lifelong well-being by examining evidence from health, history, neuroscience, physiology, sociology, positive psychology, life design and the science of happiness. Students analyze and practice skills, strategies and mindsets that facilitate self-awareness, resilience, social connections and happiness to design personal and professional well-being.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): College of Health Solutions undergraduate major; minimum 45 hours; Credit is allowed for only CHS 100 or CHS 300 OR Visiting University Student
CHS	301	Epidemiology Intl Pub Health	Epidemiology and its use in public health research and practice. This course introduces students to epidemiological principles and methods. It aims to enable students to apply an epidemiological approach to the study of disease and illness, to interpret and assess the quality of evidence of a range of study designs and report on epidemiological research.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	303	Health Promotion	Health Promotion is a fundamental component of any approach to public health and population health, whether it be research, policy or practice. The World Health Organization defines health promotion as the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions. (http://www.who.int/topics/health_promotion/en/). This course provides an overview of health promotion including examination of the social determinants of health, health literacy and foundations in health promotion. During the course students will explore the role of health promotion in addressing a range of current global health issues and their relevance to the field of public health. Students will examine contemporary perspectives on health and health promotion contributions to public health and population health responses. The course enables students to gain an understanding of how health can be defined from different perspectives, and develop core knowledge of health promotion including its foundation theories, principles and concepts. The course will equip students with the capacity to engage in public health and population health through the essential health promotion skills and understandings.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major

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CHS	304	Communicable Disease	This course will introduce students to the burden of infectious or communicable disease worldwide. Students will learn about the theory of transmission modes, surveillance, outbreak investigation, current disease prevention, control and management strategies, and emerging and re-emerging infections. Key case studies covering different types of communicable diseases will be used to illustrate these important concepts. Current and future challenges in communicable disease control will be highlighted.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	305	Princ Prvent & Pub Hlth Surv	Disease surveillance and population health monitoring represents one of the most important tools for public health, for early disease detection and prevention, and the monitoring and evaluation. Early detection of and rapid response to a public health threat has huge potential to save lives and costs from preventing hospitalizations and deaths. This course provides an overview of different types of surveillance systems and the sources of data that are used in such systems. Students learn to assess challenges and limitations associated with different types of public health surveillance systems and develop the skills to examine the tools and approaches that can be used to improve the effectiveness of public health surveillance systems. The course looks at principles of disease prevention more broadly. Public health prevention measures are discussed including immunization and screening, using case studies for both communicable and non-communicable diseases. The role of epidemiological and social factors is also considered.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major; Pre- or corequisite(s): CHS 301; CHS 304; HCD 300
CHS	306	Public Hlth Policy & Programs	The overall aim of this course is to enable students to develop their understanding of both public health policy and programs as a part of public health practice. Students will learn about the concept and role of policy and the key concepts, models and approaches to designing and evaluating public health programs. Case studies from multiple countries and contexts will be used as teaching material.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	307	Health Leadership	The course aims to develop students understanding of different approaches to leading and managing at different levels in health services in local and international contexts to improve individual, community and population level outcomes. Students will be introduced to the common and overlapping skills and features of effective health leadership within public health agency settings requiring coordinated system-wide action through to health care management in more clinically focused patient delivery settings. Topics include management and leadership theories and models; systems perspectives and strategic thinking; influence, power and leading change; managing interprofessional teams and motivating staff; conflict management and improving health worker performance.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	308	Comparative Health Systems	Principles and practice of health system analysis, the sources and utilization of information relating to health services, and frameworks for assessing health systems performance. Examines the constitutional, legal, economic, social and political environments within which health care systems operate. Compares different models of health system funding and operation. Reviews different health services organization and management, health service financing arrangements and the health workforce.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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CHS	309	Globl Chron Disease Prvnt&Ctrl	This course aims to enhance students' understanding of the major non-communicable diseases-specifically so-called "lifestyle diseases" including cardiovascular disease, cancer, type II diabetes, chronic lung disease- and the interaction between their associated lifestyle behaviors such as unhealthy diet, physical inactivity, tobacco use and alcohol use. Students will examine the concept of the epidemiological transition to provide insights into trends in the burden of lifestyle diseases and injuries globally and in developing countries. This course will help students to evaluate prevention and control approaches to lifestyle diseases, and to critique the modern social environment and lifestyle behaviors with respect to global health. Topics include: the global burden of disease, the epidemiological transition, injury prevention, health systems, global tobacco control, obesity, and global action plan on non-communicable diseases.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	340	Health Theory	Health theories help to frame health and health outcomes in our society. Applies health theories to medical problems in order to explore the different levels of influence on behavior: individual, social network, community, health system and policies. Helps students take a deeper look at the intersections between people and their environment as well as understand how influence on our health is constructed all around us.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 OR Visiting University Student
CHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	1-4		
CHS	401	Ethics in Public Health	This course provides an overview of ethical considerations and issues pertinent to public health and health care. Students will examine ethical theories and principles, and key legal concepts, and their application to health care and public health contexts. The course enables students to identify and analyse the ethical challenges of balancing the interests of individuals and communities within a health care context which is costly, complex and increasingly globalized. While the focus is on public health ethics which includes health policy and promotion, clinical and research ethics will also be examined as integral components of contemporary, cutting-edge health care service and delivery.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 45 hours; minimum 2.00 GPA
CHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
CHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
CHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		Prerequisite(s): minimum 45 hours
CHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): minimum 45 hours
CHS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	105	Computer Appls&Info Technology	Introduces business information systems from a business intelligence perspective and the uses of application software with emphasis on database and spreadsheet packages for efficient and effective problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	
CIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		

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CIS	235	Intro to Information Systems	Survey course introducing the competitive and strategic uses of information systems, how information systems are transforming organizations and their management, and the issues, difficulties, and opportunities facing the technology professional and business manager today.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105, 200 or 220 with C or better; MAT 210, 270, 211 or 271 with C or better; Credit allowed for only CIS 235 or CIS 236 OR Visiting University Student
CIS	236	Honors Information Systems	Introduces strategic leveraging of IS solutions and surveys different facets of IS in order to gain an understanding of how business problems are addressed and opportunities realized.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	Prerequisite(s): Barrett Honors student
CIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	300	Web Design and Development	Focuses on Web site development, including target audience, image presentation, page/content topic organization, site navigational functionality, implementation needs, and future needs. Web site design and development practice using business software products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR post-baccalaureate undergraduate student, OR non-degree student; minimum 2.00 GPA, OR graduate student OR Visiting University Student
CIS	308	Advanced Excel in Business	Covers advanced Excel skills using an applied focus on different types of decisions one may analyze using spreadsheet capabilities; graphs and charts to communicate complex analytics; pivot tables to slice and dice data for reporting.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	309	Business Process Management	Flow charting, swimlane diagramming, process simulation using modern tool suites. Teaches the types of process evaluation decision analytics most commonly used and covers applied process analysis in a variety of contexts.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	310	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of temporal, geospatial, topical and network business data while also making it easier to digest and utilize for business users.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	311	Business Project Management	Overview of project management emphasizing the fundamentals and analytics that can support project decision making. Covers project planning, resource and disruption management and problem resolution skills. Leverages widely available project management computer tools.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or CIS 236 with C or better; minimum 45 hours; Credit is allowed for only CIS 311 or CIS 394 (Project Management - Information Systems) OR Visiting University Student
CIS	312	Bus Mobile Commerce & Monetize	Teaches students the entire mobile commerce process starting with recognizing what it is, what it does, how to build it and the business value of it. Familiarizes students with software development platforms and ecosystems, strategies for development and deployment, and monetization strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better; Credit is allowed for only CIS 312 or CIS 294 (Business Mobile App Development and Monetization) OR Visiting University Student
CIS	315	Intro Business Data Analytics	Overview of analytics in the business context; concepts of strategic and operational analytics; overview of concepts like dimensional modeling, the Model Lifecycle, data mining, big data, KPIs and metrics, ERP and analytics, in-database/memory analytics; real-time analytics and data stream analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	325	Programming for Bus Analytics	Manipulating, processing, cleaning and crunching data with a focus on utilizing scripting and programming tools toward business applications. Also a practical, modern introduction to extraction, transformation and loading of enterprise data for business applications.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major or Comp Info Systems BS major or Business (Info Security) major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	340	Bus Info Systems Development I	Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to plan and analyze the needs of modern business information system development.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Computer Information Systems BS major; ACC 241, 242 or 271 with C or better; CIS 235 or 236 with C or better; ECN 221 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
CIS	345	Bus Info Systems Development II	Provides a clear understanding of the Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to design, implement, and support modern business information systems development.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Computer Information Systems BS major; CIS 340 with C or better OR Visiting University Student

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CIS	355	Bus DataWarehouse Data Modelin	SQL, stored procedures and data warehouse architectures; data warehouse requirements definition, design and analysis; overview of the steps in building information-enabled business models; role of data warehousing in data mining and analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 365 with C or better OR Visiting University Student
CIS	360	Business Database Concepts	Database theory, design, and application, including the entity-relationship model; the relational, hierarchical, and network database models; and query languages.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Accountancy BS or Business (Information Security) BA major; ACC 231, 232 or 261 with C or better; ACC 241, 242 or 271 with C or better; CIS 105 or 236 with C or better OR Visiting University Student
CIS	365	Business Database Systems	Focuses on business database and data warehousing systems, development and management. Topics include capturing business requirements using data modeling, SQL, data security, operational and analytical data stores and data integrity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Computer Information Systems BS major or Business Data Analytics BS major; CIS 235 or 236 with C or better OR Visiting University Student
CIS	375	Business Data Mining	Building predictive analytics (e.g., SEMMA, KDD); exposure to logistic regression, machine learning and decision tree methods; Understanding lift factors, ROC curves; hands-on use of mining software; business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; WPC 300 with C or better OR Visiting University Student
CIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
CIS	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
CIS	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student
CIS	405	Business Intelligence	Business intelligence (BI) is a term describing a broad category of applications, technologies, architectures and processes for gathering, storing, accessing and analyzing data to provide business users with timely information to enable better insights into project and process management and evidence-based decision making. BI is based on techniques for data decision capture, cleansing, validation, warehousing and analytics to help decision makers improve decision outcomes. Provides a capstone understanding of the concepts of managing data resources and the development of business intelligence capabilities using data visualization, data warehousing, data mining, online analytical processing decision support systems and other advanced BI topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s) CIS 105 or 236 with C or better OR Visiting University Student
CIS	415	Big Data Analytics in Business	Applications of machine learning, data and text mining for big data, Hadoop, cloud-based solutions, fundamentals of big data programming, social media and big data, NoSQL, GIS, business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; CIS 325 with C or better OR Visiting University Student
CIS	425	Enterprise Web Technologies	Modern Web application technologies for the enterprise. Covers development of Web applications for handling business transactions and strategies including the use of cloud-based applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 340 with C or better; CIS 360 or 365 with C or better OR Visiting University Student
CIS	430	Mobile Platforms for Business	Mobile application development for the enterprise to address mobile transactions and consumer engagement. Covers business frameworks, app development; and management of devices, applications and services in today's multi-platform environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 345 with C or better; CIS 425 with C or better OR Visiting University Student

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CIS	440	Capstone in Information System	Offers a capstone experience integrating concepts from the business as well as the technology curricula. Students analyze, propose and develop a full technology solution for a business enterprise.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3	L	Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 401 with C or better; CIS 425 with C or better
CIS	450	Enterprise Analytics	Model lifecycle analysis, analytics governance, aligning governance, aligning firm and analytics strategy, big data security issues, enterprise search, applied projects.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 355 with C or better, CIS 375 with C or better, CIS 415 with C or better OR Visiting University Student
CIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey CIS BS student
CIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-6		Prerequisite(s): Barrett Honors student
CIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Information Systems	1-6	L	Prerequisite(s): Barrett Honors student
CIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-3		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	502	Info Systems & Innovations	Organizational, strategic, and technical issues of the management of information. Evaluation, design, and use information systems as competitive advantage.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey MBA degree program student
CIS	503	DecisionMaking w/DataAnalytics	Presents frameworks and approaches to equip students to recognize patterns in data and models, recommend actions and implement organizational changes. Students learn multiple concepts to improve decision making in organizations including the curation of data repositories for cross-functional analytics, recognition of decision biases, recommendation and communication of business process changes, and the establishment of iterative processes for decision analytics. Readings address decision-making dilemmas and challenges facing managers in analytics-rich business environments. Students get an immersive experience in analyzing the individual biases inherent in decision making, the informational requirements and the data analytics governance requirements to ensure effective deployment and continuous renewal of analytics culture at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	2.5-3		Prerequisite(s): W.P. Carey graduate student
CIS	505	Intro to Enterprise Analytics	Ensuring the foundational understanding of contextualized analytics within the business enterprise continuum by covering how data flows and is managed across the landscape of enterprise business processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	506	Information Management	Addresses central issues in managing information to achieve competitive advantage and support innovation. Specific topics covered include data quality, data modeling using both entity relationship models and star schemas, data governance, document management, document search, enterprise performance management and visualization techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): graduate W. P. Carey major
CIS	508	Data Mining I	Charting a roadmap for data-driven decision making and getting a practical understanding of how IT tools and techniques can allow managers to extract predictive analytics and patterns from primarily numeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	509	Data Mining II	Uses tools and techniques to analyze unstructured data that are applied to business problems to support informed decision making and the extraction of predictive analytics and patterns from primarily nonnumeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Pre-req for CIS 509
CIS	510	Bus Process & Workflw Analysis	Builds foundations for process analysis by focusing on information, documents, people, roles and business rules. Provides an introduction to various techniques and tools of process analysis, including an understanding of organizational issues in rolling out change initiatives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 510 or CIS 591 (Business Process Workflow Analysis)

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CIS	512	Business Intelligence	Understanding how organizations make use of Business Intelligence (BI) to gain a sustainable competitive advantage. Builds the foundations for evidence-based managerial decision making. Covers technologies for data warehousing and data mining from a managerial perspective. Covers contemporary topics such as real-time BI, business analytics, and business performance management with the help of case studies, audio-video content, guest speakers, online forums to generate creative thinking and discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey graduate major
CIS	515	Business Analytics Strategy	Evaluating, strategically aligning, planning for and directing investments in and governance of processes for continuous renewal of analytics deployments in business.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Pre-requisite: W.P. Carey graduate major
CIS	525	Strategic Value of IT	Instills balanced and disciplined view of IT and business with their interplay. Assigns cases and assignments involving the symbiotic relationship of IT and business to provide real-world exposure for critical thinking and engaging discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 525 or CIS 591 (Strategic Value of Information Technology)
CIS	540	Information Security & Control	Provides a broad survey of information security and controls, utilizing the COBIT framework to illustrate how information security and controls contribute to effective IT governance. Develops an understanding of the issues associated with information security and effective IT governance, with particular emphasis on how management contributes to the effectiveness of an organization's information security program.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 540 or CIS 591 (Information Security & Controls)
CIS	541	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of large data sets including temporal, geospatial, topical and business data while also making it easier to digest, present and utilize for business needs and users.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	545	Managing Enterprise Systems	Investigates major categories of enterprise systems, factors driving software adoption and keys for successful implementation. Pays special attention to evaluating the potential impact of emerging technologies on business environments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 545 or CIS 591 (Enterprise Systems)
CIS	560	IT Services & Project Mngmt	Provides an overview of the project management process groups and knowledge areas (defined by the PMBOK) and focuses on the application of key concepts, tools and techniques for delivering on-time, on-budget IT project and services that meet end-user needs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 560 or CIS 591 (IT Services and Project Management)
CIS	565	AI and Business	Explores modern artificial intelligence (AI) technology, applications, techniques and their implications for business. People, process and technology factors related to the innovation and adoption of AI in the commercial enterprise and how it shapes the competition and society in the future. Also covers implications for information systems professionals as it pertains to managing the AI infrastructure (robots, algorithms, platforms).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	575	Emerging Technologies	Explores decision models and frameworks applied to assess, evaluate and implement emerging technologies. Explains the principles of sustaining and disruptive technological innovation on the adoption and diffusion of emerging technologies. Discusses the technical, industrial and legal parameters that enable convergence and commoditization of technologies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 575 or CIS 591 (Emerging Technologies in IT)
CIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student

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CIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student
CIS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Pre-requisite: Specific W.P. Carey Graduate student
CIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey Info Systems PhD student
CIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	502	Theory/Pract/Commun/Persuasion	Theoretical exploration of communicative and persuasive practices as applied in various contexts. Surveys classical, modern, and contemporary theories of persuasion.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	505	Methods/Appl Commun Research	Examines the intellectual, practical, and ethical dimensions of engaging in applied research. Emphasizes empirical and quantitative methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	506	Humanistic Inq/Field Rsrch/Com	Examines interpretive, critical, and rhetorical approaches to communication and advocacy, including hermeneutics, ethnography, and cultural studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	515	Ethical Issues/Commun Advocacy	Examines the ethical issues or concerns related to communication advocacy. Variable topics; examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	516	Mediation and Dispute Resoluti	Examines advocacy's role in fair negotiation and effective and successful dispute resolution. Examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	520	Communication Campaigns	Explores public communication strategies aimed at advocating for general or specific audiences and/or for particular issues and causes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student; CMN 502 or 522 with C or better
CMN	522	Argumentation and Advocacy	Introduces various models of argumentation and their applications to various spheres of advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts students
CMN	531	Communication and Social Chang	Examines human communication and technologies of communication as agents of social change within groups, communities, organizations, and/or cultures.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student

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CMN	532	Advocacy/Interpersonal Setting	Examines particular relational contexts in which advocacy plays a pronounced role (e.g., personal, family, and service provider relationships).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	550	Advocacy in Orgtional Settings	Examines issues of upward influence, the expression of dissent, and grievance systems within organizational contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	551	Democracy & Power in Orgs	Examines structural, historical, relational, and symbolic dimensions of organizational communication and discourses that foster or impede communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	557	Communication and Technology	Assesses technology's role in the social dynamics of human interaction. Emphasizes the impact of technology with regard to communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	565	Globalization and Advocacy	Explores the forces leading to increased intergroup contact and their impact on social, economic, and political dynamics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	570	Comm/Advocacy Social Context	Variable topics course exploring the intersection of communication and advocacy in specific contexts not addressed in other elective courses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisite: Communication Studies Master of Arts student
CMN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Communication Studies MA student
CMN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CNE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; PHY 122 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CNE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student

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CNE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CNE	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CNE	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Credit is allowed for only CON 243 or CNE 243
CNE	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student
CNE	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296
CNE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212, CNE 212, or MAE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CNE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engr BSE, Construction Engr BSE, or Environmental Engr BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student
CNE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CNE	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engrng BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CNE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	(L or HU) & H	Prerequisite(s): Civil Engineering BSE major; CEE 300 with C or better OR non-CEE junior or senior; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CNE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CNE	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student

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CNE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CNE	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engrn major; senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student
CNE	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student
CNE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Construction Engineering	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CNE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4	L	Prereq(s): Civ Engr maj; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR Con Engr maj; CEE 321 or CNE 321; CEE 351 or CNE 351 OR Envir Engr maj; CEE 341; EVE 302; EVE 303; Credit allowed for only CEE 486 or CNE 486 OR Visiting University Student
CNE	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students
CNE	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	L	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 453 or CON 453; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
COE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
COE	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
COE	503	Intro to Qualitative Research	Terminology, historical development, approaches (including ethnography, ethnomethodology, critical theory, grounded theory, and hermeneutics), and qualitative versus quantitative social sciences; methods of inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
COE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
COM	100	Intro to Human Communication	Topics-oriented introduction to basic theories, dimensions, and concepts of human communicative interaction and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	

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COM	110	Elements Interpersonal Comm	Demonstration and practice of communicative techniques in establishing and maintaining interpersonal relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	124	Media and Culture	Introduces contemporary intercultural issues as expressed through various media in American society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	C	
COM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Pre-requisite: Maximum 24 earned hours
COM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	207	Intro to Communication Inquiry	Bases of inquiry into human communication, including introduction to notions of theory, philosophy, problems, and approaches to the study of communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	222	Argumentation	Philosophical and theoretical foundations of argumentation, including a comparison of models of advocacy and evidence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
COM	225	Public Speaking	Verbal and nonverbal communication in platform speaking. Discussion and practice in vocal and physical delivery and in purposeful organization and development of public communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
COM	230	Small Group Communication	Principles and processes of small group communication, attitudes, and skills for effective participation and leadership in small groups, small group problem solving, and decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	
COM	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 or SST 294 (Disability Justice and Advocacy) OR Visiting University Student
COM	241	Intro to Oral Interpretation	Communication of literary materials through the mode of performance. Verbal and nonverbal behavior, interface of interpreter with literature and audience, and rhetorical and dramatic analysis of literary modes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	250	Communication & the Workplace	Introduces the study of communication in the workplace, including topics such as successful organizational communication strategies, supervisor and peer relationships, workplace conflict, new media and technology, professionalism, organizational morale, work-life well-being and employee socialization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	259	Comm Bus & the Professions	Interpersonal, group, and public communication in business and professional organizations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): non-Communication student; minimum 25 hours OR Visiting University Student
COM	263	Elements Intercultural Comm	Basic concepts, principles, and skills for improving communication among persons from different minority, racial, ethnic, and cultural backgrounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	281	Communication Activities	Participation in forensics or interpretation cocurricular activities.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		
COM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	300	Comm in Interdiscipl Studies	Examines and analyzes communication in the context of other academic disciplines. Open to BIS majors only.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): BIS student; ; minimum sophomore standing; minimum 2.00 GPA; COM 100 with C or better; COM 225 with C or better OR COM 259 with C or better OR Visiting University Student
COM	302	Representations of Veterans	What is a hero? At what cost do we create them and how do they make a total homecoming after trauma? What do we mean when we use words like sacrifice, warrior queens, war crimes, and just war? Using sources from the Bhagavad Gita through Homer and Shakespeare, course surveys the foundations of history, war, politics and economics as well as the mythology of religious practices of Greeks and Romans to see the change and consistency with contemporary visual arts, theater, fiction, social media, poetry and film.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
COM	308	Adv Research Methods in Comm	Advanced communication research methods, including quantitative, qualitative, and critical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 207 with C or better; MAT 117 or an MA general studies course with C or better; minimum 2.00 GPA OR Visiting University Student

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COM	309	Rhet/Interp/Methods-Commun	Examines humanistic and qualitative approaches to communication. Introduces textual, interactional and ethnographic methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better; minimum 2.0 GPA OR Visiting University Student
COM	310	Relational Communication	Explores communication issues in the development of personal relationships. Current topics concerning communication in friendship, romantic, and work relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	312	Comm, Conflict & Negotiation	Theories and strategies of communication relevant to the management of conflicts and the conduct of negotiations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	314	Inner-City Families	Examines issues and concerns that confront inner-city families. Blends theory and application. From a theoretical perspective, examines issues that affect families who live in the inner city (e.g., race and poverty), as well as specific skills and programmatic elements that are needed to work with families in an urban setting. In terms of application, provides an intensive service-learning-based experience. Engages students in specific service to an embedded inner-city organization for a minimum of 3 hours per week. Students work with the professor to determine appropriate service placements.	N	PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100
COM	316	Gender and Communication	Introduces gender-related communication. Examines verbal, nonverbal, and paralinguistic differences and similarities within social, psychological, and historic perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	317	Nonverbal Communication	Study of communication using space, time, movement, facial expression, touch, appearance, smell, environment, objects, voice, and gender/cultural variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
COM	319	Persuasion/Social Influence	Variables that influence and modify attitudes and behaviors of message senders and receivers, including analysis of theories, research, and current problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	320	Communication and Consumerism	Critical evaluation of messages designed for public consumption. Perceiving, evaluating, and responding to political, social, and commercial communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	321	Rhetorical Theory and Research	Historical development of rhetorical theory and research in communication, from classical antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & H	Prerequisite(s): COM 100 with C or better; ENG 101, 105, 107, or 111 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	323	Comm Approach Popular Culture	Critical analysis of popular culture within social and political contexts; emphasizes multicultural influences and representations in everyday life.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	324	Rhetoric and Media Criticism	Critical examination of media arts, including cinema, television, and video. Applies rhetorical, textual, and interpretive methods of criticism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Pre-requisite: Minimum 2.0 GPA
COM	325	Advanced Public Speaking	Social and pragmatic aspects of public speaking as a communicative system; strategies of rhetorical theory and the presentation of forms of public communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 225 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	326	Court Room Oratory	Increases knowledge and appreciation of the role of communication in the development of legal and public policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		
COM	327	Civil Communication	Offers a theoretical understanding of civil communication and methods for applying civil communication practices in a variety of contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	328	Communicating Science:Publ Spk	Applies the fundamentals of public speaking and communication theory to technical and scientific presentations. Prepares students to communicate science and technology subject matter through presentations to the general public. Students adapt complex messages for a variety of audiences through traditional and multimodal presentations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum Junior standing; Credit is allowed for only COM 328 or COM 394 (Communicating Science) or LSC 394 (Communicating Science)
COM	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Dm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Dm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Dm Wrk:Pg to Stg&Scrn) OR Visiting University Student
COM	341	Social Contexts Performance	Adaptation and performance of literature for the community outside the university. Research into the practical uses of performed literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA

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COM	342	Oral History and Storytelling	Examines the formation of culture and history through research, presentations, the collection of oral history, and the telling of stories.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 101 or 102; Credit is allowed for only COM 342 or CMN 394 (Storytelling and Oral History) or COM 394 (Storytelling and Oral History) OR Visiting University Student
COM	353	Professional Communication	Introduces both verbal and written professional communication styles and technologies in preparation for communication-related internships and careers.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	363	Latinxs and the Media	The rapid growth of Latinx-media within the U.S., and transnational/regional media in the Americas, is unprecedented. Local and global organizations serving Latinx communities are increasingly acknowledging the importance of preparing professionals and academics with an understanding not only of Latino communities, but also of media industries and communication issues that impact those communities. Examines the production, distribution, and consumption of Latinx Media and images in the United States (U.S.). Focuses on a wide range of mediated cultural production with an emphasis on visual media such as television, film, advertising and digital/social media. Pays special attention to the influence of the so-called Latinx market, the configuration of national, racial and ethnic identities, politics, cultural production and the ways it challenges and/or reproduces competing cultural ideologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 363 or COM 394 (Latinos and the Media) or TCL 394 (Latinos and Media) OR Visiting University Student
COM	364	Cultural Communicology	Basic introduction to cultural communicology, focusing on its relationship to general systems theory and semiotics (the study of signs and sign systems). Focuses on lived-experience as a semiotic interrelation between culture and communication. General systems theory and semiotic theory are used to study culture as a living condition of communicative relations among humans and within their environment. Emphasizes practical applications to real-world problems. Examines communication as a confluence of intrapersonal, interpersonal, group and transcultural networks of codes and messages. Uses comparative cultural contexts as a basis for applied analysis.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): COM 100; Credit is allowed for only COM 364 or COM 394 (Cultural Communicology) OR Visiting University Student
COM	371	Language, Culture, &Comm	Cultural influences of language on communication, including social functions of language, bilingualism, biculturalism, and bidialectism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): COM 263 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	377	Comm, Terrorism, & Nat'l Sec	Surveys strategic communication and its relationship to terrorism challenges facing the United States and the rest of the world. Begins with a look at language and definitions, how strategic communication functions are traditionally conceptualized, and the scope and extent of the terrorism problem. Focuses on the contemporary problems of terrorism, including its extent, tactics, and strategies and strategies that aim to combat it. Concludes with a look at new frontiers in the terrorism struggle, including new media and communication approaches.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA
COM	382	Classroom Apprenticeship	Nongraded credit for students extending their experience with a content area by assisting with classroom supervision in other COM courses.	N	PRA	N	YGB	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	383	Communication and Mentoring	Explores the role of communication in face-to-face and online mentoring relationships with an emphasis on message shaping, nonverbal communication, professionalism and audience analysis. Applies practice and theory from a variety of lower-division communication courses (public speaking, professional and business, small group, intercultural and interpersonal) to prepare students for mentoring roles in the Communication Assessment Learning Lab (CALL) on ASU's west campus. During the semester, students (individually and as a member of a group) are engaged in creating and delivering both online and in-person public speaking tutorials.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100 or 110 or 230 or 259 or 263 with B or better; COM 225 with B or better; Credit is allowed for only COM 383 or COM 498 (Call Lab Mentorship) OR Visiting University Student
COM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student

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COM	400	Communication in Professions	Specialized study of communication processes in professional and organizational settings.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU & C	Prerequisite(s): Interdisciplinary Studies or Business Communication student; COM 259 or COM 100 and 225 with C or better; minimum 2.00 GPA; minimum sophomore standing OR Visiting University Student
COM	407	Adv Critical Methods in Comm	Examines critical approaches relevant to communication, including textuality, social theory, cultural studies, and ethnography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 407 or COM 507 OR Visiting University Student
COM	408	Quant Research Meth in Comm	Advanced designs, measurement techniques, and methods of data analysis of communication research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 408 or COM 508 OR Visiting University Student
COM	410	Intrprnl Com Thry & Resrch	Survey and analysis of major research topics, paradigms, and theories dealing with message exchanges between and among social peers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 308 with C or better; COM 110 or 310 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	411	Communication in the Family	Broad overview of communication issues found in marriage and family life, focusing on current topics concerning communication in the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 411 or CMN 598 (Communication in the Family) OR Visiting University Student
COM	414	Crisis Communication	Role of communication in crisis development and intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	415	Risk Communication	Understanding how risk is constructed and assessed across social spheres, developing familiarity with dominant approaches to framing risk and the principles and professional practices of risk communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA; minimum junior standing; Credit is allowed for only COM 415 or COM 494 (Risk Communication) OR Visiting University Student
COM	416	Gender and Race in the Media	Explores how the mass media constructs gender and race and perpetuates views of minorities and varied nationalities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	417	Communication and Aging	Critical study of changes in human communicative patterns through the later adult years, with attention on intergenerational relationships and self-concept functions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	420	Rhetoric & Community Advocacy	Critical rhetorical study of local communities and advocacy, including fieldwork guided by rhetorical theory; the intersection of media, rhetoric and advocacy; and reflexivity in rhetorical fieldwork. Examines rhetoric in the context of community advocacy and through participant observation within social controversies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 308 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 420 or COM 494 (Rhetoric and Community Advocacy)
COM	421	Rhetoric of Social Issues	Critical rhetorical study of significant speakers and speeches on social issues of the past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 308 or 309 with C or better; COM 321 or 323 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	422	Advanced Argumentation	Advanced study of argumentation theories and research as applied to public forums including: political, business, and legal contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	L	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	423	Facilitating Collab & Dialogue	Explores processes of collaboration, dialogue, deliberation and participative decision making. Examination of both philosophical and scientific perspectives on to these processes as they relate to communication in various settings (community relations, dispute resolution, social work, policing and politics) and in personal relationships and family life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only CMN 598 (Facilitating Collaboration and Dialogue) or COM 423 or COM 494 (Facilitating Collaboration and Dialogue) OR Visiting University Student
COM	424	Television Studies & Criticism	Surveys critical and historical approaches to television as a medium; to television research; and to television's effects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.00 GPA
COM	426	Political Communication	Theories and criticism of political communication; including campaigns, mass persuasion, propaganda, and speeches. Emphasizes rhetorical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	428	Graphic Novels	Rhetorical analysis, with a focus on the graphic novel as both persuasive product and practice. Explores the communicative, persuasive and cultural effects of this medium and specifically offers vocabulary and tools for critically viewing its influence on popular culture.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only COM 428 or COM 494 (Graphic Novels and Popular Culture) OR Visiting University Student

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COM	429	Semiotics/Visual Communication	Semiotic analysis of mediated forms of communication, including film, television, and photography. Includes the political and aesthetic dimensions of images.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student
COM	430	Leadership Group Communication	Theory and process of leadership in group communication, emphasizing philosophical foundations, contemporary research, and applications to group situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	432	Forgiveness and Reconciliation	Examines various communication processes related to forgiveness and reconciliation with a focus on constructive, prosocial responses to interpersonal relationship hurt and disappointment.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only COM 432 or COM 494 (Forgiveness and Reconciliation) or COM 494 (Forgiveness, Mindfulness, and the Healthy Self) or CMN 598 (Forgiveness and Reconciliation) OR Visiting University Student
COM	441	Performance Studies	Theory, practice, and criticism of texts in performance. Emphasizes the interaction among performer, text, audience, and context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; COM 308 with C or better; minimum 2.00 GPA
COM	442	Identity, Perf, Human Comm	Explores communication dimensions of self and others as performance. Examines topics that include gender, race, sexuality, age, and ethnicity through performance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 225 with C or better; COM 241 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	445	Narrative Performance	Theory and practice of performing narrative texts (e.g., prose fiction, oral histories, diaries, essays, letters). Includes scripting, directing, and the rhetorical analysis of storytelling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; minimum 2.00 GPA
COM	446	Perform Lit Written by Women	Explores, through performance and critical writing, literature written by women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & C	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	450	Organizational Communication	Offers advanced exploration of organizational communication principles through analyses of scholarship and contemporary case studies. Topics include workplace culture, networking, leadership, management, nonprofits, virtual organizing, work-life balance, organizational change, power, control and ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 250 with C or better; COM 308 or 309 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	451	Comm and Work Relationships	Communication principles and practices associated with supervisory, peer, and client relationships.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
COM	452	Communication of Happiness	Examines how communication behaviors relate to constructing happiness and wellbeing. Topics include gratitude, forgiveness, social support, appreciation, social networks and communicative contagion of mood intersecting with issues of dyadic, group and organizational communication. Auxiliary readings come from a variety of disciplines, including psychology, management, sociology, positive organizational scholarship and appreciative inquiry. Course activities include reading, field exercises, journal writing, exams, project presentation(s) and paper(s).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA; minimum junior standing OR Visiting University Student
COM	453	Communication Training/Develop	Examines the procedures and types of communication training and development in business, industry, and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	454	Rhetorical/Critical Approaches	An historical and contemporary account of how public relations messages build corporate identities and persuade audiences by shaping public values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA; Credit is allowed for only COM 454 or CMN 598 (Rhetorical&Critical Approaches to Public Relations)
COM	455	Surveillance & Popular Culture	Surveys representations of surveillance in popular culture.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CMN 598 (Surveillance, Film and Culture) or COM 455 or COM 494 (Surveillance, Film and Culture) or STC 598 (Surveillance, Film, and Culture)
COM	456	Political Comm Campaigns	Theory and research related to political campaign communication. The persuasive process of political campaigning, the role of the media, the candidate and image creation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA
COM	457	New Media	Explores how new communication and information technologies affect communication and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student

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COM	459	Social Media Networks	A network-based perspective plays an increasingly important role in our understanding of contemporary communication process of which much has shifted from a hierarchical, densely bounded group basis to a personalized, lateral network. Especially, along with the popularity of social media, social networking has become a key term that characterizes our everyday life. Discusses the role of new media technologies in evolving networked society, and how online networks are intertwined with our offline life. Covers theories and computerized methods that help understand online network structure. Includes lectures and discussions on theoretical issues with hands-on exercises of analytic methods.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.50 GPA; MAT 142 or higher with C or better; Credit is allowed for only COM 459 or COM 494 (Social Networks)
COM	463	Intercultural Comm Globl Cntxt	Survey and analysis of major theories and research dealing with communication between people of different cultural backgrounds, primarily in international settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & G	Prerequisite(s): COM 263 with C or better; COM 308 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	464	Communicative Sexualities	Grounded in the discipline of communication, provides an introduction to the qualitative research practice of semiotic phenomenology. Examines sexuality as a personal, social, historical, and cultural phenomenon, wherein communication is studied as the mediating force through which meanings are ascribed to sexuality and sexual experience. Sexuality is studied as it manifests among a wide variety of people, practices, and contexts. U.S. American culture provides the primary cultural context. Addresses basic questions including: How do we understand sexuality? How have we come to know what we know about sexuality? How do we understand the relationship between sexuality as personal desire, and sexuality as social norm in specific cultural contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): minimum junior standing; minimum 2.50 GPA OR Visiting University Student
COM	465	Intercultural Comm Workshop	Experientially based study of communication between members of different cultures designed to help students improve their intercultural communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	467	Digital Rhetoric	Critical rhetorical study of intersection of public advocacy, deliberation, argumentation and digital media. Examines a variety of digital media as they intersect with theories of rhetoric. Explores digital technology through a blending of criticism upon and creation of digital artifacts.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 207 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 467 or COM 494 (Digital Rhetoric)
COM	471	Global Media&Cultural Identity	Explores theory and practices of global media production, dissemination and consumption. Surveys the ways in which local, regional and global sociocultural and political forces interplay to shape cultural identities and media consumption.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 2.50 GPA; junior standing OR Visiting University Student
COM	477	Sport, Culture, and Discourses	Introduces sport as a global economic and cultural force, and as a foundational discourse experienced largely through media. Facilitates the understanding of sport as a major cultural and socializing institution and, thus, as a key site for the construction of knowledge, understandings, ideologies, and identities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA
COM	482	Communication Instr and Train	Explores instructional communication practices applied to professional training settings. Considers verbal, nonverbal and technological aspects of instructional communication with an emphasis on training professional and community audiences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA OR Visiting University Student
COM	483	Advanced Com & Mentoring	Students serve as peer mentors in the Communication Assessment Learning Lab (CALL) with instructional emphasis on speaker apprehension, listening, the dynamics of group communication and leadership. Through experiential learning, mentors employ ethical peer tutoring practices by coaching undergraduates in managing public speaking apprehension, speech development and organization. Further, mentors provide on-the-spot feedback to undergraduates relating to delivery techniques, style, nonverbal communication, persuasive strategies and the use of presentational material.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 383 with C or better OR Visiting University Student
COM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): Communication major; COM 225 with C or better; COM 308 with C or better; minimum 2.00 GPA; minimum 56 hours

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
COM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6	L	Prerequisite(s): Barrett Honors student
COM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-7		
COM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	501	Research Methods in Comm	Critical analysis of systems of inquiry in communication, focusing on the identification of variables and approaches to conducting research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student; minimum 3.00 GPA
COM	504	Theories and Models in Comm	Theory construction, metatheoretical concerns, models, construct definition, and comparative analysis of current theories in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student; minimum 3.00 GPA
COM	507	Qual Rsrch Methods in Comm	Qualitative research methods, including interviewing, field methods, and other nonquantitative techniques for analyzing communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications Graduate student; Credit is allowed for only COM 407 or 507
COM	508	Quant Rsrch Methods in Comm	Empirical research designs, measurements, and statistical strategies and techniques in analyzing and evaluating experimental and descriptive research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Pre-requisites: Communications Graduate student. Credit is allowed for only COM 408 or COM 508
COM	510	Transmedia Narratives	Explores the history, production, distribution and consumption of transmedia narratives as an emergent multiple-platform dynamic of storytelling. Focuses on digital storytelling, the dynamics of nonlinear narrative and immersive audience experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	540	Conducting Comm Research	Develops the skills necessary to conduct communication research in the workplace. Students develop a research proposal for a project that they could conduct at their current jobs or a job they would like to have. They may choose to develop a proposal for their capstone project or a project that they would like to conduct in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; minimum four completions of COM 598; minimum 3.00 GPA
COM	550	Capstone	Culminating experience of the Master of Arts in Communication. The capstone course allows each student to develop a project that answers a question or solves a problem tailored to his or her interests, needs and goals. Develops final products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; COM 540; minimum four completions of COM 598; minimum 3.00 GPA
COM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Pre-requisite: Communications Graduate student

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COM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	604	Theory Construction in Comm	Review and analysis of philosophical problems inherent in communicative research and of metatheories designed to deal with these problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	607	Contemporary Rhetorical Method	Analysis of issues in the practice of rhetorical communication research, including criticism and scholarship.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	608	Multivar Stat Anlys Data Comm	Statistical analysis of communication research data. Multivariate procedures used in communication research and methods of causal analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	609	Adv Qual Research Meth Comm	Analysis of issues in the practice of qualitative communication research, including data gathering, fieldwork issues, analysis strategies, and reporting results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): Communications Graduate student
COM	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	100	Introduction to Construction	Introduces construction industry sectors and professionals. Additional content includes developing personal competencies required of construction professionals.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	101	Const/Culture: a Built Environ	Analyzes the cultural context of construction, emphasizing its centrality in the evolution and expansion of built environments as expressions of ethical and historical value systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	HU & H	
CON	106	Intro to Con Mat for Built Env	Effects of concrete-making materials (aggregates, cements, admixtures, etc.) on the properties of fresh and hardened concrete. Discusses concrete mixture proportioning along with the calculations and statistical analysis of strength testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4	SQ	
CON	221	Applied Statics	Vectors, forces and moments, force systems, equilibrium, analysis of basic structures and structural components, friction, centroids, and moments of inertia.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): MAT 170 or higher with C or better; PHY 111 with C or better; PHY 113 with C or better OR Visiting University Student

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CON	223	Strength of Materials	Analyzes strength and rigidity of structural members in resisting applied forces. Stress, strain, shear, moment, deflections, combined stresses, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): CON 221 with C or better; CON 252 with C or better OR Visiting University Student
CON	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CON	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Credit is allowed for only CNE 243 or CON 243
CON	244	Working Drawing Analysis	Provides the ability to read and understand architectural plans; to understand drawing symbols, dimensions, abbreviations, and terms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	251	Microcomputer Appls for Constr	Applies the microcomputer as a problem-solving tool for the constructor. Uses spreadsheets, information management, and multimedia software.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better OR Visiting University Student
CON	252	Bldg Constr Meth, Matl, Equip	Emphasizes Vertical construction. Methods, materials, codes, and equipment used in building construction corresponding to the division of the CSI Master Format.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		
CON	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student
CON	273	Electrc'l Constrctn & Proj Mgmt	Electrical construction, design, estimating, scheduling and project management. Electrical safety, blueprints and symbols, theory, sequence of installation. National Electrical Code (NEC).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		
CON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296
CON	310	Testing of Material for Constr	Structural and behavioral characteristics, engineering properties, measurements, and application of construction materials. Not open to engineering students.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Construction Management BS major; CON 221 with C or better; Pre- or corequisite(s): CON 223 with C or better if completed OR Visiting University Student
CON	343	Adv Hvy Equip Operations	Reviews the principles of horizontal construction. Emphasizes fleet operations, maintenance programs, methods and procedures to construct tunnels, roads, dams and the excavation of buildings.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 252; minimum junior standing; Credit is allowed for only CON 343 or CON 394 (Advanced Heavy Equipment Operations) OR Visiting University Student
CON	345	Mechanical Systems	Design parameters and equipment related to heating and cooling systems for mechanical construction. Biorelated aspects of mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 221 with C or better; CON 252 with C or better; PHY 111 or 121 with C or better; PHY 113 or 122 with C or better OR Visiting University Student
CON	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engng BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CON	384	Env Aspects of Heavy Const	Methods, measures and analysis related to control of erosion, dust generation and storm water discharge during projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): BS Construction Management major; Pre- or corequisite(s): CON 243. Credit is allowed for only CON 384 or CON 394 (Environmental Aspects of Heavy Construction)
CON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Pre-requisite: Engineering BS or BSE student

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CON	424	Structural Design	Economic use of concrete, steel, and wood in building and engineered structures. Design of beams, columns, concrete formwork, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; Pre- or corequisite(s): CON 310 OR Visiting University Student
CON	441	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prereq(s): Con Engrn BS or Con Mngmt BSE major; min junior standing; Credit is for only CON 441 or CON 541 or CEE 494(Pub Wrks Cap Con) or CON 494(Pub Wrks Cap Con) or CEE 598(Pub Wrks Cap Con) or CON 598(Pub Wrks Cap Con) OR Visiting University Student
CON	446	Marketing for Construction	Provides key marketing practices to include strategic planning, marketing collateral, networking, business development, and interview preparation for project pursuits. Covers all aspects of service-based marketing topics and practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): COM 225; CON 221 with C or better OR Visiting University Student
CON	448	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS or Civil (Sustainable Engineering) BSE major; min senior standing; Credit is for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustainability in Construction) OR Visiting University Student
CON	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student
CON	451	Innovative Project Delivery	Studies design and construction interaction; the RFP (request for proposal) and RFQ (request for quote) process; risk allocation issues; developing successful project proposals, procurement and selection.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management, Construction Engineering, Civil Engineering, or Architectural Studies major; senior standing; Credit is allowed for only CON 451 or CON 494 (Alt Project Delivery Mthds) or CON 551
CON	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engrn major; senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student
CON	454	Trenchless Construction Methds	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods and materials required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 243 or CON 243; Credit is allowed for only CON 454 or CON 554 OR Visiting University Student
CON	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student
CON	457	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 457 or CON 557 OR Visiting University Student
CON	465	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing and efficient practices.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 465 or CON 565

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CON	467	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 467 or CON 567 or CON 494 (Advanced Procurement Systems)
CON	483	Advanced Building Estimating	Concepts of pricing and markup, development of historic costs, life cycle costing, change order and conceptual estimating.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Visiting University Student
CON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CON	486	Heavy Construction Estimating	Methods analysis and cost estimation for construction of highways, bridges, tunnels, dams, and other engineering works.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Construction Engineering BSE major OR Visiting University Student
CON	487	Hvy Con Project Mgt	Studies methods used to manage large magnitude heavy construction projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre- or corequisite(s): CON 495 OR Visiting University Student
CON	488	Heavy Con Earthworks	Geotechnical issues with respect to foundation grading, forming and location for various types of infrastructure and transportation projects. Also includes streets, highway and embankment developments, retaining wall system, mechanically stabilized earth walls, and required quality control methods for these activities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 488 or CON 494 (Heavy Construction Earthworks)
CON	491	Construction Project Capstone	Develops understanding and knowledge of topics and concepts required to be a construction manager. A construction project is the basis for applying cost estimating, scheduling, safety, communications and other construction management skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 383; CON 495; Pre- or corequisite(s): CON 455; Credit is allowed for only CON 491 or CON 494 (Construction Project Capstone)
CON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6		Prerequisite(s): Barrett Honors student
CON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6	L	Prerequisite(s): Barrett Honors student
CON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students
CON	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	L	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 453 or CON 453; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
CON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-3		
CON	501	Construction Research Methods	Data collection methodologies, applied parametric and nonparametric statistics, data analysis techniques, technical writing, and data presentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Construction Graduate student
CON	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Civil Engineering or Construction or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)
CON	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511

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CON	530	Facil Operations & Maintenance	Operations, maintenance and energy management requirements of various types of facilities and built environments. Ethical practices	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 430, 494 (Facilities Management/Operations & Maintenance), 530 or 598 (Facilities Management/Operations & Maintenance)
CON	531	FM Building Energy Mgt	Understand and learn energy management techniques in facilities management. Identifying and performing efficiency evaluations on various types of heating, ventilation and air conditioning systems in typical buildings. Concepts and methods of managing, adjusting and balancing equipment and systems for maximum facility performance. Facilities organizations best practices to maximize energy savings and performance, such as insulation usage, lighting optimization, energy management systems and commissioning procedures. Identification of ancillary benefits to energy-efficient building systems such as indoor air quality, sustainability and energy audits.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CON 531 or CON 598 (Facility Management Building)
CON	532	Facilities Project Management	Understand and learn project management techniques in facilities management. Stakeholder analysis, including roles, responsibilities and risk considerations. Asset owner and manager considerations within project components and deliverables. Development of project scope, requirements, schedules, budgets and communication plans from a facility manager's perspective. Best practices of facilities organizations for managing contract types, contract governance and performance management.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only CON 532 or CON 598 (Facility Project Management)
CON	540	Construction Productivity	Productivity concepts. Data collection. Analysis of productivity data and factors affecting productivity. Means for improving production and study of productivity improvement programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction MS or Construction Engineering MSE major
CON	541	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Construction Engineering or Construction Management student; Credit is allowed for only CON 441 or CON 541 or CEE 494/CON 494 (Public Works Capital Construction) or CEE 598/CON 598 (Public Works Capital Construction)
CON	545	Construction Project Mgmt	Theory and practice of construction project management. Roles of designer, owner, general contractor, and construction manager.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction or Construction Engineering graduate student
CON	548	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Civil, Environmental & Sustainable Engineering or Construction Engineering or Construction Management graduate student; Credit is allowed for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustain in Constrn)
CON	551	Alternative Proj Delivery Meth	Design/construction interaction; conceptual estimation and scheduling; the RFQ/RFP process; legal, insurance, risk allocation issues; procurement and selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 451 or CON 494 (Alt Project Delivery Mthds) or CON 551
CON	554	Trenchless Construction Methods	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues, and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods, and materials required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Engineering OR Construction Management graduate student
CON	557	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 457 or CON 494 (Prin Lead & Management) or CON 557 or CON 598 (Prin Lead and Mgmt)
CON	565	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing, and efficient practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only CON 465 or CON 565

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CON	567	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 467, 567 or 494 (Advanced Procurement Systems)
CON	570	Intro to Adv Tech Facilities	Introduces advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. The constructor's viewpoint, including: planning, structures, mechanical, and tool installation. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	571	Const Adv Tech Facilities	Construction issues for advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. Issues include scheduling, cost estimating, project management, mechanical, safety, commissioning and tool hookup. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 570 with C or better
CON	575	Info Technology in Constructn	Uses virtual construction methodologies to improve the construction enterprise using communications, facility modeling, and decision making. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	589	Construction Co Financ Control	Financial accounting and cost control at the company level in construction companies. Accounting systems. Construction project profit calculations. Financial analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Engineering MS, MSE or PHD student
CON	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Prerequisite(s): Construction Engineering OR Construction Management graduate student
CON	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	700	Research Methods	Course on research methods in a specific discipline.	N	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student

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CON	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student
CPI	101	Introduction to Informatics	Concepts, tools, techniques, and applications of informatics. Includes overview of programming, data management, visualization, modeling, and social implications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	111	Game Development I	Introduces video game design, art theory, and concepts as they apply to video game development. Basic art principles used in game development. Covers the fundamental video game art principles of 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets. Also includes game design, game production, asset production, and game programming. Hands-on experience by creating 2-D game prototypes belonging to different video game genres and evaluating the techniques.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	200	Math Foundation of Informatics	Practical introduction to the mathematics necessary for studies in informatics. Topics include discrete math, analytic geometry, calculus, and linear algebra.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	MA	Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 243 with C or better OR Visiting University Student
CPI	211	Game Development II	Introduces the basics of 3D game development by using a game engine. Focuses on the pipeline of 3D game development including environment and contents creation, scripting to control components, and graphics user interfaces development. Develops several 3D games for multi platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 111 with C or better OR Visiting University Student
CPI	220	App Data Struct and Algorithms	Thorough grounding in applied knowledge and skills related to algorithms and data structures used in the development of software designed to solve complex problems. Overview of computational and critical thinking skills that can be called upon to analyze and solve complex problems in multiple domains.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	221	Advan Obj Orient Prin w/Java	Advanced object-oriented programming using the Java language. Design concepts and problem solving.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 220 with C or better
CPI	310	Web Information Mgt System	Relational database design, entity-relationship modeling, relational algebra, SQL, database access through Web, Web data management, introduction to XML, fundamentals of Web application development, Web server architectures, lecture, in-class lab activities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	311	Game Engine Development	State-of-the-art techniques for computer game design and programming with an emphasis on 3-D graphics and interaction. Focuses on a practical, example-driven approach to learning the unique art of 3-D game development. Topics include graphics game engines, textures, shader programming, artificial intelligence, physics, modeling, sound effects, and techniques for user interfaces.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better OR Visiting University Student
CPI	321	Fundamentals of Game Art	Introduces art theory and concepts as they apply to video game development. Covers 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	350	Eval of Informatics Systems	Methods for evaluation of informatics systems, including design of computational and human experiments, ethnography, and analytic techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): GIS 270, GIS 470, IEE 380, STP 226, STP 231, or STP 420 with C or better OR Visiting University Student
CPI	360	Decision Making & Problem Solv	Practical use of database systems, computer graphics, and modeling to inform decision making.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		

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CPI	411	Graphics for Games	Examines real-time rendering of high-quality interactive graphics. Studies advances in graphics hardware and algorithms that make this possible. Examples of techniques and topics include nonphotorealistic rendering, occlusion culling, level of detail, terrain rendering, shadow generation, image-based rendering, and physical simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	421	3-D Modeling and Texturing	Provides working knowledge of 3-D modeling, texture mapping, and paint concepts for the creation of 3-D video games art assets. Students work on concepts such as 3-D lighting, high polygon mesh rendering, and various third-party software and how to integrate them into the asset production pipeline.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better OR Visiting University Student
CPI	441	Gaming Capstone	Industry-oriented course emphasizing the video game development process, technical skills, teamwork and communication among the students enrolled in the gaming certificate. Students partner with local industry involved in game development, visual art, and educational gaming and solve real-world problems by working in a team comprised of students from the three tracks available within the certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): BS Informatics or BIS (Computer Gaming) or Computer Gaming certificate; senior standing
CPI	460	Intelligent Interact Inst Sys	Intelligent interactive instructional systems serve as tutors, as learning companions or both. Covers their design, the technology that powers them, the learning theories that motivate them and results from experimental evaluations. Emphasizes intelligent tutoring systems, as they are a more mature technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CPI 460 or CSE 494 (Intelligent Instr Sys)
CPI	462	Dsgn for Lming in Vrtual Wrld	Focuses on issues of design for learning in virtual worlds by exploring: the history and evolution of virtual worlds, the theories behind the use of virtual worlds for learning, the design of curricula in virtual worlds, design guidelines for elements experienced in virtual worlds to support learning, design guidelines for learning quests and activities in virtual worlds. Also introduces virtual world building using Unity 3D.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 221, CSE 220, or CSE 240 with C or better; Credit is allowed for only CPI 494 (Design for Learning in Virtual Worlds) or CSE 494 (Design for Learning in Virtual Worlds) or CPI 462
CPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-12		
CPI	485	Informatics Capstone I	Team-based design of an informatics system; working with clients; development of requirements, use cases, class/object diagrams, and plans for quality assurance and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	L	Prerequisite(s): Informatics BS major; CPI 350 with C or better; CSE 463 with C or better; Credit is allowed for only CPI 485 or CSE 423 or CSE 485
CPI	486	Informatics Capstone II	Implementation of the informatics system designed during CPI 485; work processes; keeping designs consistent with implementations; conducting QA and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	4	L	Prerequisite(s): Informatics BS major; CPI 485 with C or better; Credit is allowed for only CPI 486 or CSE 423 or CSE 486
CPI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6		Prerequisite(s): Barrett Honors student
CPI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6	L	Prerequisite(s): Barrett Honors student
CPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		
CPI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-3		
CPI	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	101	Cross Sector Leadership	Prepares NGSC track members for success in their four-year journey while also sparking opportunities to develop as a leader throughout their Sun Devil careers. Provides a baseline for ethical decision making which is the cornerstone of effective leadership. This is accomplished through the lens of the public, private and nonprofit sectors. Also explores complex challenges we face and examples of successful cross-sector collaboration that have led to sustainable solutions. Additionally, students develop teamwork, time management, professionalism and respect for fellow NGSC team members.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1		Credit is allowed for only CPP 101 or CPP 194 (Next Generation Service Corps) or CPP 194 (Foundations of Cross Sector Leadership) OR Visiting University Student

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CPP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	201	NGSC Community Impact Lab	Behind every challenge is an opportunity to innovate. Course offers hands-on, service learning opportunities for students within the ASU Public Service Academy--Next Generation Service Corp (NGSC). Using a problem-solving method called human-centered design, student teams work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization that is based in research and empathy for the organization and their stakeholders. Beyond learning and applying the design thinking process, students also develop skills in team management, conflict management and reflection.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	2		Prerequisite(s): CPP 101; Credit is allowed for only CPP 201 or CPP 294 (NGSC Community Impact Lab) OR Visiting University Student
CPP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	301	Cross-Sector Collaboration	Examines how public, private and nonprofit organizations seek to address social challenges and explores how the three sectors work together and in isolation to tackle social problems. Students learn about the motivation of employees in the public, private and nonprofit sectors and the ways in which organizational structure, environment and legal contexts differently constrain or facilitate action within and across these organizations. Explores effective strategies for collaboration among the public, private and nonprofit sectors and identifies organizational similarities and points of contrast that could enhance or create barriers to such collaboration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 101; Pre- or corequisite(s): Public Service Academy student; minimum 45 hours; Credit is allowed for only CPP 301 or CPP 294 (Cross-Sector Collaboration)
CPP	350	Community Works	In the first part of the course, students apply the five concepts of interpersonal empathy while completing a 30-hour service project. After completing the service project, students apply the two concepts of social empathy to a social issue in their community. At the conclusion of the course, students know how interpersonal and social empathy can be developed as a skill to help their community within their public service career.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 350 or CPP 494 (Community Works) OR Visiting University Student
CPP	353	Community Impact Lab	Offers hands-on, service learning opportunities for upper-division students from the College of Public Service and Community Solutions. Using a problem-solving method called design thinking, student teams have the opportunity to work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 353 or CPP 494 (Community Impact Lab)
CPP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student
CPP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-7	L	
CPP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		

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CPP	510	Hazards Governance	Examines how hazards are managed by both community- and national-level policymaking and administrative systems, with a particular focus on understanding how policies and management practices are related to risk reduction and resilience capacity promotion. Explores what governance means in practice and presents existing research, including policy reports, cases studies and quantitative analyses of community-level and national-level hazards management programs and related public policies--and how their integration is relevant to hazards governance. Emphasizes understanding the nature of public goods production processes, including how inter-sector integration (i.e. between, public, private and nonprofit organizations) and extant community vulnerability profiles matter to the specific risk reduction efforts, and what those same efforts yield in terms of aggregate community resilience outcomes.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 510 or CPP 591 (Hazards Governance)
CPP	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511
CPP	512	Exercises for EMHS	Comprehensively explains the processes of emergency planning exercises in the domains of natural and technological hazards and homeland security, as well as other related domains such as public health or emergency medical services. Explores processes of emergency exercises within the Homeland Security Exercise & Evaluation Program (HSEEP) context and its standard guidelines that shape appropriate exercise practices.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	513	Pub Priv Partnerships for EMHS	Focuses on how public private partnerships (P3s) offer alternative mechanisms for supporting community emergency preparedness efforts, hazard and risk management practices, and community resilience promotion. The traditional form of a P3 model is typically a build-operate-maintain arrangement (with various permutations of those element combinations) around physical infrastructure. However, more complex public-private relationships related to emergency and disaster management issues, public health issues and other social welfare concerns have emerged over the past several decades. Investigating how these arrangements might affect emergency management, homeland security and the management of hazards and risk in general is critical to understanding how public sector operations are likely to function in the future in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	514	Intersector Coord for EMHS	Examines the nature of intersector and interagency coordination and collaboration efforts in the domain of emergency management and homeland security. Three core substantive area of focus: (1) covers the nature of inter-sector, inter-agency coordination and collaboration activities as a chief feature of the general emergency management function any community must address; (2) focuses on issues related to the required interaction between the local, county, state and federal government emergency management functions and the private sector; (3) focuses on the functional roles and the specific types of contributions made by public, private and nonprofit sector organizations in community preparedness for emergencies and disasters.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	520	Program Evaluation for EMHS	Examines core concepts and techniques of program evaluation and policy analysis and applies them to specific challenges in the domains of emergency management and homeland security. Develops knowledge and expertise in the practice of evaluating public sector programs, policies and other agency actions related to hazards issues--both natural and human-made. Develops students' knowledge, skill and ability in identifying appropriate research designs for particular evaluation and policy analysis problems; in managing data and focusing reports based on project objectives; and in appropriately characterizing and presenting empirical those data gathered for program evaluation and policy research projects. Provides an opportunity to learn about conducting evaluation and policy research in a way that is relevant to solving policy and management challenges germane to emergency management and homeland security agencies.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CRJ 511; Credit is allowed for only CPP 520 or CPP 591 (Program Evaluation in EMHS)
CPP	521	Finance & Management for EMHS	Focuses on the related topics of how state and local governments utilize use budgeting and financing techniques in the emergency services domain as well as how emergency/disaster services projects are managed. Specifically, the first part of the course covers budgeting and finance mechanisms and processes in the public sector generally and how those mechanisms and processes relate to emergency response, general hazards management and disaster recovery. The second part of the course covers core principles of project management and then applies those principles to process related to grant application and grant award management in the areas of preparedness, hazard mitigation and disaster recovery.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	523	Found Prog Eval I: Mult Reg	Regression serves as the foundation for modern quantitative program evaluation techniques. Regression analysis is not a single thing--it is a powerful set of tools used to examine relationships in data and test hypotheses concerning the significance of these relationships. Regression can be used to analyze observational data, in which case it can be used to identify important correlations that help us predict when events will occur together. In the program evaluation context we are specifically interested in causal analysis, which allows us to determine whether a management practice, a nonprofit or government program, or a specific public policy has a positive impact. When certain conditions are met we can use regression analysis to estimate the impact of a policy or program. This course builds a foundational understanding of the mechanics of multiple regression, the proper interpretation of regression models, and the circumstances in which we can use regression results for causal reasoning.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	524	Found Prog Eval II: Res Design	Covers important concepts in research design and common quasi-experimental tools for causal analysis.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523
CPP	525	Found Prog Eval III: Adv Reg	Extends previous course by translating each specific form of the counterfactual--pre-post with comparisons, reflexive design, and the post-test only design--into specific regression models that leverage each counterfactual. Helps expand program evaluation toolkit by demonstrating how to estimate several common regression models that leverage unique data and counterfactual specifications and teaches how to estimate program effects using a given research design.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 524
CPP	526	Found Data Sci I: Data Prog R	Data is an essential ingredient of any program evaluation or performance management system. Organizations that want to embrace an evidence-based approach to management need to develop processes for gathering data; linking multiple datasets; running analysis; and sharing results with stakeholders through reports, dashboards or Web applications. The ability to collect, organize and analyze data is a desirable skill set for professional knowledge workers, high-level management and evaluators. Introduces the R data programming language, an open source platform that has become an industry standard because of its flexibility and power.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	527	Found Data Sci II: Data Wrang	The data preparation cycle: gather, clean, tidy and wrangle the data to produce a custom research database.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 526
CPP	528	Found Data Sci III: Proj Mgt	The main tools and practices of managing large or complex data projects, typically involving teams. Students learn about project management tools used by open source software developers, useful tools for creating client reports, important considerations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 527
CPP	529	Data Analytics Practicum	Applies knowledge and tools from previous courses in program evaluation and data analytics in order to get practice building and analyzing custom research databases. Students are given a collection of raw data that needs to be linked together in order to conduct analysis, and guidance on how to implement a specific research question. Students merge the data, wrangle it into the proper format for analysis, apply the prescribed regression techniques, interpret results, and create a report with key findings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523; CPP 526
CPP	530	Ldrshp Innov Public Fire Svcs	Provides current and future fire service leaders with an understanding and the skills necessary to manage creativity and foster a culture of innovation in public fire and emergency services. The approach is to treat the fire officer as an entrepreneur who identifies ideas and opportunities, then builds a business case for innovation.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	540	Found Emergency Med Services	Examines the operational structure of emergency medical services in the United States, including the current organization, delivery and financing of these systems. Discusses strengths, weaknesses and future challenges of EMS with consideration for creating systems better integrated with the overall health care delivery system.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	550	Community Paramedicine: MIH	Explores mobile integrated health care and community paramedic programs and how health care professionals and community partners can work together to identify community health needs, foster partnerships and overcome hurdles in MIH/CP program development. Discusses examples of successful MIH/CP programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	560	Emerg Svcs Ops Analysis/Plng	Applies common data analysis tools and techniques appropriate to risk assessment, deployment analysis and performance measurement to evaluate an organization's abilities to respond to community risk.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	570	GIS for Hazards Analysis	Provides a basic level of familiarity with several aspects of geographic information science such as key geographic concepts and techniques related to the theory and application of geographic information systems (GIS). Covers topics such as data models, geographic coordinate system and map projections, data entry and editing, and various types of spatial analysis in both conceptual terms as well as practical application. Additionally, outlines a range of GIS-related activities in emergency management and homeland security. Exposes students to the current and potential roles of GIS in support of emergency management activities in each of the four stages of the emergency management cycle. Gives students a basic understanding of GIS and its possibilities along with the capabilities as they apply to emergency management and homeland security.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 570 or CPP 591 (GIS for Hazards Analysis)
CPP	575	U.S. Cyber & Info Sec Policy	Prepares students to understand and manage human and technical resources within the increasingly important cyber and information security domains. As high-profile data breaches and cyberattacks—that result in physical losses, disruptions and disasters—impose greater risks and costs on our public and private sector—as well as military and intelligence—networks, the policy and management aspects of these challenges have come to the fore. Compounding the technical and operational challenges arising from the protection of operating systems, networking and systems administration, managers and Chief Technology/Risk/Security/Data/Information Officers face a multidimensional set of political risks, including how to effectively manage data content and evaluation, information veracity and information sharing and distribution.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	576	Info Assurance Principles	The aim of this course is to provide insights into on modern cyber security threats and defensive controls and explore effective computer security and risk management strategies, Information Assurance (IA) practices and techniques. The course provides a graduate level foundation in IA for a diverse audience, from middle level managers to executives with non-technical and technical backgrounds and from variety of government, commercial and non-for-profit organisations. This course will explore concepts such as layered defense mechanisms, using different technologies and multiples thereof (true defense in depth), threat/risk identification and mitigation and incident response techniques. It will enable executive level managers to properly understand the real world challenges faced by their Cyber Security teams today. It will also assist in developing the frameworks, policies and the evidence-based decisions required to allow teams to protect their environments efficiently and to understand the resulting costs and benefits.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	577	Cybersec & Crit Infra Protect	Critical Infrastructure (CI) refers to the diverse, complex, inter-dependent delivery and support systems as well as the distributed networks for all large-scale services that are essential to a nation. These services include emergency response, law enforcement databases, supervisory control and data acquisition (SCADA) systems, power control networks, military support services, financial applications and mobile communications. Some national services are provided directly by government, but most are provided by commercial organisations and groups such as Internet service providers, airlines and banks. Systems that operate in national critical infrastructure run everything from electricity power plants to gas pipelines, hospitals and highways.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	578	Cyber Defense	Designed to provide students with knowledge on how to defend organisations and their systems. It is designed to provide a deep understanding of cyber defense within organisations and the necessary skills to examine the operational aspects of cyberspace, information assurance and cybersecurity. The emphasis of this course is to provide a contextual link between the management and governance of an organisation and its rapidly evolving cybersecurity and cyber-defense requirements. This course also provides insight into cyber governance in the Defense context, focusing on the management and acquisition of mission-critical systems and ensuring that these systems are resilient to internal faults and external cyber disruptions.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	581	Bioterrorism & Health Intel	This course is for professionals involved in any aspect of bioterrorism preparedness and response, who wish to be intellectually challenged, to think outside the square, to gain insight into quantum changes in science which pose a biosecurity risk, to understand the different perspectives of sectors involved in response, and to gain new critical skills which can be applied in their professional practice.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	582	Infectious Disease Intel	This course aims to give you the skills to critically evaluate, analyse and interpret important information and issues in infectious diseases intelligence as it applies to human health.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	583	Hlth Aspects Crises/Emerg/Dis	The aim of the course is to build learners' capacity to operate as public health professionals and managers within the context of local or international crises, emergencies and disasters. It will develop their knowledge of the healthcare aspects of these events, prepare them to assess and respond to such events from the perspective of healthcare services and providers, and assist them to develop the skills required to work within disaster and complex emergency settings.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		

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CPP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	568	Group Intervention	Provides advanced MC or PhD students with supervisory experience serving as Group Leaders or Co-Leaders to students currently enrolled in the prerequisite course. Time dedicated to group leadership or supervision accumulates as "Direct Contact" or "Group Supervision" hours and fulfills the "maladaptive/intervention" requirements or may be applied as an elective for MC students and PhD students. Students are selected for enrollment in this course with required instructor or departmental approval.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; CED 567; Credit is allowed for only CPY 568 or CPY 691 (Group Intervention)
CPY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	622	Child Counseling-Play Therapy	The use of play and expressive arts in counseling. Major areas of focus include: theoretical orientations to play therapy and child counseling, foundations of counseling, practice of play therapy and child counseling skills, and assessment/treatment planning. Integrates play media such as guided imagery, puppets and dolls, art, creative dramatics, music and movement, games, and sand play. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of play counseling. Includes both directive and nondirective play counseling experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; Credit is allowed for only CPY 622 or CPY 691 (Child Counseling and Play Therapy)
CPY	623	Counseling At-Risk Youth	Examines the behaviors that place adolescents at risk for not achieving career goals and interventions to address these behaviors.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	635	Professional Development	A series of presentations designed to expose beginning doctoral students to the multidimensional facets and competencies for being a counseling psychologist.	N	SEM	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Counseling Psychology PhD student; Credit is allowed for only CPY 635 or CPY 691 (Professional Development)
CPY	644	Psychology of Careers	Advanced career counseling, including theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate OR undergraduate postbaccalaureate student
CPY	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CPY	650	Counseling Latinos	Survey course addressing mental health concerns and perspectives for individuals and families of Latino, Spanish-speaking origin.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	651	Personality Assessment	Training in the use of major objective personality instruments to assess psychological symptoms; emphasizes MMPI-2 and MCMI-III.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: CED 523
CPY	652	Indiv Intel Assessment	Examines the nature of human intellectual/cognitive abilities, their standardized measurement, and related issues in interpretation and practice. Provides preliminary training and experience in the administration and interpretation of two of the most widely used tests in this area: the Wechsler Adult Intelligence Scale, 4th ed. & the Wechsler Intelligence Scale for Children, 5th ed. Introduces other instruments at a topical level. Emphasizes theoretical foundations, practice skills, cultural considerations and ethical issues in intellectual/cognitive assessment. Operates under the broad principles of a cooperative learning approach. By researching and presenting on key course concepts, students practice incorporating a scholarly and empirical basis into their clinical work to develop specialized expertise in clinical assessment. Class format includes instructor- and student-led didactics, discussion and practice labs.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 652 or CPY 691 (Individual Intellect Assessment)

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CPY	653	Neuropsychology	Assumes students have knowledge of basic topics in physiological psychology and/or in brain and behavior-type courses. Concentrates on human neuropsychology; the main topics are related to functional brain organization and hemispheric specialization, with a particular emphasis on functional assessment. Includes several other topics related to late-breaking empirical developments in the field. Read and discuss articles and studies, employing a large variety of methodologies, ranging from the 1950s to the latest publications, with both normal and pathological subject populations. Much of the course is spent discussing brain assessment techniques to study cognitive function and dysfunction. Emphasizes commonly used approaches in the assessment and measurement of human behavior and how the human brain is responsible for cognition, language, memory, spatial processing, emotion and personality.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 653 or CPY 691 (Neuropsychology)
CPY	654	Biobases of Behavior	Fulfills the APA requirement for a three-semester-hour course devoted to the broad and general biological bases that underlie behavior, and surveys a variety of fundamental physiological principles. Designed for students enrolled in an APA-accredited professional psychology training program; it does not focus on application of physiological principles to psychological practice. Capitalizes on most students' prior familiarity with psychopathology to help enable acquisition of general information about important brain structures and functions. Includes information about basic nervous system-related biochemistry, cellular structure and physiology, and anatomy and physiology. Students participate in classroom problem solving activities during which an array of principles is covered based on reading assignments. Challenges students to consider the role of biological, evolutionary and genetic factors in the expression of an array of typical and atypical behavior.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 654 or CPY 691 (Biobases of Behavior)
CPY	660	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CPY	668	Grant Writing	Develops successful proposals for educational research projects. Students gain experience writing for federal agencies, reviewing, and being evaluated on grant proposals.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CPY or HED 668
CPY	670	Individual Differences	Focuses on definitions and assessment of ways humans vary on psychological constructs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671
CPY	673	Trauma in Counseling	Addresses the impact of crisis, disasters, sexual assault and other trauma-causing events on individuals and communities, as well as the treatment of trauma-related disorders. Examines trauma through the impact on the brain regions, impact on memory, variations of emotional regulation and somatic responses. Also addresses operations of emergency management systems within clinical mental health agencies and in the community. Also gives attention to vicarious trauma and caring for the caregiver. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of working with trauma. Includes both directive and nondirective experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPY 673 or CPY 691 (Working with Trauma in Counseling)
CPY	674	Counseling Women	Explores women's development and its implications for counseling. Sexism in mental health, sex differences in diagnosis and psychopathology, and women's particular treatment needs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	675	Health and Wellness Counseling	Theory, research, and practice in health and wellness counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	676	Social Bases of Behavior	In-depth examination of contemporary research and theory in selected areas of social psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPY	677	Advanced Counseling	Advanced topics in counseling theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CPY	678	Supervision Theory	Models of therapist development and clinical supervision.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	679	History/Systems of Psychology	Examines the development and differentiation of the discipline of psychology from its origins in philosophy to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	694	Substance Use, Disorders	Develops knowledge and skills for conducting psychotherapeutic and educational interventions to address substance use disorders and associated concerns.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	701	Science/Practice Counsel Psych	Directed experiences involving the integration of theory, research, and practice in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	702	Research Methods in Counseling	Applies experimental and/or quasi-experimental methods to theory construction and treatment evaluation in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate

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CPY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CRD	100	Intro to Community Development	Focuses on communities and draws on an interdisciplinary lens to orient students to the foundations of community development. Presents a holistic approach to communities as complex systems with the goal of addressing ecological, economic, social, cultural and political dimensions that play a vital role in decision making. Provides effective tools with which to engage various stakeholders (e.g., government, private, nonprofit, community). Framed within the theoretical context of social justice and community well-being.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		Pre-requisite: Maximum 25 hours; Credit is allowed for only CRD, PRM or TDM 191
CRD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	200	Foundations Community Devel	Focuses on development within the context of communities and draws on a holistic approach that encompasses social, economic and ecological dimensions of development. Orients students to municipal, state, national and international examples of development. Critical analyses of the application of development-related practices and policies implemented locally and internationally equip students with key assessment tools for complex systems. Presentations from key stakeholders grant students with first-hand information regarding issues, challenges and solutions that have been applied to various community development contexts.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100
CRD	210	Community Services&Professions	Introduces the system of public, nonprofit and private sector resources and services comprising contemporary communities. Organized into three modular units with emphasis on the delivery of services in the community sports, parks and recreation, tourism, and nonprofit professions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 200, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235
CRD	300	Rsrch Methods & Applied Skills	Orients students to the main methodological approaches utilized within the practice and study of community development. Discussion on research design and data collection complements the concepts employed in quantitative and qualitative approaches to development. Presents computer software applications. The goal is not mastery of research methods, but ability to critically consume research outputs as well as to design research-related documents.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200
CRD	301	Sustainable Communities	Analyzes community as concept and as an organizing system for promoting sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 210, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	302	Inclusive Community Developmnt	Examines the characteristics of diverse populations across the lifespan to effectively develop inclusive community programs and services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB & C	Prereq(s): ENG 102, 105, or 108 w/ C or better; MAT 142 or higher w/ C or better; CRD 200, NLM 160, or PRM 120 w/ C or better; min 2.50 GPA; min 45 hrs; Pre- or corequisite(s): CRD 210 or PRM 210 w/ C or better if completed OR Visiting University Student

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CRD	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CRD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	400	Capstone: Ldrshp, App Skills	Integrates and synthesizes knowledge disseminated throughout the entire community development degree program. Students purposefully revisit applications and principles of community development as well as community engagement skills and research tools necessary in collaborating with various groups of stakeholders. Introduces and applies concepts of conduct and ethics to discussions of careers in community development. Students apply acquired knowledge through culminating groups projects and group presentations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200; CRD 300
CRD	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student
CRD	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CRD	403	Ldrshp & Prof Devlpmnt	Examines leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s) with C or better: CRD 210, NLM 210, PRM 210, or TDM 210; CRD 301, CRD 302, NLM 301, PRM 301, or TDM 301; senior standing; min 2.50 GPA; Credit is allowed for only CRD 403 or NLM 403 or PRM 403 or TDM 403 OR Visiting University Student
CRD	435	Service Learning/Community Dev	Applies youth and adult development theories through community service immersion in collaboration with local nonprofit partners.	N	REC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
CRD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours
CRD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
CRD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
CRD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
CRD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	502	Statistical and Data Analysis	Introduces descriptive and inferential methods used in community development, with an emphasis on nonprofit, tourism, and recreation sciences. Students gain experience using statistical software.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	530	Community Services Management	Examines and applies organizational behavior, leadership, human resources, development, planning, and risk management to profession.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	552	Critical Issues	Examines critical research issues in the leisure, recreation and tourism fields.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CRD	555	Theoretical Persp in Comm Dev	Reviews theoretical and empirical literature in community development with an emphasis on nonprofit, tourism, and recreation sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	563	Advocacy in Rec Therapy	Explores issues facing therapeutic recreation professionals and advocacy practices integral to therapeutic recreation service delivery. Investigates a variety of topics and community-engaged experiences facilitate the development of competencies needed to effectively lead therapeutic recreation programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 563 or PRM 440 or CRD 598 (Advocacy in Therapeutic Recreation)
CRD	569	Adv Tourism&Recreation Studies	Advanced study of tourism with an emphasis on relevant practices, theories, and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	570	Foundations of Community Dev	Compare and contrast leading theories of community development in the historical context of the United States.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	571	Community Development Process	Develops an understanding of the overall process of pursuing intentional community change and builds education, mobilization, and facilitation skills for engaging in the community development process.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CRD, NLM 572 or NLM 598 (Community & Social Innovations)
CRD	573	Local and Regional Development	Builds core knowledge and analytical skills for the methods and sustainable outcomes of local and regional environmental and economic development.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	574	Applied Research Skills	Develops skills in common qualitative and quantitative data collection and analysis methods used by community development practitioners.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	577	Community Building Practice	Builds core knowledge and analytical skills for the ethics and practice of building equitable communities, focusing on the development of self-efficacy, agency and solidarity.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		
CRD	596	Community Development Capstone	Capstone application of core values, knowledge and skills in an applied project. The final product is a deliverable to a community partner, and serves as a culminating experience for the Master of Professional Studies in Community Development Practice.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571; CRD 572; CRD 573; CRD 574
CRD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		

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CRD	610	Sustainable Communities	Analyzes community as concept and as an organizing system for promoting sustainability. Considers issues at different scales, ranging from urban to rural, local to global, historical to contemporary. Critically examines the role of public, private, and nonprofit institutions in promoting quality of life.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	620	Community Research Methods	Introduces community research methods, with emphasis on methodological questions and techniques relevant to contemporary community-based research.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	640	Seminar I	A seminar designed to explore issues related to advancing a career as a researcher in the fields associated with community resources and development (i.e., nonprofit, recreation and parks, tourism). Critical to this study is an understanding of the conduct of high quality research, an understanding of issues that arise in professional settings (e.g., expediency vs. effectiveness), and ethical principles and processes that undergird research.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development
CRD	650	Research Seminar II	Helps prepare doctoral students to become productive and successful social scientists in community resources and development. Covers a wide range of topics under the broader conceptual umbrella of research, teaching, and service.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development
CRD	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	100	Intro to Criminal Justice	History and current practice of the criminal justice system. Roles of law enforcement agencies, courts and correctional agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	
CRJ	201	Crime Control Policies	Dimensions and causes of crime. Criminal justice system responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	203	Courts and Sentencing	Structure and operation of criminal court system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	204	Juvenile Justice	History and development of the juvenile court and the juvenile justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	210	Intro to Crim Investigations	Studies the basic principles of criminal investigation including the analysis of investigative techniques, criminal patterns and modus operandi, interviewing and interrogation strategies, collection and management of evidence, surveillance, and crime scene investigation. Covers theories, philosophies and concepts related to suppression of crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	211	Documenting the Crime Scene	Practical approach to evidence identification; documentation of the location of evidence; crime scene sketching; and the collection and handling of evidence from the crime scene, to the crime laboratory, and to presentation in court. Includes lab exercises designed to reinforce important investigative skills.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	230	Introduction to Policing	History of police. Contemporary police work. Problems in policing.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		

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CRJ	240	Introduction to Corrections	Structure and operation of corrections system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	260	Substantive Criminal Law	Statutory elements of crimes and defenses. Historical development of criminal law. Public policy implications.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	270	Community Justice	Collaborative and evidence-based approach to reducing crime, incorporating offenders, victims, the community and criminal justice agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	
CRJ	284	Professional Growth in CJ	Targeted field practice with criminal justice agencies. Prerequisite for internship.	N	LEC	N	YGB	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better
CRJ	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		
CRJ	300	Oral & Written Com for CCJ	Develops critical oral and written communication skills with emphasis on locating, analyzing, properly citing, and persuasively using primary and secondary sources in criminology and criminal justice.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better
CRJ	302	Research Methods	Validity and reliability of research designs and data collection.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	303	Statistical Analysis	Fundamentals and application of descriptive and inferential statistics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	CS	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	305	Gender, Crime & Criminal Justice	Women as offenders, victims and professionals in the criminal justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	306	Race, Ethnicity, Crime	Minority issues in the criminal justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	309	Criminology	Theoretical explanations for criminal behavior.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prereq(s) w/ C or better: Crim & Crim Just or Pub Serv & Pub Policy (Crim) major; CRJ 100; CRJ 201; min 56 hrs OR Psych (Forensic Psych) BA or BS major; Credit allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308) OR Visiting University Student
CRJ	315	Police Organization and Mgmt	Structure, processes and behavior of police organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100, JUS 105, or JUS 305 with C or better; CRJ 230 with C or better
CRJ	317	Inside-Out Prison Excg Program	Pairs university students and correctional students inside a prison to examine the criminal justice system through a combination of theoretical knowledge and practical experience, paying special attention to race, gender, socioeconomic status, age, and ethnicity.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRJ 317 or CRJ 494 (Inside-Out Prison Exchange)
CRJ	321	Evidence: Imperatives of Proof	Problems and means of establishing identity and fact in relation to arrest, detention, adjudication, sentencing, and correctional case management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	350	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		

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CRJ	403	Victims and the Criminal Jus	Victimization theories. Nature and extent of victimization. Interactions among victims, the criminal justice system and society. Victim rights and services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Crimnlgy & Crim Just mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimnlgy or Emer Mgt & Hmlnd Sec or Law & Pol) mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	404	Juvenile Delinquency	Causes, correlations and strategies to reduce juvenile delinquency.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	405	Neighborhoods and Crime	Variation in crime across neighborhoods from ecology of crime and urban sociology perspectives. Influence of social institutions on community crime patterns.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301 with C or better; PAF 302 with C or better
CRJ	406	Sex Crimes	Prevalence, nature and etiology of sex crimes. Response of criminal justice system to victims and perpetrators of sex crimes.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Crimnlgy & Crim Just mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimnlgy or Emer Mgt & Hmlnd Sec or Law & Pol) mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	408	Drugs and Crime	Patterns of illegal drug use. Problems, practices and policies associated with drugs, crime and drug policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	409	Police Accountability	Command and control systems. Managing police culture. Community policing and accountability to the community. Police training.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	410	Procedural Criminal Law	Criminal procedures mandated by the U.S. Constitution.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Crim & Crim Just mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimnlgy or Emer Mgt & Homeland Sec or Law & Pol) mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	411	Legal Issues in Corrections	Explores the constitutional and statutory law concerning prisoners in the United States. Places special emphasis on the First, Fourth, Fifth, Sixth, Eighth and Fourteenth Amendment rights of persons under the jurisdiction of correctional agencies, as well as their rights under relevant statutes and case law, including those affecting habeas corpus right.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Correctional Studies cert; CRJ 100 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302

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CRJ	412	International Terrorism	Structural, organizational, political and legal characteristics of international terrorism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereqs w/C or better: Crimnlgy & Crim Just major; CRJ 302; CRJ 303 OR Publ Serv & Publ Pol (Crimnlgy or Emer Mgt & Homeland Sec or Law & Pol) major; PAF 301; PAF 302; Credit allowed for CRJ 412 or CRJ 494 (Intl Terrorism) OR Visiting University Student
CRJ	414	Advanced Criminological Theory	Critical assessment of criminological thought using original readings.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology & Crim Jus major: CRJ 302 w/ C or better; CRJ 303 with a C or better OR Law & Humn Behav Cert Students: CRJ 100 with a C or better; min junior standing; Credit is allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308)
CRJ	417	Cyber Terrorism	Terrorism perpetuated online. Terrorism and technology.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	419	Domestic Terrorism	Evolution of domestic terrorism in the United States. History and future of domestic security. Public policy responses. Internal and external political implications.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	422	Violence in America	Theories, patterns, prevention and policy responses to violence in the United States. Varieties of violence including domestic, gang-related, hate crimes, school violence and sex crimes.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	423	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
CRJ	433	Death Investigations	Medico-legal investigation of death via postmortem examinations. Identification, thanatology, thanato-etiology of unexpected natural deaths, accidental deaths, suicides and homicides. Forensic examination of living people following sexual assault, traffic offenses, child abuse and drug crimes.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301; PAF 302
CRJ	434	Drugs of Abuse	Pharmacological and toxicological characteristics of commonly abused drugs such as alcohol, barbiturates, amphetamines, narcotics, stimulants and hallucinogens. Forensic toxicology. Acute and long-term effects of drug abuse.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s): w/ min C: Crmnlgy & Crim Just mjr: CRJ 302; CRJ 303 OR Lw & Hman Bhvior crt: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pblc Serv & Pblc Pol (Crimnlgy or Emerg Mgt & Hmind Sec or Lw & Pol) mjr: PAF 301; PAF 302 OR Visiting University Student
CRJ	435	Crime & Forensic Mental Health	Clinical assessment of people under court jurisdiction. Topics include psychological paradigms, nomenclature of mental disorders, forensic clinical assessment, mental disorders and crime, legal standards governing mentally disordered criminal offenders.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prerequisite(s): w/ min C: Crmnlgy&Crim Just maj: CRJ 302; 303 OR Lw&Hum Behav cert: CRJ 302; 303 or PSY 230; 290 OR Publ Srv&Publ Pol (Crimnlgy or Emer Mgt&Hmind Sec or Law&Pol) maj: PAF 301; 302; Credit for only CRJ 435 or 494 (Crime&Mntl Illness)

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CRJ	443	Community Corrections	Probation and parole. Types of community corrections programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law and Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	444	Institutional Corrections	Provides an overview of secure correctional facilities in the U.S. with a focus on prisons and jails.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology or Emergency Management and Homeland Security or Law and Policy) BS major; PAF 301; PAF 302
CRJ	445	Engaging Correctional Pops	Provides an overview to risk and needs assessment with correctional populations, with a particular focus on introducing tools to engage with and rehabilitate individuals.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	450	Crime Analysis	Tactical, strategic and administrative aspects of crime analysis and crime mapping as practiced in everyday policing. Environmental criminology.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	455	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism, and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 455 or CRJ 555 or CRJ 494 (Police and Int'l Terrorism-Israel)
CRJ	456	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 456 or CRJ 556 or CRJ 494 (Etiology of Martyrdom)
CRJ	461	Domestic Violence	Legal, historical, theoretical, and treatment aspects of domestic violence, including child abuse, woman battering, incest, and marital rape.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	462	Gangs	History and development of gangs. Criminal justice system responses. Nature of gangs and gang members.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	463	White Collar Crime	Business, professional and official lawbreaking including consumer fraud, securities violations, unethical behavior and political corruption.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student

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CRJ	464	Organized Crime	Nature and history of organized crime. Theories of containment. Criminal justice agency responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	470	Discretionary Justice	Use and abuse of discretion in the criminal justice system. Theoretical and empirical links between discretion and discrimination based on race, ethnicity and gender.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L or SB	Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security or Law & Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
CRJ	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): minimum 45 hours
CRJ	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-6		Prerequisite(s) with C or better: Barrett Honors stdnt, Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Barrett Honors stdnt, Public Serv & Public Policy (Criminology, Emrgncy Mgt & Homeland Sec, or Law & Policy) BS major; PAF 301; PAF 302
CRJ	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-6	L	Prerequisite(s) with C or better: Barrett Honors stdnt, Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Barrett Honors stdnt, Public Serv & Public Policy (Criminology, Emrgncy Mgt & Homeland Sec, or Law & Policy) BS major; PAF 301; PAF 302
CRJ	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		Prereqs w/ C or better: Crim & Crim Just BS mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Srv & Pub Pol (Crimlgy, Emrgncy Mgt & Homeland Sec, or Law & Pol) BS mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	496	Directed Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to contribute to a specific project such as a report or publication. Tasks may include data collection and coding, data analysis, literature reviews and producing research reports. Neither a substitute for a catalog course nor a means of taking a catalog course on an individual basis. Requires application well in advance of regular registration with the student's advisor, the advisor's signature, and approval by both the faculty member with whom the student will work and the director of the school offering the course.	N	RSC	Y	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-3		Prerequisite(s) with C or better: Criminology & Criminal Justice BS major; CRJ 302; minimum junior standing OR Public Service & Public Policy (Criminology, Emergency Mgmt & Homeland Security, or Law & Policy) BS major; PAF 302; minimum junior standing
CRJ	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-3		Prerequisite(s): minimum 45 hours
CRJ	501	Seminar in Criminal Justice	Overview of the American criminal justice system, with emphasis on policy issues in police, courts, sentencing, corrections.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS student OR Forensic Psychology MS student OR Criminology & Criminal Justice PHD student

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CRJ	502	Seminar in Criminology	Theory and research on the nature, causes, and prediction of criminal careers and events.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS student OR Forensic Psychology MS student OR Criminology & Criminal Justice PHD student
CRJ	503	Research Methods	Introduces data analysis; overview of research methods used in social science research, including experimental design, survey research, field research, and evaluation research.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	504	Statistical Tools/Criminal Jus	Focuses on essential statistical analysis that can be used in criminal justice and related agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	505	Thry & Prac Criminal Justice	Capstone course for School of Criminology and Criminal Justice master's students. Students complete a project that requires the application of knowledge from program coursework.	N	RSC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student; CRJ 501; CRJ 502; CRJ 510; CRJ 511 OR Criminology and Criminal Justice MS student; CRJ 501; CRJ 502; CRJ 503; CRJ 504
CRJ	510	CJ Planning&Program Evaluation	Examines the application of alternative models of strategic planning to the criminal justice system. Covers methods of evaluating criminal justice policies and practices.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	511	Applied Data Analysis in Crim	Examines a variety of tools used in the analysis of criminal justice data, including GIS mapping.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS student OR Forensic Psychology MS student OR Criminology & Criminal Justice PHD student
CRJ	512	Seminar in Policing	Graduate-level review of policing and police organizations. Seminar examines research on police strategies and practices designed to address crime.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	513	Seminar in Courts & Sentencing	Overview of the nature, proposed principles, and theoretical doctrine of the courts and sentencing policies in criminal justice.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS student OR Forensic Psychology MS student OR Criminology & Criminal Justice PHD student
CRJ	514	Seminar in Corrections	Theory, research, and policy issues regarding community-based and institutional correction programs.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	515	Seminar in Women and Crime	Introduces students to issues regarding women and the criminal justice system, focusing on their roles as offenders, victims and professionals.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	516	Seminar in Crim Jus Org & Mgmt	How external and internal variables shape criminal justice systems' organizational behaviors. Emphasizes strategic hiring, professional socialization, effective leadership, progressive discipline, interagency collaboration and organizational change.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	517	Juvenile Delinquency & Justice	Examines patterns and correlates of delinquency within the context of theories of delinquency. Reviews the response of the juvenile justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	518	Race/Ethnicity,Crime & Justice	Theoretical perspectives and research on the overrepresentation of racial minorities as victims, offenders, and defendants in the criminal justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	519	Seminar on Victimization	Examines theory and research concerning victimization and consequences for victims, society, and the justice system. Also examines effective responses to victims' post-crime needs.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student

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CRJ	520	Seminar on Violent Crime	Examines patterns and correlates of violent crime, as well as prevention strategies and policy implications.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	521	Seminar on the Nature of Crime	Examines patterns and correlates of crime at individual, situational, and aggregate levels. Topics include defining crime, offender typographies, and criminal careers.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	522	Seminar on Gangs and Crime	Theoretical perspectives and research on gangs and crime, and on the role of the community and the criminal justice system in causes and control.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	524	Seminar on Punishment & Society	Examines the fundamental philosophical principles of justice and punishment. Includes a comparative and historical perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	525	Life-Course Criminology	Provides an intensive examination of life-course explanations of crime, the life-course perspective and a theoretical orientation, and research methods used in life-course research.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	526	Theories of Crime Causation	Provides an overview of the major theoretical statements on crime causation, especially those explanations that focus on individual-level criminal offending.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or PhD major; Credit is allowed for only CRJ 526 or 598 (Theories of Crime Causation)
CRJ	527	Police Accountability	Examines the great authority of police, the various and most common ways that police abuse that authority, the consequences of those abuses, and accountability mechanisms that can prevent those abuses from occurring.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: MA in Criminal Justice or MS in Criminology and Criminal Justice or PhD in Criminology and Criminal Justice major; Credit is allowed for only CRJ 527 or 598 (Police Accountability)
CRJ	528	Prison & Jail Administration	Overview of prison and jail administrative practices, with emphasis on policy and management issues in modern correctional institutions.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Science PhD student
CRJ	529	Community Corrections	Provides a review of theory, research and policy focusing primarily on correctional strategies and programs that take place within the community setting, as well as the function of community corrections within the larger correctional system. Gives particular attention to the purpose and goals of community-based corrections; the historical development of probation and parole practices; and contemporary community corrections programs and strategies such as evidence-based practices, risk assessment, offender reentry, sex offender management, diversion, restitution, community service programs and other emerging alternatives to traditional incarceration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology & Criminal Justice MS or PhD, or Forensic Psychology MS student
CRJ	530	Seminar in Forensics	Explores recent and sometimes controversial developments in forensic science. Includes topics such as quality assurance, the CSI effect and the National Academy of Sciences' report entitled "Strengthening Forensic Science in the United States: A Path Forward."	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 530 or CRJ 598 (Seminar in Forensics)
CRJ	531	Crime Mapping	Examines the applied research methodology and conceptual framework used to conduct spatial analysis within the crime analysis profession.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 531 or CRJ 598 (Crime Mapping)
CRJ	532	Sex Crimes	Not only discusses the distinctions among types of offenders, but also applies theory, analyzes public policy, examines the effect of sex offenses on victims, and discusses how we've legislated sexual behavior over human history.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student; Credit is allowed for only CRJ 532 or CRJ 598 (Sex Offenders & Sex Crimes)

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CRJ	533	Seminar in White Collar Crime	Provides a general overview of white collar crimes including forms, contexts and response by the criminal justice system toward offenders and victims. Also addresses theoretical perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 533 or CRJ 598 (Seminar in White-Collar Crime)
CRJ	535	Crime & Forensic Mental Health	This interdisciplinary course, which draws from the fields of criminology, psychology, sociology and law, focuses on the clinical assessment of people under the jurisdiction of a court of law.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, or Forensic Psychology MS student; Credit is allowed for only CRJ 535 or CRJ 598 (Crime and Forensic Mental Health)
CRJ	537	Criminal Procedure	Explores the criminal procedures mandated by the U.S. Constitution as applied to criminal investigations with emphases on pretrial rights under the Fourth, Fifth and Sixth Amendments.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, Forensic Science PSM, or Law and Psychology PhD student
CRJ	553	Terrorism/Weapons of Mass Des	Historical evolution of terrorism and weapons of mass destruction. Analyzes current theories and mitigation, preparedness, and response tactics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	554	Homeland Security	Presents skills necessary to develop policies, strategies, programs, and organizational structure of an all hazards/all risk homeland security program.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Emergency Management and Homeland Security MA or Criminology & Criminal Justice MS or Criminology & Criminal Justice PhD student; Credit is allowed for only PAF 461 or CRJ 554
CRJ	555	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 445 or CRJ 555 or CRJ 598 (Police and Int'l Terrorism-Israel)
CRJ	556	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD students; Credit is allowed for only CRJ 456 or CRJ 556 or CRJ 598 (Etiology of Martyrdom)
CRJ	557	Seminar in Domestic Terrorism	Develops a foundation of theoretical approaches to understanding domestic terrorism in the United States of America.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 557 or CRJ 598 (Seminar in Domestic Terrorism)
CRJ	558	International Terrorism	Reviews the various definitions of terrorism and how to apply these to terrorism issues and instances globally.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS student OR Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 558 or CRJ 598 (International Terrorism)
CRJ	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students

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CRJ	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Master of Arts in Criminal Justice or Master of Science in Criminology & Criminal Justice or PhD in Criminology & Criminal Justice students
CRJ	601	Seminar, Criminological Theory	Examines historical and contemporary criminological theories.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	602	Seminar, CJ Policy & Practice	Analyzes responses to crime and the operation of criminal justice system, with emphasis on theory and research on effectiveness of policies and practices of the system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	603	Advanced Research Design	Exposes students to advanced topics in research design and methodology in preparation for writing the doctoral dissertation.	N	RSC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	604	Advanced Statistical Analysis	Use and application of advanced statistical techniques and multivariate analysis of data.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	605	Quantitative Methods	Explores advanced techniques of statistical analysis within the field of criminal justice.	N	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	606	Adv Topics-Theoretical Crimin	Focuses on criminological theory construction, historical and contemporary theoretical debates within criminology, theory testing, empirical support for theories, and theoretical integration.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	607	Advanced Topics in Policing	Covers the major issues related to policing and police organizations in the United States. Principal focus on policing and police organizations in large cities, with a focus on police organizational structure, police culture, police organizational environment, police decision making and change in the police organization.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	608	Adv Topics-Courts & Sentencing	Focuses on recent research on charging, plea bargaining, bail decision making, jury decision making and sentencing, as well as the impact of recent reforms directed at the criminal court system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	609	Advanced Topics in Corrections	Provides a critical examination of the theoretical framework underpinning current correctional policy (institutional and community based), as well as advanced, in-depth analyses of contemporary issues surrounding corrections.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	610	Adv Topics in Juvenile Justice	Examines the meaning of the concept of juvenile delinquency as a separate entity in the criminal justice system. Considers the relationship between social attitudes and definitions of youthful law violation, and reviews studies on various forms of delinquency, such as drug offenses, sex delinquency, and status offenders. Also focuses on the internal workings of the juvenile justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	611	Adv Topics Crime&Victimization	Examines research on criminal offending and victimization, focusing on the correlates of offending and victimization, risk and protective factors, and policies designed to reduce the impact of crime on victims.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	612	Adv Topics in Race, Gender&CJ	Examines the interrelationships among race and ethnicity, gender, crime and the criminal justice system. Focuses on theoretical perspectives and empirical research on racial minorities and women as victims, offenders, and criminal justice professionals.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	613	Qualitative Methods	Provides students with an examination of the design, execution, and write-up of qualitative research. Discusses methods of data collection, including participant-observation, ethnography, and interviewing.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Pre-requisite: Criminology and Criminal Justice PhD student

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CRJ	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-15		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1		Pre-requisite: Criminology and Criminal Justice PhD student
CRJ	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-15		Pre-requisite: Criminology and Criminal Justice PhD student
CSE	100	Prin of Programming with C++	Principles of problem solving using C++, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	110	Principles of Programming	Concepts of problem solving using an object-oriented programming language, algorithm design, structured programming, fundamental algorithms and techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): degree-seeking student; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
CSE	180	Computer Literacy	Students gain fluency in integrating technology to efficiently and effectively solve problems using computational thinking.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
CSE	205	Object-Oriented Program & Data	Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	Prerequisite(s): CSE 110 with C or better; Credit is allowed for only ACO 102 or CSE 205 OR Visiting University Student
CSE	220	Programming for Computer Engr	Introduction to C/C++, systems programming, and concurrency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CSE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs: degree-seeking stndt w/min C: CSE 100/110; CSE 120/EEE 120 OR Sftwr Engr or Engr Mgt maj w/min C: CSE 110; SER 232 OR Elec Engr maj; CSE 100/110; CSE 120/EEE 120 OR Cmp Sci & Engr grad; Credit for CSE 230/EEE 230 OR Visiting University Student
CSE	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240 OR Visiting University Student
CSE	259	Logic in Computer Science	Logic has been called the calculus of computer science. The argument is that logic plays a fundamental role in computer science, similar to that played by calculus in physical sciences and other engineering disciplines. Indeed, logic plays an important role in computer architecture (Boolean logic, digital gates, hardware verification); software engineering (specification, verification); programming languages (semantics, type theory, logic programming); databases (relational algebra, database query language); artificial intelligence (automated theorem proving, knowledge representation); algorithms and theory of computation (complexity, computability, expressiveness). This course is a mathematically solid introduction to propositional logic, first order logic, logic programming, and their applications in computer science.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CSE 259 or CSE 294 (Logic in Computer Science) OR Visiting University Student

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CSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
CSE	301	Computing Ethics	Ethics for computing majors: history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 205 with C or better; FSE 100 with C or better OR Informatics BS major; CPI 101 with C or better; CSE 205 with C or better OR Visiting University Student
CSE	310	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/min C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cult(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
CSE	320	Design/Syn Digital Hardware	Design and synthesis of digital hardware with hardware description language, computer-aided design tools, and programmable devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineer BSE or Computer Science BS major; CSE 220 with C or better; CSE 230 or EEE 230 with C or better OR Visiting University Student
CSE	325	Embedded Microprocessor System	System-level programming and analysis of embedded microprocessors systems. Fundamental concepts of digital system design for embedded system applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 220 with C or better, CSE 230 or EEE 230 with C or better OR Visiting University Student
CSE	330	Operating Systems	Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, and file systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better OR CSE graduate student; Credit is allowed for only ACO 350 or CSE 330 OR Visiting University Student
CSE	335	Princ of Mobile App Dev	Covers topics pertaining to fundamental concepts of mobile application development principles including design patterns; data persistence; interfacing with services and devices; location and incorporation of existing frameworks; user interface and experience; context awareness; utilization of built-in tools for software profiling, testing, and version control; and security/privacy issues.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Informatics BS or Computer Systems Engineering BSE major; CSE 220 or 240 with C or better; Credit is allowed for only CSE 335 or CSE 394 (Principles of Mobile Application) OR Visiting University Student
CSE	340	Principles of Programming Lang	Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineer BSE or Computer Science BS major; CSE 310 with C or better; CSE 230 or EEE 230 with C or better OR CSE graduate student OR Visiting University Student
CSE	355	Intro Theoretical Computer Sci	Introduces formal language theory and automata, Turing machines, decidability/undecidability, recursive function theory, and complexity theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR CSE graduate student OR Visiting University Student
CSE	360	Intro to Software Engineering	Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Biomed Informat BS or Comp Sci BS or Dig Cult (Media Process) BA/BS or Geog Informat Sci BS or Comp Systems BSE or Engr Mgmt BSE major; CSE 220 or 240 w/ C or better OR Comp Sci or Software Engr grad stdnt OR Visiting University Student
CSE	365	Information Assurance	Concepts of information assurance (IA); basic IA techniques, policies, risk management, administration, legal and ethics issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 240, CIS 235, CIS 236, CSE 220, or CSE 240 with C or better OR Visiting University Student
CSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		

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CSE	408	Multimedia Information Systems	Design, use, and applications of multimedia systems. Introduces acquisition, compression, storage, retrieval, and presentation of data from different media such as images, text, voice, and alphanumeric.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Software Engineering BS major; SER 222 with a C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	412	Database Management	Introduces DBMS concepts. Data models and languages. Relational database theory. Database security/integrity and concurrency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s): Biomed Informs BS, Comp Sci BS, or Comp Syst Engr BSE mjr; CSE 310 w/ C or better OR Comp Sci & Engr or Software Engr grad stdnt; Credit is for only ACO 220 or ACO 320 or CSE 412 or IFT 433(or CST 433) or SER 322 OR Visiting University Student
CSE	414	Advanced Database Concepts	Object-oriented data modeling, advanced relational features, JDBC and Web access to databases, XML and databases, object-oriented databases, and object-relational databases.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 412 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	420	Computer Architecture I	Computer architecture. Performance versus cost tradeoffs. Instruction set design. Basic processor implementation and pipelining.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better; Credit is allowed for only CSE 420 or CSE 520 OR Visiting University Student
CSE	423	Systems Capstone Project I	Development process: specification, design, implementation, evaluation, and testing with economic, social, and safety considerations. Technical communication and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s) with C or better: Computer Systems Engineering BSE major; CSE 320; CSE 325; CSE 330; CSE 360; senior standing or postbaccalaureate student; Credit is allowed for only CPI 485 or CPI 486 or CSE 423 or CSE 485 or CSE 486
CSE	424	Systems Capstone Project II	Continuation of capstone project started in CSE 423.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Systems Engineering BSE major; CSE 423 with C or better; senior standing or postbaccalaureate
CSE	434	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Sci BS or Comp Syst Engr BSE major; CSE 230 or EEE 230 w/ C or better; CSE 310 w/ C or better OR Computer Science & Engr or Software Engr graduate student; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
CSE	438	Embedded Systems Programming	Development of embedded system software, I/O handlers, and multiple threaded programs. Scheduling algorithms. Embedded software structures. Real-time operating system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 325 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	440	Compiler Construction I	Introduces programming language implementation. Implementation strategies such as compilation, interpretation, and translation. Major compilation phases such as lexical analysis, semantic analysis, optimization, and code generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	445	Distributed Software Developmt	Distributed system architectures and design, service-oriented computing, and frameworks for development of distributed applications and software components.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 360 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CSE	446	Software Integration and Engr	Software development using architecture design, composition, workflow, services, data resources, data representations, data management, and development tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre- or corequisite(s): Computer Science BS or Computer Systems Engr BSE major; CSE 445 with C or better if completed OR Computer Science and Engr or Software Engr grad student; Credit allowed for only CSE 446 or 598 (Software Integration & Engineering)
CSE	450	Design&Analysis of Algorithms	Design and analysis of computer algorithms using analytical and empirical methods; complexity measures, design methodologies, and survey of important algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Engineering graduate student; Credit is allowed for only CSE 450 or CSE 551 OR Visiting University Student
CSE	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stdnt; Credit allowed for CSE 460/SER 460 OR Visiting University Student
CSE	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Ctr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grad st; Crdt only CSE 463 or SER 463 OR Visiting University Student
CSE	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/ C or better: Comp Sci or Comp Sys Engr mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stdnt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsm&Tstng) or SER 464 OR Visiting University Student
CSE	466	Computer Systems Security	Countermeasures to attacks to computer systems from miscreants (or hackers) and basic topics of cryptography and network security.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s)w/ C or better: Computer Sci BS or Computer Sys Engr BSE major; CSE 310; CSE 365 with C or better OR Software Engr BS major; CSE 365; SER 222 OR Computer Sci & Engr or Software Engr graduate student OR Visiting University Student
CSE	467	Data & Information Security	Basic concepts of security and privacy, data and database security, access controls, trust models, watermarking, and private information retrieval.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better; CSE 365 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	468	Computer Network Security	Practical network security exposure and hands-on experience about basic security concepts, case studies and useful tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) w/ C or better: Computer Science BS, Computer Systems Engineering BSE, or Software Engineering BS major; CSE 365; CSE 434 OR Computer Science, Computer Engineering, or Software Engineering graduate student OR Visiting University Student
CSE	469	Computer and Network Forensics	Identification, extraction, documentation, interpretation, and preservation of computer media for evidentiary purposes, file system forensics, and network forensics.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Sci BS or Computer Systems Engr BSE major; CSE 310 with C or better; CSE 365 with C or better OR Software Engr BS major; CSE 365 with C or better; SER 222 with C or better OR Computer Sci & Engr or Software Engr graduate student

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CSE	470	Computer Graphics	Introduces basic concepts of interactive computer graphics, realistic rendering, and 3-D viewing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Digital Culture (Media Processing) BA/BS, Comp Sci BS, Geog Info Science BS, Comp Sys Engr BSE, or Software Engr BS major; CSE 310 or SER 222 with C or better; MAT 342 or 343 OR Comp Sci and Engr or Software Engr graduate student
CSE	471	Intro Artificial Intelligence	State space search, heuristic search, games, knowledge representation techniques, expert systems, and automated reasoning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS, Geographic Information Science BS, or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	472	Social Media Mining	Network measures, social network analysis, network models, random graphs, small-world model, power laws, data mining, influence and homophily, information diffusion, epidemics, behavioral analysis, recommendation in social media, community detection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) with a C or better: Comp Scie BS or Comp Syst Engr BSE major; CSE 310; IEE 380; MAT 343 OR Comp Scie & Engr or Software Engr grad student; Credit is allowed for only CSE 472 or CSE 494 (Social Media Mining) OR Visiting University Student
CSE	475	Found of Machine Learning	Machine learning techniques: supervised learning, unsupervised learning, and neural networks and deep learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) with C or better: Comp Sci BS or Comp Sys Engr BSE, or Data Science BS major; CSE 310; DAT 300 or IEE 380; MAT 343; Credit is allowed for only CSE 475 or CSE 494 (Introduction to Machine Learning) OR Visiting University Student
CSE	476	Intro Natural Language Process	Principles of computational linguistics, formal syntax, and semantics, as applied to the design of software with natural (human) language I/O.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	477	Intro Computer-Aided Geom Desg	Introduces basic concepts of 3-D computer geometry, including curves, surfaces, meshes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; MAT 342 or 343 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): junior or senior standing
CSE	485	Computer Sci Capstone Proj I	First course in capstone sequence for computer science and informatics majors emphasizing development process, technical skills, teamwork, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s) with C or better: Computer Science BS major; CSE 330; CSE 340; CSE 355; CSE 360; senior standing or postbaccalaureate student OR Informatics BS major; CPI 350; CSE 463; Credit is allowed for only CPI 485 or CSE 423 or CSE 485
CSE	486	Computer Sci Capstone Proj II	Second course in capstone sequence for computer science and informatics majors continuing the development process, technical skills, teamwork and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Informatics BS major; CPI 485 or CSE 485 with C or better; senior standing or postbaccalaureate student; Credit is allowed for only CPI 486 or CSE 423 or CSE 486
CSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student

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CSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): CSE 310 with C or better OR Visiting University Student
CSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-3		
CSE	509	Digital Video Processing	Concepts of digital video compression, video analysis, video indexing, browsing and retrieval, video transmission over networks, video processors, and relevant industry standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	510	Database Mgmt Sys Implementn	Implementation of database systems. Data storage, indexing, querying, and retrieval. Query optimization and execution, concurrency control, and transaction management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	511	Data Processing at Scale	Delves into new frameworks for generating, processing and managing large-scale data-sets. More specifically, covers the following topics: core database concepts, distributed and parallel data systems, deploying and operating data systems in the cloud, NoSQL database systems, and big data tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student; Credit is allowed for only CSE 511 or CSE 512
CSE	512	Distributed Database Systems	Distributed database design, query processing, and transaction processing. Distributed database architectures and interoperability. Emerging technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student; Credit is allowed for only CSE 511 or CSE 512
CSE	515	Multimedia and Web Databases	Data models for multimedia and Web data; query processing and optimization for inexact retrieval; advanced indexing, clustering, and search techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	520	Computer Architecture II	Computer architecture description languages, computer arithmetic, memory-hierarchy design, parallel, vector, multiprocessors, and input/output.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Electrical Engineering, or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	522	Real-Time Embedded Systems	Development of real-time embedded systems, scheduling algorithms, embedded software structures, real-time operating system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, Master of Engineering, Engineering Science (Software Engineering) or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	530	Embed Operating Sys Internals	Investigating Linux source including: memory management, kernel synchronization and driver design topics. Designing, coding, testing, and evaluating embedded operating system software in a Linux environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	531	Distrib/Multiprocess Oper Sys	Distributed systems architecture, remote file access, message-based systems, object-based systems, client/server paradigms, distributed algorithms, replication and consistency, and multiprocessor operating systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	534	Advanced Computer Networks	Advanced network protocols and infrastructure, applications of high-performance networks to distributed systems, high-performance computing and multimedia domains, special features of networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	535	Mobile Computing	Mobile networking, mobile information access, adaptive applications, energy-aware systems, location-aware computing, mobile security and privacy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Robotics and Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR online Computer Science nondegree-seeking graduate student
CSE	536	Advanced Operating Systems	Protection and file systems. Communication, processes, synchronization, naming, fault tolerance, security, data replication, and coherence in distributed systems. Real-time systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student

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CSE	539	Applied Cryptography	Uses cryptography for secure protocols over networked systems, including signatures, certificates, timestamps, electrons, digital cash, and other multiparty coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	543	Info Assurance & Security	Comprehensive understanding of information assurance and security problems with the solutions as well as hands-on experiences about applying these solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student or Online Computer Science nondegree-seeking graduate student
CSE	545	Software Security	Theories and tools for software security, including secure design, threat analysis and modeling, security testing and coding.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	546	Cloud Computing	Virtualization, cloud computing, programmable networking, performance evaluation, information assurance, distributed and parallel computing, and cloud computing-based applications. Students must have a solid background in computer architecture, operating system and computer networking to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student; Credit is allowed for only CSE 546 or CSE 591 (Cloud Computing)
CSE	548	Adv Computer Network Security	Comprehensive understanding of network security and corresponding solutions, including cryptography, access control, secure Web transactions, e-mail security, and viruses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	550	Combinatorial Algorithms/Intr	Combinatorial algorithms, nondeterministic algorithms, classes P and NP, NP-hard and NP-complete problems, and intractability. Design techniques for fast combinatorial algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	551	Foundations of Algorithms	Advanced topics in formal algorithm design and analysis, including advanced shortest-paths algorithms, amortized analysis, network flows, NP-completeness and selected topics in computational geometry, distributed/parallel, randomized, and approximation algorithms.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Science, Comp Engineering, Robotics & Autonomous Systems (Artificial Intelligence), or Industrial Engineering graduate student OR Online Comp Science nondegree-seeking graduate student; Credit is allowed for only CSE 450 or CSE 551
CSE	552	Random&Approximation Algorithm	Introduces two important areas of algorithm design for graduate students. A randomized algorithm is allowed to rely on the outcome of a random experiment in deciding on its next step. In many applications, randomized algorithms are simpler than any deterministic algorithms known, but in several cases, they are in fact more powerful or more efficient than any deterministic algorithms. Covers basic paradigms for randomized algorithm design and analysis, as well as for derandomization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student; CSE 550 or 551 or 555 with B or better
CSE	555	Theory of Computation	Rigorous treatment of regular languages, context-free languages, Turing machines and decidability, reducibility, and other advanced topics in computability theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	556	Game Theory with Applications	Strategic conflict as matrix games, notions of equilibrium, definition and existence of Nash equilibrium, zero-sum games, extensive-form games, Bayes Nash equilibrium, potential games, routing games, algorithmic game theory, computation of Nash equilibrium, incentives and pricing in communication networks, application of game theory in wireless networks. Knowledge of calculus, discrete mathematics, probability theory and algorithms is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student; Credit is allowed for only CSE 556 or CSE 591 (Game Theory with Applications to Networks)
CSE	561	Modeling/Simulation Theory/App	Modeling theories, simulation protocols, object-oriented modeling, model design, simulation analysis, network-based systems, discrete-event modeling, continuous modeling, hybrid modeling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	563	Software Requirements and Spec	Examines the definitional stage of software development; analysis of specification representations, formal methods, and techniques emphasizing important application issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student

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CSE	564	Software Design	Examines software design issues and techniques. Includes a survey of design representations and a comparison of design methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student
CSE	565	Software Verif/Validation/Test	Test planning, requirements-based and code-based testing techniques, tools, reliability models, and statistical testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student or Online CS nondegree-seeking graduate student
CSE	566	Software Proj/Process/Qual Mgt	Project management, risk management, configuration management, quality management, and simulated project management experiences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	569	Fundamentals of Stat. Learning	Concepts of statistical pattern recognition, Bayesian decision theory, parameter estimation, discriminant analysis, basics of artificial neural networks, basics of data clustering. Knowledge of college-level calculus, linear algebra, basic probability theory and proficiency in computer programming is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science or Industrial Engineering graduate student
CSE	570	Advanced Computer Graphics I	3D shape analysis techniques: half-edge data structure, polygon mesh processing, fast marching method, iterative closest point algorithms, heat kernel and spectral analysis, isometric embedding.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	571	Artificial Intelligence	Definitions of intelligence, computer problem solving, game playing, pattern recognition, theorem proving, and semantic information processing; evolutionary systems; heuristic programming.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Software Engineering, or Robotics and Autonomous Systems (Artificial Intelligence) graduate student or Online Computer Science nondegree-seeking graduate student
CSE	572	Data Mining	Advanced data mining techniques: classification, clustering, association, preprocessing; performance evaluation; information assurance, Web mining, security and privacy issues, and other applications. Students must have a solid background in database management systems, search, learning, and statistics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Software Engineering or Industrial Engineering graduate student OR Online CS nondegree-seeking graduate student
CSE	573	Semantic Web Mining	Data mining techniques for structuring and organizing unstructured sources such as text and Web data into meaningful machine-processable information; computational aspects of information extraction and data linkage; discovery and prediction tasks where text serves as data such as detecting events, measuring public opinion and making recommendations. A background in databases, algorithms and theory of computation is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate standing in Computer Engineering or Computer Science; Credit is allowed for only CSE 573 or CSE 591 (Semantic Web Mining)
CSE	574	Planning/Learning Methods AI	Reasoning about time and action, plan synthesis and execution, improving planning performance, applications to manufacturing intelligent agents.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	575	Statistical Machine Learning	Spectral clustering, regression, classification, semi-supervised learning, feature reduction, manifold learning, ranking, kernel learning and multitask learning.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, Robotics & Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	576	Topics/Natural Language Proc	Comparative parsing strategies, scoping and reference problems, nonfirst-order logical semantic representations, and discourse structure.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	577	Advanced Geometric Modeling I	Advanced concepts of geometric modeling: rectangular and triangular surfaces, triangle meshes, Voronoi diagrams, discrete and continuous shape measures, volumes and volume visualization. Students must have a solid background in linear algebra, calculus, and basic 3D graphics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student

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CSE	578	Data Visualization	Amidst the information flood in which we are currently immersed, visualizations can be a well-placed treetop. The rise of big data has the potential to inform decisions, and visual representations can play a crucial intermediate role in our daily information consumption. Covers techniques and algorithms for creating effective visualizations based on principles from graphic design, visual art, perceptual psychology and cognitive science to enhance the understanding of complex data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Industrial Engineering, Robotics and Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR online Computer Science nondegree-seeking graduate student
CSE	579	Knowledge Representation	Covers knowledge representation and reasoning algorithms in artificial intelligence, shows how they can be used in practice, and provides an overview of current research trends.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student or Online CS nondegree-seeking graduate student
CSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Science, Computer Engineering, Robotics and Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): Computer Science, Computer Engineering, Robotics and Autonomous Systems (Artificial Intelligence) graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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CSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CSM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
CSM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
CSM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CSM	305	Sports Fac Operations & Mgmt	Overview of the management and operations of sports facilities.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210 with C or better; MAT 142 or higher; minimum 2.50 cumulative GPA; minimum 45 hours
CSM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
CSM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
CSM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CSM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student
CSM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CSM	407	Ethics/Legal Issues in Sports	Comprehensive look at ethical decision making from many perspectives in the sports environment. Presents legal issues as they relate to history, present society and future trends.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 201 OR Visiting University Student
CSM	453	Inclusive and Adaptive Sports	Provides an overview of adaptive community recreation, the importance of inclusion in the recreational field and how to facilitate programs in this growing field.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or CSM 494 (Inclusive and Adaptive Sports and Recreation) or PRM 453 or PRM 494 (Inclusive and Adaptive Sports and Recreation) OR Visiting University Student
CSM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s) with C or better: CRD 403 or PRM 413; CSM 402 or NLM 402 or PRM 402 or TDM 402. Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463

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CSM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student
CSM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CSM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
CSM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
DAT	250	Data Science and Society	Examines quantitative literacy from a data and evidence driven perspective. Looks at the literature behind vaccines, climate, and other contentious topics where there is a wealth of scientific literature and yet these areas are still hotly debated. Investigates ways in which data science is abused; how to mislead with statistics, and how these problems have created a lack of trust in science. Through class discussions, case studies and exercises, students learn the basics of ethical thinking in science, understand the history of ethical dilemmas in scientific work, and study the distinct challenges associated with ethics in modern data science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 117, 119, 142, 170, 171, 265, or 270 with C or better OR Visiting University Student
DAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	300	Math Tools for Data Science	Covers the core mathematical topics that underpin data science as well as the key algorithms used for modern data analysis and how to implement them in Python.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 300 or STP 494 (Mathematical Tools for Data Science) OR Visiting University Student
DAT	301	Exploring Data in R and Python	Focuses on the exploration of the types of data typically encountered in modern data science, such as text data, spatial data, and time series data. Uses various statistical techniques to gain insight into the structure of the data, including graphical visualization, linear regression, trees and clustering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 301 or STP (Exploring Data in R and Python) OR Visiting University Student
DAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	401	Stat Model Inference Data Sci	Covers the basic statistical concepts underlying data science as well as some of the major methods. Includes fundamental ideas such as the key idea in predictive modeling is the bias-variance tradeoff, and cross validation is the basic approach for dealing with the bias-variance tradeoff. Statistical inference underlies much of data science methodology. Includes Bayesian and frequentist approaches to inference and how they are used in some of key ideas and methods in data science such as causal inference with observational data. Covers some key methods such as K nearest neighbors, naive Bayes classification, A/B testing, linear models, Gaussian processes and data reduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): DAT 301 with C or better; Credit is allowed for DAT 401 or STP 494 (Statistical Modeling and Inference for Data Sci) OR Visiting University Student
DAT	402	Statistical Learning	Concerns the key modern approaches for uncovering high-dimensional complex structure in data. Topics include regularized regression, ensemble methods with trees, deep neural nets, clustering and dimension reduction and state space modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): DAT 401 with C or better; Credit is allowed for only DAT 402 or STP 494 (Machine Learning / Statistical Learning) or STP 598 (Machine Learning / Statistical Learning) OR Visiting University Student
DAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
DAT	490	Data Science Capstone	Capstone allows students to build a culminating experience that reflects the breadth and depth of their data science experience and allows each student to explore a research area, interest, theme or question within the realm of data science. Develops final written projects in small groups based on consultation either directly within data science or within their concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2-4	L	Prerequisite(s): DAT 401 with C or better; ENG 101, 105, or 107 with C or better

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DAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
DBA	701	MacroECN Policy in Global Envi	Provides the framework for policy makers when facing macroeconomic situations, the tools in analyzing the costs and benefits of alternative policy options, and the knowledge necessary for making recommendations to policy makers and business leaders. Students learn knowledge and skills about global economy and risks that help facilitate dissertation research.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	702	Glob FIN Sys Mkt & Institution	Examines the overall architecture of the global financial system, its major components, and their functions in the macro economy.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	703	Glob FIN Sys Institute Invest	A large fraction of investors around the world invest in securities markets indirectly, viz. through mutual funds or separate accounts established with investment managers, whether they be endowments, foundations, pension plans or sovereign funds. Exposes students to the global marketplace for such portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	704	Des KBs Org Performance & Inno	Covers various issues on executive compensation and management pay structure with a particular emphasis on aligning business strategy, organization design to the choice of performance standards and pay structure for managers.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	705	Global Corporate Strategy	Demonstrates that decisions affecting the international expansion of a firm are neither obvious nor totally determined by the technological or economic forces generally associated with globalization. Addresses the most transcendental decisions that multinational firms face in the course of conducting business across borders.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	706	Strategic Visioning Leadership	Addresses the interrelationship among organizational culture, leadership, and the management of change in order to promote continuous improvement of the organization's market position. Addresses the role of strategy, how strategy explicates vision, and how effective strategies are created.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	707	Risk Management	Provides an understanding of the broad set of risks an enterprise faces; their origin, characteristics and potential impact on business; and how they can be efficiently managed at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	708	Corporate FIN and Governance	Helps students understand the link between finance and corporate strategies, as well as examine ways to establish and reform the practices of corporate governance in China.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	709	Finance and Law	Helps students learn about the philosophy of law, various legal systems, the relationships among law and economics and finance, the practice of law in a global context.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	710	Financial Decision Making	Provides a framework of conceptual knowledge and enables students to understand what the literature on financial theory is trying to do and how it all fits together. Also provides an in-depth experience with the subject of finance and equips students for their future development as a practicing executive.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	711	Financial Innovations	Focuses on how financial innovations influence the evolution of finance. Discusses many of the major financial innovations in recent history, the forces driving these innovations, their impact on the financial system and the real economy and the risks they bring.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	712	Econ & Finance Domestic Module	Addresses many critical topics facing China today on its quest of globalization, the need for transforming its economic structure, capital markets and corporate control, and its monetary policies.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student

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DBA	713	Adv Topics in Strategy Mgt Dom	Reexamines many popular best practices through panel discussion and speaker series on why some of those practices failed to work in China, and how firms have creatively modified their strategic undertakings to fit its environment.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	714	Current Trends U.S. Module	Provides first-hand experiences on the world class practices by the multinationals and interactions with the leading experts on the emerging topics of interest on globalization, financial regulations, and managerial innovations.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	715	Current Trends Europe Module	Provides direct exposure to European markets, firms, and institutions, their history, current status, and future directions.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	721	Seminar: Research in Action I	Provides needed skills for research and thesis work. 1. Focuses mainly on research design and fundamental statistical/survey and field study methods. The key objective is to provide students with the needed required skills and concepts of the scientific method, the philosophy of science, and research design with an emphasis to solve specific problems. This course is spread out during the first year of the program.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	722	Seminar: Research in Action II	Focuses on the process of research "in actions" through faculty presentation and research workshops. Faculty with diverse research interest and methodologies present up-to-date research works. Through interaction, students gain first-hand experience on learning the process of how faculty, with diverse research interests, are able to identify specific research topic, choosing the right research methodology to address their research questions. The presentation and research workshop are scheduled at the beginning of the second year and throughout the entire year, allowing the program to leverage faculty availability during their course delivery while enabling students to seek out their faculty mentors for future dissertation engagement.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	723	Seminar:Research in Action III	Provides students with opportunities to present their own research proposal/ thesis ideas while allowing the participating faculty and fellow students to offer constructive comments.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DBA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	100	Introduction to Dance	Overview of dance as a cultural and performative practice, exploring history and theory, philosophy, and movement practices, with reference to key pioneers in the field from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	110	Argentine Tango I	Introduces basic movement elements, explores various contexts shaping Argentine Tango, and emphasizes social tango with exposure to vals and milonga timing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	111	Belly Dancing I	Familiarize students with the ancient art of Middle Eastern dance. Covers posture, styling, basic body isolations, rhythm patterns, footwork, as well as the social significance and history of the dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	112	Capoeira I	Introduces the Afro-Brazilian martial art and movement form capoeira. Molds elements of self-defense, dance, music, song, language, culture and philosophy into the course.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	113	Dances of Africa I	Introduces basic elements of West and Central African dance styles, including the traditional rhythms and cultural context.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	114	Dances of India I	Introduces Indian folk dances with an emphasis on the history and various movement elements of an ancient South Indian classical dance form, known as Bharata Natyam.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	115	Yoga I	Introduces a basic physical and philosophical understanding of yoga. Designed by a certified Yoga instructor.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	116	Tai Chi Chuan I	Introduces an ancient Chinese internal martial art form. The structure includes the beginner level of Tai Chi Chuan theory and movement practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	117	Feldenkrais I	The Feldenkrais method is an approach to enhance awareness of the body, improve functional actions, and expand one's repertoire of movements.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	118	Yoga/Pilates	Provides a basic physical and philosophical understanding of yoga and Pilates mat practices.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		

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DCE	120	Modern Dance I	Introduces modern dance and its basic principles, including alignment, core muscular strength, and spatial exploration.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	121	Ballet I	Introduces principles of ballet and development of basic technical skills, including dynamic alignment, functional rotation, and musicality.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	122	Jazz I	Provides students with beginning-level technique class in different jazz styles. Focuses on alignment, technique, and performance skills.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	123	Nonmajors Hip Hop I	Equips student with understanding of hip hop dance history, culture and music through studio work on various hip hop dance styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	124	Latin/Swing/Ballroom I	Introduces major Latin and ballroom dances and focuses on a system of elements that are found in all partnership dances, including movement components, rhythmic patterns, dance positions, and unique characteristics used to better define each dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	125	Latin/Salsa I	Introduces Latin dancing. Instruction focuses on salsa, cha-cha, merengue, and rumba.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	126	Country-Western	Initiates the student into the rhythm two-step, progressive two-step, night club two-step, country cha-cha, country waltz, triple swing and a multitude of line dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	130	First-Year Movement Pract I	Introduces diverse somatic movement principles and practices through exploration of movement, context, theory, and personal reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major OR Visiting University Student
DCE	131	First-Year Movement Practi II	Modular structure enables a series of short intensive studies including movement, context, theory, and personal reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 130 with C or better
DCE	132	Dance Techniques	Introduces the movement vocabularies or steps, aesthetics and practices of the dance styles currently offered in the Bachelor of Fine Arts dance degree programs. Includes equal emphasis on the dance styles presented in class, which may include contemporary ballet, postmodern contemporary dance, salsa, urban movement practices and others. Emphasizes physical practice; expects students to engage creatively, reflect on their learning and demonstrate critical thinking in all class sessions.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance or Dance Education BFA major
DCE	133	Hip Hop I	Designed as an introduction to dance, history, culture and music in hip hop.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major, Performance & Movement BA, BIS Dance concentration or Dance minor OR Visiting University Student
DCE	134	Postmodern Contemporary I	Introduces postmodern contemporary dance technique and theory. Designed to enhance the dancer's technical and artistic proficiency by using movement that is athletically challenging, nuanced, and rhythmically complex.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	135	Contemporary Ballet I	Introduces contemporary view of ballet technique and theory with attention to enhancing student's dynamic alignment.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	136	Somatic Practices I	Survey course offers a practical and theoretical introduction to some of the major somatic practices evolving out of the 20th century. Guest practitioners and teachers of various embodied practices share theory, practice and context. Explores movement and the integration of the body and mind through a variety of somatic lenses (e.g., the Alexander Technique, Authentic Movement, and experiential anatomy).	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DCE 136 or DCE 194 (Intro Movemnt Language Sources) OR Visiting University Student
DCE	137	African&Diaspora Mvt Pract I	Foundational course in the African and the Diaspora movement practices curriculum.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Dance BFA, BIS-Dance concentration or Dance minor; Credit is allowed for only DCE 137, 194 (Mvt Practice: Africa/Diaspora), 294 (Mvt Practice: Africa/Diaspora) or 494 (African & Diaspora Mvt Prac)
DCE	139	Afro-Latin Movement Pract I	Beginning-level course in Afro-Latin dance practices introduces the culture, movement rhythms and historical dialogue associated with various forms of Afro-Latin social dance practices, specifically salsa and mambo. Progressively teaches basic fundamentals in footwork and partner work, along with understanding timing and connection with Afro-Latin social music throughout the semester in class and in social events. By learning the movement fundamentals and applying them through social dancing, students not only succeed in the course, but also evolve in becoming a knowledgeable and participative social dancer within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DCE 139 or DCE 194 (Salsa I)

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DCE	160	First-Yr Creative Practices I	Explores creativity and creative processes with reference to some key historical practices and influential artists. Seeks to encourage and develop students' awareness of their own imagination and creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	161	First-Yr Creative Practices II	Explores creativity and creative processes with reference to some key historical practices and influential artists. Encourage and develops students' awareness of their own imagination and creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 160 with C or better
DCE	170	First-Year Seminar I	Orientation to the university learning environment and profession of dance with emphasis on developing tools and processes for reflection and critical thinking.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance BFA or Performance and Movement BA major OR Visiting University Student
DCE	171	First-Year Seminar II	Continuation of First-Year Seminar I. Focuses on orientation to the larger field of contemporary dance practice with an emphasis on developing tools and processes for reflection, synthesis, and critical thinking. Requires participation in School of Dance "Dance Matters."	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major
DCE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	201	Dance, Culture&Global Contexts	Introduces the study of dance as culture in diverse global contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	202	Dance in U.S. Popular Culture	Investigates vital cultural heritages that have shaped dance in U.S. American popular culture from 20th century to the present. Emphasizes dance as a producer of social space and cultural identity as well as a reflection of diverse social realities and dynamics of power. Following required reading and videos, the course surveys time periods of dance from the late 1800s through the 20th century to the present day.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Credit is allowed for only DCE 202 or 294 (Dance in US Popular Culture)
DCE	203	The Walking Body	Addresses walking as a key component in movement studies and further brings the study of bodily movements center stage as a means to address the dynamic between self and society. Designed for nonmajors. Not eligible for majors credit.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Pre- or corequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
DCE	205	How Dance Matters	Introduces observing, discussing and analyzing dance through a contemporary sociocultural lens. Introduces the contemporary contexts of the dance forms currently offered in the BFA dance programs, including contemporary ballet, postmodern contemporary, salsa and urban movement practices as well as others. By examining where and when the dance occurs, who participates and how, and why dance matters across each of these forms, students gain a deeper understanding of what makes each dance form unique, the elements of each form that overlap with others, and how dance can both ignite and reflect cultural change. Additionally, students learn to write about dance in a way that recognizes and describes key values and attributes of each dance form and articulately uses description, interpretation and evaluation to create informed perspectives of dance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Pre- or corequisite(s): ENG 101 with C or better if completed
DCE	210	Argentine Tango II	Builds upon concepts, figures, and elements of the Argetine Tango introduced in level one.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 110 or DAN/DCE 194 (Argentine Tango I)
DCE	211	Belly Dancing II	Focuses on refining beginning technique, advanced movements, layering and musical interpretation. Uses choreography and improvisation to encourage mind-body awareness.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 111 OR Visiting University Student
DCE	216	T'ai Chi Ch'uan II	Intermediate-level study of the ancient Chinese martial art of rounded, fluid, balanced movements. Teaches the sets of long form Yang style of Tai Chi Ch'uan in a slow and relaxed manner.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 116 or DAN 194 (T'ai Chi Ch'uan I) OR Visiting University Student
DCE	220	Modern Dance II	Explores modern dance practices, including somatic techniques, stylistic versatility, and performance skills.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DAN 130 (Modern II) or DCE 220
DCE	221	Ballet II	Explores contemporary and classical ballet practices, focusing on whole body integration and performance strategies.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	222	Jazz II	Explores intermediate level of jazz dance techniques.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 122 or DAN 130 (Jazz I)
DCE	223	Nonmajors Hip Hop II	Intermediate-level class that provides the knowledge of hip hop dance history, culture and music through studio work on various hip hop dance styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 123 OR Visiting University Student

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DCE	224	Latin/Swing/Ballroom II	Continues development of level one Latin/Swing/Ballroom dances to prepare student to have command of the complex rhythmic patterns and figures used in major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 124 or DAN 194 (Latin/Swing/Ballroom I) OR Visiting University Student
DCE	225	Latin/Salsa II	Reviews and reinforces the basics introduced in Latin/Salsa I and builds upon more complicated concepts and figures.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 125 or DAN 194 (Latin/Salsa I) OR Visiting University Student
DCE	226	Music & Kinesthetic Comm Dance	Brings basic principles of rhythmic awareness and theory to life through movement and breath. Develops listening skills to "hear" movement and to "see" sound, providing a foundation of skills and knowledge to perform and aurally recognize beat patterns, subdivisions, grooves, textural and qualitative subtleties in different styles. Practical application of concepts and abilities for teaching dance musically--connecting to students' personal movement practice, somatic and pedagogy classes as well as linking rhythmic theory concepts with aural and kinesthetic listening skills and life.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Corequisite(s): DCE 124, 133, 134, 135, 136, 139, 224, 233, 234, 235, 236, 239, 324, 333, 334, 335, 336, or 339 OR Visiting University Student
DCE	230	2nd-Yr Movement Practices I	Investigates selected movement forms in the second-year movement practices. New movement forms include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance majors; DCE 131 with C or better OR Visiting University Student
DCE	231	2nd-Yr Movement Practices II	This course is set up in two modules. In module one, students will investigate a movement form, include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork. Module two expands the practice of rhythmic awareness through exploration and investigation of the close relation between thought and act, the kinesthetic and the verbal, the text and the beat, as well as the breath and the word.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 230 with C or better
DCE	233	Hip Hop II	A practical and theoretical investigation of hip hop dances and dance styles developed over recent years around the world.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 133 with B+ or better OR Visiting University Student
DCE	234	Postmodern Contemporary II	Investigation and practices of postmodern contemporary dance technique. Development of movement quality and performance skills.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Performance and Movement BA or Dance BFA major; DCE 134 with C or better OR Visiting University Student
DCE	235	Contemporary Ballet II	Explores the possibilities of contemporary ballet technique and theory with awareness of student's individual anatomical differences.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Performance and Movement BA or Dance BFA major; DCE 135 with C or better OR Visiting University Student
DCE	236	Somatic Practices II	Laboratory for somatic education that explores the foundations of movement, voice, expression and spatial awareness. Open to nonmajors, the class welcomes and encourages the participation of students from a wide variety of disciplines. Taught through the principles of specific somatic lenses (e.g., the Alexander Technique, Bartenieff Fundamentals, and Body Mind Centering), the course highlights how embodied awareness affects artistic process and choice making, as well as enhancing physical capacities, kinesthetic intelligence, and the refinement of performance and technical skills. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	239	Afro-Latin Movement Pract II	Beginner/intermediate-level course designed and structured to build upon students who have completed Afro-Latin dance practices with the movement, historical context, culture and rhythms associated with Afro-Latin movement dance. Framework of movement involves reviewing beginner, then covers intermediate fundamentals in footwork and partner work that is learned in salsa technique progression modules. Along with progression modules, addresses through online readings and documentaries the history and social significance of Afro-Latin movement practices, such as salsa on2, cha cha and bachata. Through learning intermediate fundamentals and applying them through social dancing, students succeed and evolve in becoming knowledgeable and proficient social dancers within the salsa community. Expects students to not only have fun, but to integrate their learning within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 139 OR Visiting University Student

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DCE	240	Media for Dance	Computer applications for human movement modeling, digital video design and creation, sound composition, and the incorporation of multimedia design elements into online environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
DCE	260	2nd-Yr Creative Practices I	Explores concepts introduced in the first year of creative practice and further expands into the themes of analysis and investigation. Year two experience involves the investigation of learning to compose and construct choreographic material through individual, collaborative, improvisational, and group exploration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 161 with C or better OR Visiting University Student
DCE	261	2nd-Yr Creative Practices II	Continues developing students' awareness of their own creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 260 with C or better
DCE	262	Rhythmic Theory for Dance I	Elements of music, music structures, and their relationship to dance. Emphasis on rhythmic analysis and dance accompaniment.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: BA Performance and Movement or BFA Dance major
DCE	270	Second-Year Seminar I	Continues developing tools and processes for reflection and critical thinking by identifying individual goals and objectives related to the students' current and future academic and professional careers.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 171 OR Visiting University Student
DCE	271	Second-Year Seminar II	Provides basic understanding of costume design, sound production, and interactive performance for dance.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 270 with C or better
DCE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	300	Moving Histories	In-depth study of the history of Western dance in Europe and America. Students learn about various ways of conducting research into dance history, including interviewing, researching using primary resources and performing scholarship.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 101, 105 or 107 with C or better
DCE	301	Meaning in Motion	Critical inquiry into the nature of dance through the lens of dance theory. Covers philosophical and theoretical issues raised by the study of dance in relation to specific historical and global contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better OR Visiting University Student
DCE	302	History of American Hip Hop	The histories of hip hop dance are multilayered and multifaceted. There is not a singular history of hip hop dance, yet multiple entry points with multiple pathways of understanding to unpack the turbulent and linked histories of historically disenfranchised communities within the context of post-Civil Rights era United States. Designed as a seminar experience and operates from the assumption that hip hop dance is an extension of African diasporic traditions colliding with multiculturalism and youth culture. Serves as a portal to some of the histories, perspectives, individuals and stories that help shape the forms of hip hop dance expressed throughout this course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
DCE	303	The Body Condition(ed)	Examines contemporary practices of conditioning the body from a triangulation of perspectives: physical, social, and experiential. Enhances the ability to obtain a holistic understanding of how the self/social dynamic operates within the context of body conditioning. Designed for Non-Majors. Not Eligible for Dance Major Requirements.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	SB	Pre- or Corequisite(s): ENG 102, 105, or 108 OR Visiting University Student
DCE	306	History of Salsa: Afro-Latin	For students who are curious about salsa dancing and music, and who have interest in learning about its timeline and origins. Salsa is a migrational phenomenon, and the course traces the journey of multiple timelines that intersect with the global industry it has become today. Course theme revolves around the concept of salsa hybridity and the migrational dance that continues to evolve based on the interexchange of music and dance as it represents Afro-Latinness in the community. Content focuses on tracing the pathways of salsa and its origins from a dance and music perspective. Content also includes chronological investigative critique on performance from salsa congresses and festivals, and social dance videos from various video platforms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
DCE	324	Latin/Swing/Balroom III	Refines dances learned in the intermediate level of Latin and ballroom dances, including foxtrot, waltz, salsa, cha cha, rumba, samba, west coast swing, bolero, tango, and swing. Prepares students to have a more advanced command of the complex rhythms and figures used in the major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 224 or DAN 294 (Latin/Swing/Balroom II) OR Visiting University Student

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DCE	330	3rd-Yr Movement Practices I	Focuses on the application of diverse movement forms and somatic studies in a range of performance contexts. These contexts may include live and mediated performance, community-based projects, pedagogy, analysis of movement forms in relation to musical compositions or the creation of new movement languages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major; DCE 231 OR Visiting University Student
DCE	331	3rd-Yr Movement Practices II	Student will focus on the integration of diverse movement forms and somatic practices, as well as developing an in-depth understanding of a range of performance contexts practically and theoretically.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 330 with C or better
DCE	333	Hip Hop III	A practical and theoretical integration of the hip hop dance styles that have been investigated and practiced in the hip hop curriculum.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): DCE 233 with B+ or better OR Visiting University Student
DCE	334	Postmodern Contemporary III	Integrates dance theory and practices of postmodern contemporary dance technique. Refines movement quality and performance skills.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance and Movement BA or Dance BFA major; DCE 234 with C or better OR Visiting University Student
DCE	335	Contemporary Ballet III	Expansion of student's technical skills and theoretical knowledge through utilization of a hybridized ballet movement vocabulary.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	336	Somatic Practices III	Laboratory for somatic education that explores the foundations of movement, voice, expression and spatial awareness. Open to nonmajors, the class welcomes and encourages the participation of students from a wide variety of disciplines. Taught through the principles of specific somatic lenses (e.g., the Alexander Technique, Bartenieff Fundamentals, and Body Mind Centering), the course highlights how embodied awareness affects artistic process and choice making, as well as enhancing physical capacities, kinesthetic intelligence, and the refinement of performance and technical skills. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours
DCE	338	Hip Hop Ensemble	Focuses on building a cooperative practice among artists. The ensemble of dancers and musicians explore the connections between hip hop musical praxis and hip hop dance in a live, improvisatory setting. Places special emphasis on hybridization, or the blending of musical and gestic traits from two or more genres. Expects participants to experiment in a cross-disciplinary manner throughout the semester. Course serves as an 'experiment lab' for students enrolled in DCE 333 as well as other music and dance students.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours; Corequisite(s): DCE 333 OR Visiting University Student
DCE	339	Afro-Latin Movement Pract III	Advanced course brings an interdisciplinary approach toward performance, competitive and social partner movement that incorporates multiple contextual and Afro-Latin dance style perspectives to inform and critique one's own dance understandings. Provides a learning environment to investigate performance elements/theories and how they relate or contrast within the following dance styles: Afro-Latin Social which include NY Mambo, Cha Cha and Bachata.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum two completions: DCE 124, DCE 139, DCE 224, DCE 239, or DCE 324; Credit is allowed for only DCE 339 or DCE 394 (Afro-Latin Movement Practices III) or DCE 394 (Salsa III) OR Visiting University Student
DCE	350	Classroom Learning Through MVT	Explores theories of learning, thought development, and knowledge construction through aesthetic movement experiences. Students look to theories from the fields of aesthetics, phenomenology (study of lived experiences), somatics (study of the soma or body/mind), sociology and epistemology (theory of knowledge) to understand how the intertwined relationship of human thought development and movement patterning can affect children's learning and development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
DCE	354	Creative Approach Tchng Dan 1	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA major
DCE	356	Creative Approach Tchng Dan 2	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student OR Visiting University Student
DCE	360	Third-Yr Creative Practices I	Provides an orientation to the field of community dance practice. Students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student; DCE 261 with C or better OR Visiting University Student

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DCE	361	3rd-Yr Creative Practices II	Historical survey of music and compositional elements relative to dance. Emphasis on analysis of choreography from a musical standpoint.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite(s): Dance major; DCE 360 with C or better
DCE	370	Third-Year Seminar I	Provides an orientation to the field of community dance practice. Over two consecutive semesters, students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 271 with a Y
DCE	371	Third-Year Seminar II	Hones skills in collaborative approaches, teaching, leading, and facilitation through partnerships with community organizations in the Phoenix metropolitan area. Students study community dance practices covering a range of creative process and community building tools that can be used in diverse settings. Applies research methods, such as data collection, analysis, and reflection, to measure the efficacy of community arts practices.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 370 with a Y.
DCE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	402	Ethnography of Dance Practices	Examines the field of ethnochoreology, ethnographic methods, and interpretive research practices. Develops critical writing, thinking, and viewing skills for comparative dance study.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): DCE 201 with C or better; ENG 102, 105, or 108 with C or better
DCE	403	Making. Living. Thriving Arts	This specialized course looks at how creative practices and research revitalize one another and how artists continue to sustain themselves by bringing imaginative responses to 21st-century living. This course grew out of a wish to share the diversity of approaches in the current dance curriculum at ASU. In this open forum setting, we may develop a vibrant community moving toward visionary, yet realistic ideals in the arts, experiential learning and how we creatively contribute and support ourselves in the world. Emphasizes arts making practices and being self-supporting with one's creative work. Throughout the class, various artist/scholars share their creative research work and how they sustain a life in the arts. Among others, their perspectives may include a variety of intersections such as social issues in health/wellness, equity and justice, entrepreneurial thinking, technology and social engagement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Herberger major or minor; minimum 60 hours
DCE	404	Dance and Ethics	Examines ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing
DCE	405	Writing the Creating Body	Addresses creative practice from the perspective of the embodied creative artist. Embodiment is theorized using a conflation of interdisciplinary concepts to analyze the complex and fluid nexus that occurs as the artist creates. Students theorize the creative artist as a rhetor and the creative practice as a rhetorical situation to understand the deconstructive interaction of the creative act. Explores ways to utilize this new theorization of embodiment for interdisciplinary research into creative practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only DCE 405 or DCE 505 OR Visiting University Student
DCE	435	Contemporary Ballet IV	Focuses on the students' individual application of contemporary ballet technique at an advanced level. Expects students to have an advanced, embodied understanding. Draws on a variety of traditional, codified and contemporary approaches to ballet as well as somatic techniques to enhance students' ballet proficiency through performing movement that is athletically challenging, nuanced and rhythmically complex. Emphasizes musicality and artistry throughout class. Engages students in critical thinking and reflection in relationship to their dancing and dance learning. Additionally, students engage with class concepts creatively through improvisation and composition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 335 with C or better

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DCE	438	Dance Theatre Performance/Prod	Performance or technical theatre work in designated dance productions. 3 hours a week per semester hour.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Performance and Movement BA, Dance minor, or BIS Dance concentration OR Visiting University Student
DCE	439	Afro-Latin Movement Pract IV	Focuses on the students' individual application of Afro-Latin salsa/mambo technique at an advanced level. Specific to undergraduate students who have completed previous coursework and are ready to focus on individual research, investigation and critique in Afro-Latin movement practices. With an expected advanced understanding of Afro-Latin rhythms and social partnerwork vocabulary, students synthesize past knowledge in previous courses and begin framing questions on areas of expertise to work in an Afro-Latin centric process that leads toward a finding, performance or finished/unfinished work.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 239 with C or better; two completions of DCE 339 with C or better OR Visiting University Student
DCE	460	Transition Project I	Original choreography for group performance with analysis and critique of problems encountered in production.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 361 with C or better OR Visiting University Student
DCE	461	Transition Project II	Original research that integrates dance and a related field of interest. Includes production of written document and public presentation. Fall semester must be completed before spring registration. May be repeated for a total of 4 semester hours.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 460 with C or better
DCE	470	Fourth-Year Seminar	Explores and investigates the larger world of dance as it pertains to transitioning out of the university environment into professional lives. Discussion revolves around career opportunities, options and finding potential work synergies that will parlay into meaningful and exciting lives.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: BFA Dance major; DCE 371; Credit is allowed for only DCE 470 or 494 (4th-Yr Seminar)
DCE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
DCE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
DCE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student
DCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
DCE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	501	Philosophy of Dance	Analyzes traditional and contemporary theories of dance with regard to issues of expression, form, and meaning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	502	Cultural Concepts of Dance	Examines the close connections among culture, dance, and movement through writings in cultural theory, dance ethnology, and philosophy.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	504	Dance and Ethics	Examination of ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	505	Writing the Creating Body	Addresses creative practice from the perspective of the embodied creative artist. Embodiment is theorized using a conflation of interdisciplinary concepts to analyze the complex and fluid nexus that occurs as the artist creates. Students theorize the creative artist as a rhetor and the creative practice as a rhetorical situation to understand the deconstructive interaction of the creative act. Explores ways to utilize this new theorization of embodiment for interdisciplinary research into creative practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student; Credit is allowed for only DCE 405 or DCE 505

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DCE	530	Grad Mvt Practices I	The four-semester sequence of graduate movement practices are a sequence of graduate-level movement studies experiences designed to emphasize in-depth psychophysical explorations of specific somatic movement practices and frameworks as well as epistemological frameworks for learning in and through the body. Addresses the integrated practices and theoretical underpinnings of Laban/Bartenieff praxis, Body Mind Centering and other somatic practices that are explored within the four-course sequence that facilitate movement exploration, movement functioning, movement performance and movement creation as well as performance and social theory constructs.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: MFA Dance student
DCE	531	Graduate Movement Practices II	The series of graduate movement practices courses are a sequence of two graduate-level movement studies experiences designed to emphasize in-depth psychophysical explorations of specific somatic movement practices and frameworks as well as epistemological frameworks for learning in and through the body. Classroom experiences are approached from theoretically grounded and contextualized perspectives that address through practice current somatic and epistemological thinking. The overarching frameworks for the first and fourth modules are designed as "bookends" for introducing, contextualizing, and synthesizing classroom experiences and concepts explored within the two-course sequence.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: MFA Dance student
DCE	534	Postmodern Contemporary	Preparation in the performance and comprehension of professional-level modern dance for first-year graduate students. 6 hours weekly.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Dance Graduate student
DCE	535	Contemporary Ballet	Graduate-level theoretical study and movement practice of contemporary ballet for contemporary dancers.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: MFA Dance student
DCE	536	Somatic Practices	Laboratory for somatic education that explores the foundations of movement, voice, expression and spatial awareness. Open to nonmajors, the class welcomes and encourages the participation of students from a wide variety of disciplines. Taught through the principles of specific somatic lenses (e.g., the Alexander Technique, Bartenieff Fundamentals, and Body Mind Centering), the course highlights how embodied awareness affects artistic process and choice making, as well as enhancing physical capacities, kinesthetic intelligence, and the refinement of performance and technical skills. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment. Integrated lecture/lab. Prerequisite(s): degree- or nondegree-seeking graduate.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only DCE 536 or DCE 598 (Movement Language Sources) or (Somatic Practices)
DCE	537	African&Diaspora Movement Prac	Investigates and integrates historical and cultural contexts for West, Central, and South African and Post-African (diasporic) movement practices. Engages movement and physical articulation as tools to examine specific dance cultural knowledge and demonstrate/embody techniques representing that cultural knowledge.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance major; Credit is allowed for only DCE 537 or DCE 598 (African Diaspora Movement Practices)
DCE	538	Dance Theatre	Performance in specially choreographed dance productions.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student
DCE	540	Issues in Media for Dance	Introduces desktop multimedia as it relates to dance creation, production, education, and research.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	543	Sound Design for Dance	Audio mixing for analog/digital recording and editing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Dance majors
DCE	554	Teaching Praxis I	Provides both the theoretical basis and practical application of principles for teaching contemporary dance disciplines in a postsecondary setting. Includes discussion, co-teaching and individual teaching projects and sessions, practical application of course readings, and guest speakers. Both dance and discussion of ideas in each class session.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	560	Grad Creative Practices I	Artistic research through the practices of improvisation, choreographic choice making, and interdisciplinary collaboration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	561	Grad Creative Practices II	Explores a variety of contemplative practices designed to cultivate awareness and serve as stimuli for generating choreography and creative approaches in interdisciplinary collaborations.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Dance Graduate student; DCE 560

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DCE	563	Rhythmic Awareness	This course focuses on the kinesthetic aspects of weight, space, and time. It is opportunity for individual exploration as well as an ensemble experience, a chance to come together as a group through the communicative nature of sound, movement, and visual patterns.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	570	Graduate First-Year Seminar I	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices, present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world. Seminar.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance Graduate student; Credit is allowed for only DCE 570 or DCE 591 (1st Year Graduate Seminar)
DCE	571	Graduate First-Yr Seminar II	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices; present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	634	Postmodern Contemporary	Preparation in the performance and comprehension of professional-level modern dance for second-year graduate students. 6 hours weekly.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Dance Graduate student
DCE	654	Teaching Praxis II	Applies current learning theories and psychomotor development approaches to teaching practices and curriculum design for a variety of contexts and populations ranging from early childhood to late adulthood and community to institutional settings. Students develop and implement pedagogical praxis frameworks that stem from their developing teaching perspectives, values and objectives. Course experiences are designed to help students effectually integrate pedagogical theory and practice toward successful and meaningful ends.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): DCE 554; Credit is allowed for only DCE 654 or DCE 598 (Apprenticeship)

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DCE	656	Teaching Praxis III	Prepares students to teach in secondary dance education settings; to develop and teach higher education dance pedagogy, curriculum development, and teacher prep courses that meet professional teaching standards, state and national learning standards and requirements and institutional benchmarks. Participants develop specific teaching strategies and frameworks, as well as gain practical experience, within the settings of secondary dance education and university teacher preparation courses. Utilizes Laban Movement Analysis and other social somatic frameworks as inroads into teaching, curricular design and student assessment. Students help instruct and mentor undergraduate dance majors in a secondary dance teaching methods course. Illuminates current sociocultural and educational issues that influence teaching and learning in secondary dance classrooms, and addresses strategies and requirements for pre-service teacher preparation courses.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): DCE 554; Credit is allowed for only DCE 656 or DCE 680 (Secondary Teaching Praxis and Teacher Training Frameworks)
DCE	657	Pedagogical Res and Fldwrk	Provides a theoretical and practical foundation for students to engage in pedagogical research and fieldwork. Places primary emphasis on investigating and applying qualitative methods to processes of pedagogical inquiry and research. Students are mentored through processes of gathering information, focusing, designing, implementing and assessing an educational research project through fieldwork in a context of their choosing. The outcomes of students' fieldwork projects are documented and articulated in the forms of a scholarly research paper and live research presentation.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 554
DCE	660	Grad Creative Practices III	Artistic research through the practices of choreographic choice making, exploration, and experimentation of integrated environments and interdisciplinary collaboration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	661	Graduate Creative Practices 4	Culmination of a four-semester Creative Practices sequence, focusing on articulating individual creative practices and identifying the needs of each student relative to their Applied Projects. Students are also responsible for understanding the content and requirements for the selected modules of this course.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	670	Graduate Second-Year Seminar I	Part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, presents opportunities for dialoguing about topics significant to fulfilling degree requirements and promotes success in the dance program as well as to facilitate transition into the professional world. Reflection is a key component of the School of Dance curriculum; develops ability and skills in analysis, but more importantly builds awareness of intuitive and habitual patterns of response to new stimuli. The Seminar is a key moment each week to develop a community of inquiry amongst peers.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student; Credit is allowed for only DCE 591 (2nd Yr Seminar) or DCE 670
DCE	671	Graduate Second-Yr Seminar II	The Second-Year Graduate Seminar is part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DCE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): COE 501 or DCI 510 with B or better
DCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
DCI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student

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DCI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DNP	601	Theoretical Foundations	Examines philosophical foundations of advanced nursing practice by analyzing interrelationships among theory, philosophy, practice, and research.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	602	Evaluating Research Practice	Provides opportunities for graduate students to develop the knowledge and skills to critically analyze scientific literature and research for application to practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	603	HealthEquitySocialJustice	Focuses on the application of theories related to social justice and knowledge of social determinants of health to the role of the graduate prepared nurse for the purpose of advocating for health equity and creating innovative methods of addressing social injustices to improve health outcomes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to graduate Nursing program
DNP	604	Pathophysiology/Lifespan	Core course focuses on human pathophysiology and concepts of genetics for advance practice nursing.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS
DNP	605	Health Assessment Lifespan	Advanced health assessment skills, including history-taking strategies and physical, functional, developmental, and psychosocial assessment.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Adv Nurs Prac (AcuteCare or Adt-Geron) or Fam NP or Fam Psy Mntl Hlth or Pediatric NP or Wmn's Hlth NP stdnt or Acute Care Ped NP or Adt Geron NP or Fam NP or Fam Psych Mntl Hlth NP or Pediatric NP or Wmn's Hlth NP Cert
DNP	606	Principles Peds Acute Care I	Provides the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 607
DNP	607	AdvPeds Acute Care Practicum I	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 606
DNP	608	Pharmacotherapeutics Lifespan	For advanced practice nurses, expands theoretical and evidence-based knowledge and promotes synthesis of pharmacotherapeutic concepts and principles across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Family NP cert, Fam Psych Mntl Hlth NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Pract) MS or Nursing (Nursing Ed) MS student

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DNP	609	Advanced Practice Nursing Role	Focuses on the examination and implementation of the advanced practice nursing (APN) role. Presents historical and contemporary social and political influences on the development and implementation of the APN role and the circumstances prompting the movement of education for advanced practice to the doctoral level. Emphasizes the analysis of the role the APN and the Doctor of Nursing Practice prepared provider within the greater health care system. Explores issues and challenges related to advanced practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Doctor of Nursing Practice student
DNP	610	PrinciplesAdvEmergencyNursingI	Students acquire knowledge that is relevant to the management of common medical emergencies and management of patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 633; Corequisite(s): DNP 611
DNP	611	ENP Practicum I	Demonstrates management strategies and applies selected practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 633; Corequisite(s): DNP 610
DNP	612	Pediatric Palliative Care	Examines research, theory and principles for end of life and palliative care in infants, children, adolescents and young adults (birth to age 21 years).	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	613	Women's Health Promotion I	Didactic course focuses on theories of health behavior, health promotion, disease prevention and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Women's Health DNP student; DNP 602 with B or better; Corequisite(s): DNP 614
DNP	614	Women's Health Practicum I	Clinical assessment and education of women across the lifespan for the purposes of health promotion and disease prevention.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 613
DNP	615	Mgmt Women's Health Problems	Focuses on management of nursing care for high-risk perinatal women and women with common health problems.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 616
DNP	616	Women's Health Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 615
DNP	617	Mgt Complex&Chronic Disease Wm	Didactic course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health status across the lifespan and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 618
DNP	618	Womens Health Practicum III	Clinical course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health states across the lifespan and patient education.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 617
DNP	619	Principles Peds Acute Care II	Continues to provide the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 620
DNP	620	AdvPedsAcuteCarePracticumII	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 619
DNP	621	Health Assessment Skills	Skill-based course focuses on advanced clinical skills including suturing, splinting, x-ray, ECG and advanced lab interpretation.	N	LEL	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): DNP 605
DNP	623	Adult Gero Health Promotion	Introduces health promotion and disease prevention for adults across the lifespan emphasizing principles of evidence-based practice in clinical and community settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 624
DNP	624	Adult Gero Hth Promo Practicum	Clinical practicum designed to apply principles of evidence-based practice in health promotion and disease prevention in clinical and community settings.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 623

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DNP	625	Adult/Gero Common Hlth Problem	Includes theory and research that guides the management and maintenance of adults across the lifespan with common health alterations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 626
DNP	626	Adult/Gero Common Prob Practic	Diagnosis, management, and application of advanced knowledge and skills in caring for adults across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 625
DNP	627	Adult/Gero Complex Health	Focuses on application of EBP in care of adults of all ages with complex health alterations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 626
DNP	628	Adult/Gero Complex Practicum	Clinical practicum designed to apply principles of evidence-based practice in primary care management of adults across the lifespan with complex health alterations.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 627
DNP	630	PrinciplesAdvEmergencyNursell	Students acquire advanced knowledge that is relevant to common medical and traumatic emergencies. Focuses on preparing the student to implement the role of the advanced practice emergency nurse. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 610; Corequisite(s): DNP 631
DNP	631	ENP Practicum II	Demonstrate advanced management strategies and applies advanced practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 610; Corequisite(s): DNP 630
DNP	633	Family Health Promotion	Focuses on concepts and strategies to promote, manage, and maintain health of children, adults, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 634
DNP	634	Family Promotion Practicum	Clinical application of theories, concepts, and principles in the care of children,	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: Advanced Nursing Practice (Family Nurse Practitioner) major; Co-requisite: DNP 633
DNP	635	CommonFamilyHealthProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of acute and common health problems in family practice across the life span.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 636
DNP	636	CommonFamilyPracticum	Clinical application of theories, concepts, and research related to the management of acute and common problems in family practice across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 635
DNP	637	ComplexChronicFamilyProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of complex and chronic problems in family practice across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 638
DNP	638	ComplexChronicFamilyPracticum	Clinical application of theories, concepts, and research related to the management of complex and chronic problems in family practice across the life span for Family Nurse Practitioner role specialty.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 637
DNP	640	Adv Human Pathophys Pediatrics	Didactic course for pediatric nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in pediatric patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner)
DNP	641	Health Assessment Peds	Skills-based advanced health assessment course that includes history-taking strategies and physical, functional, developmental, psychosocial health assessment of children (birth-21).	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner certificate
DNP	642	Pharmacology Pediatric	Applies evidence-based pharmacotherapeutic principles to disease treatment and health promotion and maintenance for pediatric patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate
DNP	643	Pediatric Well Child	Offers information for theory-based developmental care of well children. Includes anticipatory guidance for parents and/or children/teens.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate; Corequisite(s): DNP 644

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DNP	644	Well Child Practicum	Clinical application of theories, concepts and principles as they relate to the developmentally based care of the well child.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner graduate certificate student; Corequisite(s): DNP 643
DNP	645	Common Problems Pediatrics	Provides health promotion and disease prevention strategies for the advanced nursing care of all children and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 646
DNP	646	Common Problems Peds Practicum	Facilitates development of advanced clinical skills in the assessment and management of child health, health surveillance and promotion.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 645
DNP	647	Complex Problems Pediatrics	Third pediatric didactic course focuses on assessment and management of childhood complex and chronic health problems and special health conditions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 648
DNP	648	Complex Chronic Peds Practicum	Clinical course assists students in developing advanced clinical skills in decision making with chronically ill or special needs pediatric patients.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 647
DNP	649	Adv Phys	Focuses on integrating the structure and function, including the molecular and cellular levels, that are vital to the overall functioning of the human across the lifespan. It is highly encouraged that students taking this course have a basic understanding of physiological principles to be able to learn advanced concepts covered in this course. It serves as an important fundamental foundation required for advanced practice providers and helps support students in their progression into advanced pathophysiology and clinical specialty course work. Examines the complex interactions of multiple body systems in helping to maintain homeostasis and proper body functioning to promote a foundation for health. Uses clinical scenarios to promote innovative ways to integrate the complex physiological concepts.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner certificate student
DNP	650	Adv Human Pathophys Neonates	Didactic course for neonatal nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in neonatal patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	651	Health Assessment Neonatal	Skill-based course focuses on advanced health assessment skills, including history-taking strategies and the physical, functional, genetic, developmental, and psychosocial/cultural health assessment of neonates.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Neonatal Nurse Practitioner) DNP
DNP	652	Neonatal Pharmacotherapeutics	Focuses on the application of knowledge of pharmacological principles in the treatment of diseases and promotion of health for neonates and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	653	Dev Fam Health Promo: Neonatal	Concepts, theories, interventions, and research related to the promotion, management, and maintenance of physical, behavioral, and developmental needs of at-risk newborns and infants and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 654
DNP	654	Neonatal Practicum I	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 653
DNP	655	Mgmt Common Neonatal Problems	Proactive neonatal theory course focusing on the concepts, theories, and research related to acute and chronic health deviations of neonates and infants.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner) Co-requisite: DNP 656
DNP	656	Neonatal Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 655
DNP	657	Management of Complex Neonates	Examines the application of knowledge of complex, multi-system alterations in neonatal health from a theoretical and research perspective in preparation for clinical practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	658	Neonatal Practicum III	Develops and applies advanced neonatal assessment, clinical decision making, and management skills to complex health alterations in at-risk neonates to include cultural, ethical, legal, and advocacy issues.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 657
DNP	659	Embryology and Genetics	Prepares advanced practice nurses to use embryology, genetics, and physiology concepts within the nursing process in the care of pediatric and neonatal patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Pediatric NP, or Women's Health NP) DNP student

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DNP	660	Neuropsychopathology Lifespan	Manifestations of altered neurophysiology and psychopathology over the lifespan. Uses evidence-based support for theoretical views of psychiatric disorders to analyze the relationships of neuropsychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Child and Adolescent Mental Health Intervention or Family Psychiatric and Mental Health Nurse Practitioner
DNP	661	EthicsAdvancedNursingPractice	Focuses on the ethical implications in the role of the advanced practice nurse and provides information on ethics and how professional and personal values relate to advanced nursing practice. This course meets the Essentials of Doctoral Education as defined by the American Association of Colleges of Nursing (AACN).	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice graduate student
DNP	671	Adv Mental Health Assessment	Focuses on comprehensive mental health assessment of psychiatric disorders occurring in children, adolescents, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner
DNP	672	Psychopharmacology Lifespan	Focuses on evidence-based use of medications for mental health disorders across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner
DNP	673	MH Promotion Lifespan	Focuses on evidence-based interventions to promote mental health across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Psych & Mental Health Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 674
DNP	674	MH Promotion Practicum	Clinical experiences to become skilled in assessment and evidence-based individual intervention of mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 673
DNP	675	Common MH Disorders	Emphasizes the assessment and evidence-based management of common mental health disorders across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner Co-requisite: DNP 676
DNP	676	Common MH Disorders Practicum	Clinical experiences necessary to become skilled in the assessment and evidence-based management of the most common mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Corequisite: DNP 673
DNP	677	Complex MH Lifespan	Focuses on modalities of evidence-based treatment with children, adolescents, adults, and families with complex and/or chronic psychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 678
DNP	678	Complex MH Practicum	Clinical experiences in the assessment and evidence-based management of the most complex and chronic mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 677
DNP	679	BiostatPrincipleStatsInference	Examines principles of statistical inference and their application to the analysis and interpretation of epidemiological, psychosocial, medical, nursing, and healthcare data.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing graduate student
DNP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DNP	682	Geriatric Health Promotion	Examines theoretical perspectives in aging and cultural and contextual approaches for health promotion in older adults.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688
DNP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
DNP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	703	Scholarly Writing	Provides a review of principles of scholarly and professional writing, plagiarism and APA 6th edition format.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Doctor of Nursing Practice student
DNP	704	Principles Evidence Based-Care	Foundational course focuses on the evidence-based process and understanding of evidence-based practice principles assist advanced practice nurses and other healthcare professionals in clinical decision making in order to provide best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: Doctor of Nursing Practice student
DNP	705	Health Care Outcomes Mgmt	Outcomes management methodology supports implementation of evidence-based practice and measurement of both patient and health care system outcomes attributed to adoption of best practices.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student; DNP 704
DNP	707	Disseminating Evidence	Focuses on methods for dissemination of evidence to advance best practice within local, regional, and/or national settings, as well as advancement of EBP in health policy and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 705
DNP	708	Systems Thinking Complex Hlthcr E	Studies basic and advanced systems principles as they relate innovation to the American healthcare system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	709	Individual & Innov Ldrshp Hlth	Introduces the role of the innovator, including the essential behaviors of risk taking, managing workload, and addressing the challenges of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	710	ClinPerspectBiomedDeviceDesign	Examines clinical perspectives on principles of biomedical device design, including interprofessional engagement with engineering and regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	711	Healthcare Policy & Innovation	Introduces the political, organizational, and economic dimensions of healthcare policy with emphasis on strategies for innovative policy and practice.	N	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	712	Clinical Residency&Management	Demonstrates DNP competencies through portfolio documentation of clinical learning experiences and implementation of the DNP Evidence-Based Clinical Applied Project. Doctoral students submit the DNP Portfolio in partial fulfillment of the degree.	N	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Doctor of Nursing Practice student
DNP	713	Org Cultures in Health Care	Analyzes culture, organizational implications and relationships to change and innovation in health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice (AcuteCare or Adult-Gerontology or Advanced NP or Family NP or Family Psychiatric Mental Health or Innovation Leadership or Pediatric NP or Women's Health NP) student
DNP	714	Prof Relationship in Healthca	Analyzes professional relationships within healthcare organizations and evidence-based strategies to improve communication, coordination, and collaboration.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Innovation Leadership, Pediatric NP, or Women's Health NP) DNP student
DNP	715	Dynamic Info in Health Care	Analyzes and applies multiple sources of information for health care leaders across the continuum of evidence including research, evidence-based practice, translational research, improvement science and quality improvement.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
DNP	716	Innov Leadership Health Care	Analyzes leadership theories in the creation of complex health care system innovation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Advanced Nursing Practice DNP student or Advanced Nursing Practice (Innovation Leadership) DNP student
DSC	100	ASU Design Experience	Covers ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	REC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): BS, BSD or BSLA Design School major. Credit is allowed for only DSC 100 or 194 (ASU Design Experience) OR Visiting University Student
DSC	101	Design Awareness	Surveys cultural, global, and historical context for the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	
DSC	102	Introduction to Design	Introduces design, with an emphasis on understanding the process and principles by which design shapes our world.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
DSC	236	Intro to Computer Modeling	Computers in design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Industrial Design major; passed milestone OR Visiting University Student
DSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
DSC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design or PhD in Environmental Design & Planning student
DSC	501	Qualitative Research in Design	Theory and application of qualitative research. Emphasizes using ethnography to identify and specify innovative concepts and strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design major
DSC	520	Contemporary Design Issues	Issues influencing contemporary design such as sustainability, globalization, education, gender, collaboration and emotion.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design student
DSC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD or Design (Inter Design) MSD student
DSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
DSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design, Master of Interior Architecture, Master of Science in Design, or Master of Visual Communication Design major

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DSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	School Computing, Informatics & Decision Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DST	101	Intro to Disability Studies	Provides an introduction to key concepts, methods, questions and themes in the field of disability studies, including an overview of the focused, unequal treatment experienced by people with disabilities. There are economic, political, social and cultural factors that should be considered by a society which normally addresses disabled bodies through medical frameworks. Debates ethical questions concerning genetic testing, selective abortion and disability therapies. Discusses how social inequalities of class, race, nationality, sexuality and gender relate to the experiences of the disabled.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
DST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
DST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	322	Implications of Disability	There are many types of disability, and oppression results from the socially constructed definition of disability. Provides a careful review of the many forms of disability, considering functional restrictions created within society and the impact of cultural limitations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
DST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	458	Disability & Comm Advocacy	Disability advocacy historically and in the contemporary context. Historical and legal approaches to disability advocacy helps frame students' interrogation of contemporary disability advocacy issues and movements. Addresses disability advocacy issues including questions about the meaning of disability, the ends and forms of advocacy, and the politics of disability. Emphasizes the communication practices that have constructed and debated the meanings, ethics and ends of disability advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 2.00 GPA

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DST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
DST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
ECD	211	Dev Child: Thry/Prac Pre-Grd3	Examines process of physical, social, emotional, cognitive, language, and literacy development of young children; includes observation, practical application, fieldwork.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
ECD	220	Intro to Nutrition,Hlth&Safety	Emphasizes providing proper nutrition, promoting a safe but challenging learning environment, and becoming knowledgeable of a child's health status. Also covers practical applications for assisting young children to develop good habits and attitudes and to assume lifelong responsibility for their own well-being.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
ECD	302	Found of Early Childhood Educ	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	310	Appl Early Child Development	Conveys knowledge of how development is both unique and interconnected. Takes a highly applied approach to build participants' knowledge, recognition and use of evidence-based practices within preschool classrooms that support children's development, both within and across domains. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	312	Social/Emotnl Fndtns of Learn	Foundations of early social development and evidence-based practices for promoting social-emotional development; young children's understanding, interactions, and relationships to the social world.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	313	Technology in Early Child Ed	Evaluates technology and technological learning tools for early childhood classrooms; integrates technology and its tools into students' learning. Lecture, discussion, active participation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	315	Clssrm Orgnzn/Gdnce Yng Chld	Theories and strategies to guide children's development toward becoming self governing; typical and atypical behaviors; implementing age-appropriate classroom management techniques that foster individual, social, and academic competence.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	316	Teacher Rsrch:Studyng Children	Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	321	Emerging Language and Literacy	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
ECD	322	Cog Gen Knwldg Sci Mth Lgc Rsn	Increases students' knowledge of and ability to implement high-quality strategies that support the development of children's mathematical, scientific and logical reasoning in developmentally appropriate ways. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	323	Bldng Home/Schl/Cmmnty Ptnrs	Knowledge and skills to facilitate positive and continuous family-school partnerships; family background, social context, family involvement, and current research on family-school interaction and academic success.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
ECD	324	Social Studies/Creative Arts	Social studies and creative arts standards, curriculum, and instructional and assessment strategies in an integrated social studies and creative expression curriculum for children birth through grade 3.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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ECD	325	Support Dual Language Learners	Increases students' knowledge of the language development of Dual Language Learners (DLLs), the role of home language in assessment and instruction, as well as knowledge and application of instructional practices to support DLLs' oral language and emergent literacy practices. Students design and implement activities for working with young children who are DLLs and their families. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): ECS 321
ECD	327	Becoming a Teacher Leader	Explores the perspective that effective early childhood professionals are self-aware, culturally competent leaders who practice ongoing reflection and growth. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	341	Admnstrtn/Evltn of EC Pgrms	Administration and evaluation of early childhood programs. Emphasizes planning and evaluation; regulations; health, nutrition, and safety; operations, budgeting, and supervision of personnel.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	396	Student Teaching: ECD Birth-5	Student teaching in early childhood education classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECD	406	Assessment: Birth-Grade 3	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	416	Soc&Ed Policies Affct Chld&Fam	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links between policy, educational practice, schools, and family functioning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	418	Inst. Methods for Young Child	Develops integrated experiences with children's literature for facilitating development in reading, writing, speaking, and listening. Further develops educational strategies for promoting growth in the social studies and creative arts curriculum, and instructional/assessment strategies for preprimary- and primary-level children; developmentally appropriate methods and strategies for effective instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	476	Intentional Teaching	Guides teachers in becoming intentional practitioners through: observation, assessment, purposeful planning and reflective practice to adapt a variety of supports for children in order to maximize student potential and outcomes. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
ECD	477	Student Teaching Birth - PreK	Supervised practicum in a birth to pre-K program.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4-6		Prerequisite(s): admission to the Professional Program
ECD	478	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-9		Prerequisite(s): admission to the Professional Program
ECD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): admission to the Professional Program
ECD	503	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
ECD	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
ECD	505	Foundations Early Childhood Ed	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	520	Child Guidance	Introductory exploration of a variety of techniques for developing a positive classroom environment. Includes overview of several classroom and school management programs and possible effects of implementation. Focuses on observations made during the students' classroom and field experiences. Provides the catalyst for introducing students to the program's professional portfolio requirement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student

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ECD	525	Emergent Literacy	Examines current and classic research on oral language and literacy development and effective strategies for teaching language and literacy from birth through kindergarten, including phonemic awareness and alphabet instruction and beginning decoding.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 525 or RDG 525
ECD	526	Integrated Literacy	Examines current and classic research on language and literacy development and effective strategies for teaching and assessing language and literacy from kindergarten through third grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	527	Math in Early Childhood Educ	Explores methods of teaching and assessing mathematical skills and reasoning in children ages birth through third grade along with the broader impact of math literacy in young children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	541	Assessment of Young Children	Assessment principles, techniques, and issues related to guiding learning for children birth through eight years. Test construction, interpretation and communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	549	Found Div, Human Dev & Child	Psychology of learning and instruction, including the foundations of learning theories and their application to educational practice with an emphasis on diversity, multidirectional human change and cultural embeddedness.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	565	Instructional Methods ECD	Surveys appropriate teaching methodologies for young children across the curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	567	Clinical Experience: ECD	Applies course content in early childhood education preschool classrooms birth to age 5; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	576	Clinical Experience: ECD K-3	Applies course content in early childhood education classrooms grades K-3; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	577	Practicum: Early Childhood	Student teaching in early childhood education classrooms ages birth to 5; synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	578	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3; synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECN	211	Macroeconomic Principles	Basic macroeconomic analysis. Economic institutions and factors determining income levels, price levels, and employment levels.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	212	Microeconomic Principles	Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	213	Honors Macroeconomics	Introduces modern macroeconomic analysis. Theory of national income, unemployment, inflation, and economic growth and its application to economic policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; MAT 210, 211, 270, or 271 with C or better; Credit is allowed for only ECN 213 or ECN 313
ECN	214	Honors Microeconomics	Introduces modern microeconomic analysis. Theories of consumer behavior, production and cost. Output and price determination in a variety of market settings.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 211 or 271 with C or better if completed; Credit is allowed for only ECN 214 or ECN 312
ECN	221	Business Statistics	Introduces methods of statistical description, inference, probability, sampling, hypothesis testing and regression analysis with focus on business application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): MAT 211, 266, or 271 with C or better OR Visiting University Student
ECN	231	Honors Business Statistics	Applies statistical methods used in business and economic modeling and research. Emphasizes regression analysis and modeling.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): Barrett Honors student; MAT 211 or 271 with C or better

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ECN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 210, 211, 270, 271, or 272 with C or better if completed
ECN	306	Survey International Economics	Surveys international trade issues, commercial policy, trade theory, customs unions, and international monetary topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213; ECN 212 or 214; MAT 211 or 271 with C or better OR Visiting University Student
ECN	312	Intermed Microecon Theory	Expands on models covered in principles. Models consumer and producer choice, market structure and welfare.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 with C or better; MAT 211, 266, or 271 with C or better; Credit is allowed for only ECN 214 or ECN 312 OR Visiting University Student
ECN	313	Intermed Macroeconomic Theory	Expands on topics covered in principles. Emphasizes models of growth, employment, economic fluctuations, monetary and fiscal policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Credit is allowed for only ECN 213 or ECN 313 OR Visiting University Student
ECN	315	Money & Banking	Functions of money. Monetary systems, credit functions, banking practices, and central banking policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	331	Economics European Econ Union	Examines broad economic policies seeking to influence individuals' decisions, the history of European economic development and policies, as well as institutions and social systems.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better
ECN	335	South Asia & the World Economy	Develops and discusses alternative theories of trade, development, and growth in the context of south Asia and the world economy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211, 266, or 271 with C or better
ECN	342	Sports Economics	Applies microeconomic concepts of competitive and imperfectly competitive markets, collective bargaining, antitrust issues and public finance to the sports industry.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better; Credit is allowed for only ECN 342 or ECN 394 (Economics of Sport) OR Visiting University Student
ECN	345	Env & Resouce Economics	Economic principles applied to private and public policy decisions involving environmental resources, natural resource management, and policy analyses. Focuses on how economic methods can contribute to making better environmental decisions.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	355	Economics of Healthcare	Uses economic tools and models to discuss and evaluate the American healthcare system. Applies standard concepts in microeconomics, macroeconomics, and public choice economics to the study of the evolution and the current state of the healthcare system and to the study of proposals for change. Focuses on the promise and problems of using economic tools in a historical, ethical, and cultural context to understand the current healthcare system.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better OR Visiting University Student
ECN	360	Economic Development	Theories of economic growth and development. Role of capital formation, technological innovation, population, and resource development in economic growth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	365	Economic Russia/Eastern Europe	Origins and analysis of contemporary institutions. Comparative development and differentiation in the 20th century.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	382	Managerial Economics	Applies economic analysis to managerial decision making. Market analysis in the context of the socio-legal environment. Does not satisfy Economics major requirements.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: Not open to Economics or Business majors. Minimum 2.0 ASU cumulative GPA and minimum of 56 total earned hours OR Non-degree student with minimum 2.0 ASU cum GPA OR Graduate student.
ECN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	404	History of Economic Thought	Development of economic doctrines, theories of mercantilism, physiocracy, classicism, neoclassicism, Marxism, and contemporary economics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313

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ECN	410	Applied Regression Analysis	Applies regression techniques to forecasting in business and institutional environments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student
ECN	411	Analysis of the U.S. Economy	Studies the major data releases used by economists to track the U.S. economy. Emphasizes how these data are used and their connection to macroeconomic theory.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 411 or ECN 494 (Contemporary Topics in Macroeconomics)
ECN	413	Advanced Honors Macroeconomics	Develops and uses various macroeconomic models to evaluate important economic policies. Emphasizes honing students' policy evaluation skills.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	414	Advanced Honors Microeconomics	Develops and uses various microeconomic models to evaluate important economic issues. Emphasizes the economics of uncertainty and information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 with C or better if completed
ECN	416	Game Theory&Economic Behavior	Introduces game theory and its application to various economic situations under conditions of complete and incomplete information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	421	Labor Economics	Labor supply and demand, unemployment, determinants of wages, earnings inequality, labor unions and the structure of labor contracts.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	423	Economics of Education	Focuses on educational decisions, including individual choices, institutional strategies and government policies. Topics include measuring the costs and returns of education, the relationship between education and inequality, and the role of K-12 and postsecondary institutions in economic growth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 423 or 494 (Economics of Education)
ECN	425	Introduction to Econometrics	Elements of regression analysis: estimation, hypothesis tests, prediction. Emphasizes use of econometric results in assessment of economic theories.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student
ECN	436	International Trade Theory	Comparative-advantage doctrine, including practices under varying commercial policy approaches. Economic impact of international disequilibrium.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	438	Internatl Monetary Economics	History, theory, and policy of international monetary economics. Balance of payments and exchange rates. International financial markets, including Eurocurrency markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	441	Public Economics	Public goods, externalities, voting models, public expenditures, taxation, and budget formation with emphasis on the federal government.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	445	Environmental Economics	Advanced topics in environmental economics with quantitative methods for developing information that is used for environmental policy making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	453	Industrial Org/Compete Policy	Development of public policies toward business. Antitrust activity. Economic effects of government policies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better OR Visiting University Student
ECN	455	Health Economics	Focuses on health care decisions, including individual and government policies. Topics include demand for and supply of health care, payment for health care, the impact of health care reform and the techniques economists use to evaluate health care interventions.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	470	Mathematical Economics	Integrates economic analysis and mathematical methods into a comprehensive body of knowledge within contemporary economic theory.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better
ECN	475	Capstone in Economics	Capstone course integrating several areas of economics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	L	Prerequisite(s): ECN 213 or 313 with C or better; ECN 214 or 312 with C or better; Senior standing
ECN	479	Experiments in Economics	Experiments on risk and time preferences, trust, collective action, social preferences and norms, gender, information, discrimination and market behavior.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; ECN 425 with C or better; Credit is allowed for only ECN 479 or ECN 494 (Experiments in Economics)

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ECN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): minimum 3.0 GPA; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-6		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Economics	1-6	L	Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite: ECN 213 or 313 OR Visiting University Student
ECN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Economics	1-3		
ECN	502	Managerial Economics	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost, and pricing. Evaluates competitive strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	2-4		Prerequisite(s): MBA degree program student; Credit is allowed for only ECN 502 or FIN 535
ECN	503	Global Business Environment	Macroeconomic analysis of issues related to economic growth, inflation, interest rates behavior, unemployment, exchange rate determination, and global competitiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): MBA degree program student
ECN	504	Basics of Managerial Economics	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost and pricing. Evaluates competitive strategies. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree-seeking graduate student
ECN	510	Microeconomic Theory/Applicatn	Applies economic theory to production, consumer demand, exchange, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	2-4		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	525	Applied Regression Models	Simple linear regression, multiple regression, indicator variables, and logistic regression. Emphasizes business and economic applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	527	Categorical Data Analysis	Discrete data analysis in business research. Multidimensional contingency tables and other discrete models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: ECN 525
ECN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	711	Macroeconomic Analysis I	Current theories of output, employment, inflation, and asset prices as well as major aggregates. Introduces dynamic optimization techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student

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ECN	712	Microeconomic Analysis I	Theory of production, consumer demand, resource use, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	713	Macroeconomic Analysis II	Focuses on growth theory, dynamic general equilibrium models, monetary theory, open-economy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	714	Microeconomic Analysis II	General equilibrium, welfare economics, production, and capital theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	715	Adv Macroeconomic Analysis	Focuses on current research areas in macroeconomics and monetary theory with emphasis on methods in economic dynamics and numerical techniques.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C or better; ECN 713 with C+ or better
ECN	716	Advanced Economic Theory I	Economic behavior under uncertainty; markets and contracts under asymmetric information; the theory of games with incomplete information and applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 714 with C or better; ECN 712 with C+ or better
ECN	717	International Macroeconomics	Intertemporal approach to the current account, international business cycles, international risksharing and home bias, models of exchange rate determination, balance of payment crises, sovereign debt and default.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	721	Labor Economics I	Develops basic theoretical models for analyzing labor market issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	722	Labor Economics II	Extensions/criticisms of labor market theories. Applications to a variety of policy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 721 with C or better
ECN	725	Econometrics I	Problems in the formulation of econometric models. Emphasizes estimation, hypothesis testing, and forecast of general linear models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	726	Econometrics II	Estimation and inference of qualitative and limited dependent variable models as well as general multiple equation models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 725 with C+ or better
ECN	727	Quantitative Methods Economics	Generalized method of moment estimation, estimation with censored and truncated samples, nonlinear models, panel-data models, econometrics of nonstationarities.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	736	International Trade Theory	Theories of comparative advantage and their empirical verification. Theory and political economy of commercial policy. Resource transfers and the role of the multinational corporation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	741	Public Economics	Economics of collective action, public spending, taxation, and politics. Impact of central governmental activity on resource allocation and income distribution.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree-seeking graduate students; ECN 712 with B or better; Corequisite(s): ECN 714
ECN	753	Industrial Organization	Analyzes structure, conduct, and performance in industrial markets; the economics of organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 714 with C or better
ECN	760	Economics Growth/Development	Economic problems, issues, and policy decisions facing the developing nations of the world.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C+ or better; ECN 712 with C+ or better; Corequisite(s): ECN 713; ECN 714
ECN	770	Mathematics for Economists	Surveys mathematical ideas encountered in economics and econometrics. Topics include measure theory, probability theory, and mathematical statistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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ECN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ECS	310	Found Typic/Atypical Child Dev	Examines the process of typical and atypical physical, social, emotional, cognitive, and language development of young children with or at risk for delay.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	312	Soc and Em Devpt of Yng Child	Examines genetic, environmental and biological influences on typical and atypical social and emotional developmental processes through current research, current issues, as well as connections to practice.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): Professional Teacher Preparation Program student OR Educational Studies BAE student; minimum junior standing OR Early Childhood minor OR Educational Studies minor OR Visiting University Student
ECS	315	Classroom Org & Child Guidance	Develops and implements analysis, intervention, and consultation strategies for effective management of classroom behavior for students with and without disabilities. Age-appropriate techniques addressing individual, social, and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	316	Assessment/Evidence-based Prac	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments. Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	321	Comm, Lang Dev and Emerg Lit	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
ECS	340	Creative Curriculum ECD	Provides an overview of research and curricular strategies for preschool classrooms, including best practices for classroom design, management, scheduling and lesson development. A comprehensive, research-based curriculum that features exploration and discovery as a way of learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
ECS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
ECS	397	Student Teaching: Inclsve ECD	Student teaching in early childhood education inclusive classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECS	411	IMYC: STEM	Explores, applies and integrates STEM (Science, Technology, Engineering and Math) content, project-enhanced instructional strategies and assessments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	412	Math Curriculum/Instrctn/As	Focuses on math content, methods, skills, and attitudes to be considered in teaching young children. Examines the theoretical foundation for young children's inquiry and learning. Methods focus on practical application of theory in classroom practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	413	Literacy Curriculum/Instrct/As	Extends ECD 321; language and literacy development in K-3 classrooms; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program
ECS	420	Eval & Interv Strateg Disabil	Students will learn to screen, assess and provide services to young children with special needs using norm-referenced, criterion-referenced, and formative assessments to determine special education eligibility, plan individualized family service programs, and monitor progress for eligible students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ECS	427	Highly Indiv Teach Learn	Covers evidence-based research and practices for fostering the social emotional, cognitive and motor development of young children with varying needs and abilities in inclusive settings. Students learn to individualize instructional strategies, design learning environments with appropriate accommodations and adaptations, and understand Individual Education Plans (IEPs) and/or Individual Family Service Plans (IFSPs). In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
ECS	430	Sys Pol Advoc in ECD/SPE	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links among policy, educational practice, schools, and family functioning that have a direct impact on both typical and special needs children in early childhood programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
ECS	431	Fam Com & Prof Support Syst	Covers methods and issues in cooperative teaching for special education students in general education classrooms, with an emphasis on collaborative communication skills for working with a variety of school professionals and families.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Professional Teacher Preparation Program or enrolled in Educational Studies program or enrolled in Early Childhood minor
ECS	478	Student Teaching: SPE K-3	Student teaching in early childhood education inclusive classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): admission to the Professional Program
EDA	501	Competency/Perform Educ Adm	Nature of educational administration and the concept of competency as it applies to educational administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	505	American Education System	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	511	School Law	Interpreting state and federal law and policy in school settings. Includes statutory authority for administrators, liability, constitutional rights, law, and ethics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	514	Leadership in Curric/Assessmnt	Curriculum and assessment responsibilities of school administrators.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	526	Instructional Supervision	Administering curriculum improvement, in-service education, evaluating, and improving teaching competence; administrative instructional responsibilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	548	Sch, Family/Comm Connections	Administrative factors of primary importance in developing community involvement in public schools. Emphasizes theory and skill of school system and individual communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	572	School Finance&Human Resources	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and school financial affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	578	Critical Iss/Educ Leadership	Explores current critical issues in school leadership, including student support and relationships with governmental agencies and the community.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
EDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	611	Educational Policy and the Law	Emphasizes policy analysis and application of federal and state law to policy evaluation and development in public schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	634	Instructional Leadership	Theory, practice, and issues in school change and reform with a focus on leading change efforts at the school site.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	676	The School Superintendency	Critical examination of the school superintendency and the primary functions of this educational position. Includes the duties, responsibilities, activities, and problems of the school superintendent. Examines the unique leadership role of the school superintendent.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	679	Admin Special Programs in Educ	For personnel administering special education and federal programs; responsibilities of principals, supervisors, counselors, and directors for special education and federally funded programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	685	Education in Global Contexts	Global perspectives on education in contemporary society with emphasis on social, political, and economic factors that affect access and equity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-6		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	701	Advanced Quantitative Methods	Data collection, analysis, interpretation in studies using quantitative methods of inquiry situated in action research, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 701 or TEL 701
EDA	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 702 or TEL 702

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EDA	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 703 or TEL 703
EDA	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 704 or TEL 704
EDA	772	School District HR&Bus Mgmt	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and business affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	773	Sup&Sch Dist Ldrshp Roles&Rsp	Examines management roles and responsibilities of public school district superintendents and other leaders in identifying and addressing critical issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	310	Ed Psychology for Non-Teachers	Human behavior in educational situations. Individual differences, factors affecting learning, behavioral and cognitive learning, motivation, testing, and assessment.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6	SB	
EDP	311	Ed Psych for Future Teachers	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3	SB	Prerequisite(s): Teachers College major, minor or certificate student OR Visiting University Student
EDP	313	Childhood and Adolescence	Principles underlying total development of pre- and early-adolescent children. Emphasizes physical, intellectual, social, and emotional development with practical implications for teachers. Meets ADE requirement for one course in early adolescent psychology for middle grade endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
EDP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EDP	454	Statistical Data Analysis Educ	Role of data analysis in research and decision making. Elements of exploratory data analysis, descriptive indexes, and statistical inference.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	
EDP	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
EDP	510	Psychology in Education	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	514	Psychology of the Adolescent	Cognitive, physical, and social development of adolescents in contemporary society. Impact of family, school, and workplace on adolescent development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	540	LearningTheories&InstrctStratg	Studies grounded instructional strategies rooted in established theories of learning to form the basis of building instruction. Explores how teaching, learning and performing can be designed via technological environments to support instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only EDP 540 or LSE 540
EDP	552	Multi Regression/Correlatn Mth	Educational applications of regression techniques. Quantitative and qualitative predictors, curvilinear trends, and interactions. Emphasizes analyzing data and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	554	Analysis-of-Variance Methods	Educational applications of ANOVA techniques. Between- and within-subjects designs, multiple comparisons. Emphasizes using statistical software and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	597	Applied Research & Reflection	The dual purpose of the project is to synthesize learning from multiple areas of scholarship on teaching and learning, and to reflect on the content and process of the master's degree program. Culminating product includes a reflective paper with a corresponding project, such as a literature review, curricular model, technology product, or other project as agreed upon by the student and the student's advisor.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	651	Mth/Practices Qual Research	Advanced course for students familiar with theory and extant work. Topics include data collection, analysis, reporting, and an extensive fieldwork project.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): COE 503 with C or better
EDP	652	Multivar Proccds Data Analysis	Educational applications of multivariate methods, including MANOVA, discriminant analysis, and exploratory factor analysis. Emphasizes analyzing data and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	654	Structural Equation Modeling	Educational applications of confirmatory factor analysis, path analysis, and full latent variable models. Experience in conducting analyses and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
EDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	200	Design Literacy&Commnctn	Builds the requisite skills for students to be able to express their ideas visually. Gives exercises to create an understanding of basic principles of design as well as design communication, principles of composition and aesthetic evaluation. Uses tools such as sketching, drawing, computer graphics and model making as a vehicle to develop an understanding of visual methods of expressing one's self.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or The Arts (Fashion Design) major
EDS	201	Fund. of Sustainblty in Design	Explores sustainability as it relates to the key disciplines that comprise environmental design. Topics range from issues affecting the preservation of the urban fabric to the development of earth-friendly materials used by interior designers and product designers to the design of sustainable buildings by architects through the use of appropriate materials and requisite energy efficiencies. Surveys the literature of sustainability, identifying critical issues on the subject today. Explores the theoretical underpinnings of the sustainability movement as it affects environmental design and related disciplines.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		

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EDS	223	Design Thinking	Introduces the notion of design thinking, a concept that is gaining significant recognition in several disciplines including art, design, business, engineering and others. Design thinking can be described as a creative, multidisciplinary, human-centered approach to solving complex problems. Contemporary society faces numerous challenges, and the need for new tools and methods to tackle and solve these problems is more pressing than ever before. Offers several new techniques of design thinking and creative problem solving through engaging lectures and exciting projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
EDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	301	Sustainable Comm Dgn/Practices	Covers concepts and practices of a sustainable built environment of community scale. Exposes theories and methods, best practices to the design of built environments as a vehicle to develop students' understanding of different aspects of planning, designing, building, managing and promoting social and economic development of communities to meet sustainable development objectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Pre- or corequisite(s): EDS 200 OR Visiting University Student
EDS	302	Design Inq & Ugrad research	Theories and methods of design inquiry within a research environment. Prepares students for the senior-year synthesis courses. Students take on design-related research and develop and write a proposal for an integrative experience/project for an environmental design intervention and make an implementation plan to realize this intervention.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: EDS 301
EDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	401	Environmntl Design Synthesis I	First of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students identify a relevant research problem in environmental design and undertake the necessary literature search and reading regarding theories and methods related to the selected research question. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 440 with C or better OR Visiting University Student
EDS	402	Environmntl Design Synthesis II	Second of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students implement the research study identified in the first semester of the two-semester sequence. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): EDS 401
EDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
EDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
EDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
EDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-7	L	
EDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
EDT	180	TechLtrcy Prblm Slvng DigTech	Introducing digital technologies and their place in society. Applies 21st-century skills to problem solving using digital technology applications including spreadsheets and databases.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Credit is allowed for only EDT 180 or EDT 321 OR Visiting University Student

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EDT	321	Computer Literacy: Mobile Tech	Uses mobile technologies across disciplines for communication, collaboration, creativity and problem solving. Employs digital tools including Microsoft Office's spreadsheets and databases, Google apps, mobile apps, and a variety of other Web-based tools in problem-based environments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Pre-requisite: Minimum 45 hours; Credit is allowed for only EDT 180 or EDT 321
EDT	440	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	460	Games, Technology & Society	Education, healthcare and social activism. Explores general theories about the relationship between technology and society using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact. Students play and analyze existing impact games as well as conduct a landscape analysis for an impact game on a topic of their own choosing.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only EDT 460 or 560
EDT	461	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
EDT	463	Games for Impact: Life Cycle	Presents an impact game publishing methodology covering the full life cycle and key considerations for impact game design, development and publishing as well as the unique challenges in making games for impact. Applies methodology to examine an existing impact game currently in development. Students collaboratively workshop an original impact game concept and publishing plan that harnesses the power of games to address a key 21st-century challenge.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing. Credit is allowed for only EDT 463 or EDT 563
EDT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EDT	501	Fndtns of Learning Design&Tech	Foundations and evolution of the field of learning design and technology; examines accomplishments and issues in the field and explores possible career paths.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	502	Design and Development of Inst	Centers on the design and development of competency-based instructional materials, based on a variety of instructional design models, for learning in a multitude of settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	503	Design Effective Communication	Explores the theory, research and practice of computer-mediated communication including principles of graphic design for the purposes of creating effective presentations, job aids/infographics and video/audio for educational purposes. Includes a focus on accessibility and Section 508 compliance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	504	Modalities of Learning	Focuses on the development, design and creation of various forms of Web-based instruction including blended, hybrid and online learning. Examines the characteristics of interactive media, synchronous and asynchronous forms of distance/online learning, eLearning software and project management.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	506	Evaluation of Learning System	Examines procedures for evaluating educational programs, training systems and new-technology applications. Focuses on basic evaluation concepts, steps in conducting a systematic evaluation project, the preparation of an evaluation report, as well as ethical issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540 or EDT 501 or EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only CED 525 or EDT 506
EDT	507	Performance Imprvmnt & Ldrshp	Introduces the field of human performance technology. Emphasizes the analysis of performance problems, their causes, and interventions.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate

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EDT	511	Emerging Trends Tech Lrng Dsgn	Identifies current and future trends in the field of educational technology. Examines key trends, developing technologies and the affordances these technologies might offer, as well as the challenges with implementation that might be faced. Prepares students to embrace the ever-evolving nature of teaching and learning with technology, and how this may impact the process of design. Our awareness and openness to change influences our practice, and staying current with trends is an important characteristic of any future role related to educational technology that one may have.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student
EDT	523	Issues in Online & Distance Ed	Investigates current issues and trends specific to the implementation of web-based teaching and learning as well as practices for effective online instruction. Examines online learning principles, practices and their effectiveness by exploring the use of related systems and applications.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; EDP 540; EDT 501; EDT 502
EDT	524	Issues in K-12 Online Learning	Examines current issues, policies, and trends pertaining to K-12 Web-based teaching and learning. Actively explores research related to online learning, with a focus on virtual schooling and emerging best practices for effective online instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Practicing or licensed K-12 teacher
EDT	530	Technology Integration Methods	Examines a constructivist approach to technology in education. Investigates technology as a catalyst for rethinking instructional goals and practices.	Y	LEL	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	540	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	545	Using the Internet in Educ	Explores the Internet as an educational tool for research, inquiry-based learning, and online learning communities. Incorporates constructivist theory.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	560	Games, Technology and Society	The role and significance of digital games in society and the process of designing games for impact in areas such as education, healthcare and social activism. Explores general theories about the relationship between technology and society, using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 460 or EDT 560
EDT	561	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 461 or EDT 561
EDT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: EDT 501, 502, and 503 with C or better
EDT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDT	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisites: Accepted in either the MED in EDTCH, PHD in EDTECH, or the certificate in EDTECH programs
EDT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 502 with C or better
EDT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): EDT 701 with C or better
EDT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EDU	301	Why Education?	Explores and understands diverse forms and roles of education across multiple settings and populations, and from those encounters, evaluates how those forms and embedded practices support different values that are commonly tied to education. This evaluation includes the analysis of fundamental questions about justice, equity, opportunity and fairness in education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	304	Coursework, Identity, Career	Connects critical concepts in coursework to field-based opportunities. Identifies social concerns that define an educational field as well as known supports and possible barriers. Given the specified discipline of a field, defines learning opportunities as well as opportunities for leadership, advocacy and innovation.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	396	Internship Non-profit Learning	Intern in a non-profit organization to link programmatic learning and personal educational interests. Expands students' experiences in culturally and socially diverse educational settings as they gain an understanding of the internship site's work, mission and audience. Expands on their vision for a future career by observing, actively participating, evaluating and reflecting on their internship experience.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	402	Partnering for Ed Initiatives	Examines global formal and informal partnerships to design innovative and sustainable educational initiatives that address social concerns and meet the needs of diverse populations. Shares solutions through professional communication using technology to collaborate with diverse groups.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	403	Planning for Capstone Project	Designs an education system or program to meet the needs of a diverse population within a specific community. Applies current research-based learning theories to the design. Uses professional communication skills to establish a partnership to advance an educational effort that promotes change within a community. Students use a deliberate design process to plan out an educational system or program that is aligned with their values and beliefs for learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre- or corequisite(s): EDU 396; EDU 484

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EDU	404	Nav Change in Ed Innovation	Advocates for educational solutions that change communities and lives by addressing social concerns. Applies professional ethics to navigate through formal systems to change educational environments that meet the needs of a diverse population within a specific community. Expands one's experience in education across different cultural and social settings. Students communicate and collaborate globally to share findings and solutions on the world stage.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EDU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6		Prerequisite(s): Barrett Honors student
EDU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EDU	498	Pro-seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-7		
EDU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LAB	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-3		
EDU	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	324	Social Studies in Elem Schools	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners. Explores instructional materials, technology tools and social studies programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	396	Clinical Experience I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a K-8 classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of EED 396 fulfills two (2) of eight (8) required semester hours of practicum in grades K-8, as required by SBR R7-2-608 for an Elementary Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program

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EED	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
EED	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
EED	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
EED	433	Lng Method Mgt/Assesment	Theory on the social nature of oral and written language and congruent teaching, management and assessment practices. Emphasizes skills, strategies and dispositions for teaching 21st-century multimodal literacies to diverse learners including ELL with a focus on learners as creators of content, communicators, collaborators and global citizens.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	478	Student Teaching: EED 1-8	Student teaching in elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
EED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EED	511	Curriculum Theory&Instruct Pln	Contemporary curriculum theories. Curriculum as an interrelated entity. Process for instructional planning for student understanding and achievement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	521	Instructional Planning Diverse	Planning and delivering instruction; making adaptations for English language learners and students with special needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	524	Social Studies Meth&Assessment	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	529	Science Methods & Assessment	Problems and trends of current programs. Development of a balanced and articulated science program.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	531	Teaching with Educ Technology	Focuses on using technology in K-12 classrooms. Addresses the integration of technology in all curricular areas for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	537	Math Methods & Assessment	Contemporary mathematics teaching. Content, materials, and approaches to instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student
EED	550	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
EED	567	Clinical Experience I	Applies course content in elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	576	Clinical Experience II	Applies course content in elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): EED 567; degree- or nondegree-seeking graduate student
EED	578	Student Teaching: Elem 1-8	Student teaching in elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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EED	579	Apprentice Teaching: EED K-8	Apprentice teaching in elementary school classrooms. Synthesized experience in classroom management, curriculum, instruction and assessment. Must be taken four times for a total of 12 semester hours.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EEE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
EEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	202	Circuits I	Principles for analyzing linear and nonlinear circuits. Uses SPICE and MATLAB. Design and measurement of linear analog electrical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): degree-seeking student; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed; PHY 131 with C or better if completed OR Visiting University Student
EEE	203	Signals and Systems I	Introduces continuous and discrete time signal and system analysis, linear systems, Fourier, and z-transforms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; EEE 202; MAT 242 with C or better or Pre- or corequisite(s): MAT 342 or 343 with C or better if completed OR Visiting University Student
EEE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prereq(s) w/min C: degree-skg stdnt: CSE 100 or 110; CSE or EEE 120 OR Sftware Engr or Engr Mgt maj; CSE 110; SER 232 OR Elec Engr maj; CSE 100 or 110; CSE or EEE 120 OR Com Sci & Engr grad; Credit allowed for CSE or EEE 230 OR Visiting University Student
EEE	241	Fundamentals Electromagnetics	Vector analysis, differential operators, fourier analysis, scalar, vector fields, electro/magneto statics, time-varying fields, boundary value problems, dielectric, magnetic materials, Maxwell's equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; MAT 267 or 272 with C or better; MAT 274 or 275 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202 OR Visiting University Student
EEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	304	Signals and Systems II	Communication, signal processing, control systems, continuous, discrete transforms, sampling theorem, analog, digital modulation, filter design, signal processing applications, state space.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	307	Sig Process Digital Culture	Signal processing for non-majors. Digital filters, Fourier and z transform, DFT and FFT, digital signal processing computing, interdisciplinary DSP applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): non-ECEE major; MAT 210, MAT 265, or MAT 270; Credit is allowed for only EEE 307 or EEE 394 (Signal Analysis for the Digital Culture)
EEE	333	Hardwre Design Lang/Prog Logic	Develops digital logic with modern practices of hardware description languages. Emphasizes usage, synthesis of digital systems for programmable logic, VLSI.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 120 or CSE 120; EEE 202 OR Visiting University Student
EEE	334	Circuits II	Design of analog and digital circuits. Diodes/BJTs/Mosfets. Digital and analog circuit building blocks. Fundamentals of mixed signal circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) student; EEE 202 OR Visiting University Student
EEE	335	Analog and Digital Circuits	Analog, digital microelectronic circuits and systems. Amplifiers, frequency response, gate sizing, timing analysis, sequential digital circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) major; EEE 334 OR Visiting University Student

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EEE	341	Engineering Electromagnetics	Time-varying electromagnetic fields, waves in homogeneous and stratified media, transmission lines, waveguides and cavity resonators, radiation and antennas.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; EEE 241 OR Visiting University Student
EEE	350	Random Signal Analysis	Probabilistic and statistical analysis as applied to electrical signals and systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; MAE 317 OR pre- or corequisite: EEE 203; OR Fulton Engineering graduate student OR Visiting University Student
EEE	352	Properties Electronic Material	Schrodinger's wave equation, potential barrier problems, bonds of crystals, the band theory of solids, semiconductors, superconductor dielectric, and magnetic properties.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114, 115, 116 or 118; EEE 241; PHY 241 with a C or better OR Visiting University Student
EEE	360	Energy Sys/Power Electronics	Conventional and alternate energy sources for power systems, three-phase analysis, AC generators, transformers, induction, DC motors, power electronic speed control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 202; Pre- or corequisite(s): EEE 241 OR Visiting University Student
EEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	404	Real-Time DSP Systems	Digital signal processors, translating signals and systems concepts into real-time multimedia and communications applications, real-time algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CSE 230 or EEE 230; EEE 203
EEE	407	Digital Signal Processing	Time and frequency domain analysis, difference equations, z-transform, FIR and IIR digital filter design, discrete Fourier transform, FFT, and random sequences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; MAT 342 or 343 with C or better OR Visiting University Student
EEE	425	Digital Systems and Circuits	Digital logic gate analysis and design. Propagation delay times, fan out, power dissipation, noise margins. Design of MOS and bipolar logic families, including NMOS, CMOS, standard and advanced TTL, ECL, and BiCMOS. Inverter, combinational and sequential logic circuit design, MOS memories, VLSI circuits. Computer simulations using PSPICE.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	433	Analog Integrated Circuits	Analysis, design, and applications of modern analog circuits using integrated bipolar and field-effect transistor technologies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	434	Quantum Mechanics Engineers	Angular momentum, wave packets, Schroedinger wave equation, probability, problems in one dimension, principles of wave mechanics, scattering, tunneling, central forces, angular momentum, hydrogen atom, perturbation theory, variational techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	435	Fundamentals of CMOS & MEMS	Introduces basic CMOS processing and fabrication tools. Covers the fundamentals of thermal oxidation, CVD, implantation, diffusion, and process integration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	436	Fund of Solid-State Devices	Semiconductor fundamentals, pn junctions, metal-semiconductor contacts, metal-oxide-semiconductor capacitors and field-effect transistors, bipolar junction transistors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	437	Optoelectronics	Basic operating principles of various types of optoelectronic devices that play important roles in commercial and communication electronics; light-emitting diodes, injection lasers, and photodetectors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352
EEE	439	Semiconduct Facil/Cleanrm Prac	Microcontamination, controlled environments, cleanroom layout and systems, modeling, codes and legislation, ultrapure water, production materials, personnel and operations, hazard management, advanced concepts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	443	Antennas Wireless Communicatns	Fundamental parameters; radiation integrals; wireless systems; wire, loop, and microstrip antennas; antenna arrays; smart antennas; ground effects; multipath.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341
EEE	445	Microwaves	Waveguides; circuit theory for waveguiding systems; microwave devices, systems, and energy sources; striplines and microstrips; impedance matching transformers; measurements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 (EEE 340) OR Visiting University Student

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EEE	448	Fiber Optics	Principles of fiber-optic communications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 OR Visiting University Student
EEE	455	Communication Systems	Signal analysis techniques applied to the operation of electrical communication systems. Introduction to and overview of modern digital and analog communications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 350 OR Visiting University Student
EEE	459	Communication Networks	Fundamentals of communication networks. Study of Seven-Layer OSI model. Focus on functionality and performance of protocols used in communication networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; Corequisite(s): EEE 350 OR Visiting University Student
EEE	460	Nuclear Power Engineering	Radioactivity and decay. Radiation interactions and dose. Nuclear reaction, fission and fusion theory. Fission reactors, four factor formula, moderation. Nuclear power, TMI, Chernobyl. Nuclear fuel cycle.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114 or 116; MAT 274 or 275 with C or better; PHY 241 or 361 with C or better
EEE	463	Electrical Power Plants	Generation of electric power using fossil, nuclear, and renewable, including solar, geothermal, wind, hydroelectric, biomass and ocean, energy sources. Power plant thermal cycle analysis. Cogeneration and combined cycles. Economics, operations, and design of electric power stations. Energy storage.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE or BHSE undergraduate student; CHM 114 or 116; MAE 241 or PHY 241 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
EEE	465	Photovoltaic Energy Conversion	Photovoltaics for production of electricity from solar energy. The grand energy challenge. Solar radiation and utilization. Fundamentals of semiconductors for photovoltaics: crystal structures, band theory, doping, carrier statistics, optical absorption, and p-n junctions. Principles of solar cells including loss mechanisms and design principles. Current solar cell technologies. Manufacturing of silicon solar cells. Solar modules, arrays and systems. Economic analysis of solar photovoltaic systems. Terawatt-scale deployment of solar cells.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352; Credit is allowed for only EEE 465 or 498: Solar Energy
EEE	470	Electric Power Devices	Analyzes devices used for short circuit protection, including circuit breakers, relays, and current and voltage transducers. Protection against switching and lightning over voltages. Insulation coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360 OR Visiting University Student
EEE	471	Power System Analysis	Review of transmission line parameter calculation. Zero sequence impedance, symmetrical components for fault analysis, short circuit calculation, review of power flow analysis, power system stability, and power system control concepts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	472	Power Electronics & Power Mgmt	Principles of switch mode power conversion, analysis, design and control of dc-dc converters, PWM rectifiers and inverters, power management, power electronics applications in information technology, renewable energy systems, motion control and lighting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	473	Electrical Machinery	Operating principles, modeling and speed control of DC, brushless DC, and AC machines; power converters for DC and AC motors drives.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	480	Feedback Systems	Analysis and design of linear feedback systems. Frequency response and root locus techniques, series compensation, and state variable feedback.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 or MAE 318 OR Visiting University Student
EEE	481	Computer-Controlled Systems	Implements computer-based, embedded, control systems using MATLAB xPC Target toolbox. Small-scale, representative projects demonstrate theoretical issues and provide hands-on expertise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 and EEE 230/CSE 230, or MAE 318 OR Visiting University Student
EEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	488	Senior Design Laboratory I	Design process: research, concept, feasibility, simulation, specifications, benchmarking, and proposal generation. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergrad student; ENG 102, 105 or 108, EEE 241; EEE 334; EEE 350; three courses from the following list: EEE 304, 333, 335, 341, 352 or 360 OR Visiting University Student

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EEE	489	Senior Design Laboratory II	Implement, evaluate, and document EEE 488 design. Social, economic, and safety considerations. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE senior or post-bacc undergraduate student; EEE 488 OR Visiting University Student
EEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6		Prerequisite(s): Barrett Honors Electrical Engineering BSE senior
EEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors Electrical Engineering BSE senior
EEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 433
EEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-7		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-3		Prerequisite(s): Electrical Engineering BSE senior
EEE	505	Time-Frequency Signal Process	Joint time-frequency analysis of time-varying signals and systems; linear and quadratic time-frequency representations; applications in current areas of signal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	506	Digital Spectral Analysis	Principles and applications of digital spectral analysis, least squares, random sequences, parametric, and nonparametric methods for spectral estimation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	507	Multidimension Signal Process	Processing and representation of multidimensional signals. Design of systems for processing multidimensional data. Introduces image and array processing issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	508	Digital Image&Video Proc & Cmp	Fundamentals of digital image perception, representation, processing, and compression. Emphasizes image coding techniques. Signals include still pictures and motion video.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	509	DSP Algorithms & Software	Linear systems review, digital filter design, software aspects, DFT, FFT, random signals, programming aspects, applications projects, MATLAB and Java simulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	510	Multimedia Signal Processing	Speech/audio coding algorithms. LPC, CELP, MPEG, Cell phone, DTV, cinema, and surround sound standards. MPEG/JPEG introduction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	511	Artificial Neural Computation	Networks for computation, learning function representations from data, learning algorithms and analysis, function approximation and information representation by networks, applications in control systems and signal analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	512	Sys Level Design Hetero Archs	In-depth introduction to multicore computing architectures ranging from low-power multiprocessor systems-on-chip (MpSoC) to high-performance chip-multiprocessors (CMP). Fundamental topics on modeling, analysis, and optimization of multicore systems; particular attention on low-power and communication-centric design of multicore systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 512 or EEE 598 (System-Level Design for Multicore Architectures)

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EEE	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analys)
EEE	517	Sensors and Machine Learning	Integrated sensor devices and algorithms; microphone arrays, chemical sensing, mobile sensing, accelerometers and magnetometers, nanopore sensors, and flexible and patch sensors. Signal pre-processing for sensors; feature extraction; image sensing; voice processing; filters; frequency analysis; autocorrelation; principal components; k means algorithm; sensor fusion; neural nets; applications to health, security and mobile systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 517 or EEE 598 (Sensor & Machine Learning Apps)
EEE	521	Low-Power Bioelectronics	Begins with fundamental theory and techniques for low-power analog circuit design especially subthreshold CMOS and BJT circuits (e.g., translinear circuits), then moves to biomedical applications and bio-inspired systems focused upon neuromorphic circuits. Also touches on concepts such as wireless challenges for implants, energy harvesting and electrochemistry. Students have the opportunity to have their final projects fabricated in a commercial CMOS process.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 521 or EEE 598 (Low Power Bioelectronics)
EEE	522	RF Test	Covers current production test schemes for mixed-signal and RF circuits, the economics of production test, and recent research techniques in reducing the production test cost. Prior knowledge of Matlab is necessary to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	523	Adv Analog Integrated Circuits	Analysis and design of analog integrated circuits: analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	524	Comm Transceiver Circuit Desgn	Communication transceivers and radio frequency system design; fundamentals of transceivers circuits; RF, IF, mixers, filters, frequency synthesizers, receivers, CAD tools, and lab work on IC design stations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	525	VLSI Design	Analysis and design of Very Large Scale Integrated (VLSI) circuits. Physics of small devices, fabrication, regular structures, and system timing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	526	VLSI Architectures	High throughput and low-power VLSI architectures for signal processing. Array processor systems; data path design and optimization; memory design; high-level synthesis; low-power design at system level, algorithm level, and architecture level.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	527	Analog to Digital Converters	Detailed introduction to the design of Nyquist rate, CMOS analog to digital converters. Requires knowledge of analog integrated circuits (analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits) to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	528	Snsrs Intrnet Things&Wear Dev	Fundamentals, concepts of system analysis and design, and principles that apply to phase-locked loops (PPLs) used in frequency synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EEE	529	Semicondctr Memory Tech & Sys	Design of semiconductor memory technologies and systems, from the device cell structures to the array and architecture design, with emphasis on the industry trends and cutting-edge technologies including SRAM, DRAM and FLASH technologies and emerging memory technologies such as STT-MRAM, PDRAM and RRAM.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Comp & Energy Engr (ECEE), CIDSE, POLY, SBHSE, SEMTE, or SSEBE graduate student; Credit is allowed for only EEE 529 or EEE 598 (Semicondctr Memory Tech & Sys) or CEN/CSE 591 (Memory Sys: Device, Circuit & Architecture)
EEE	530	Advanced Silicon Processing	Thin films, CVD, oxidation, diffusion, ion-implantation for VLSI, metallization, silicides, advanced lithography, dry etching, rapid thermal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	531	Semiconductor Device Theory I	Transport and recombination theory, pn and Schottky barrier diodes, bipolar and junction field-effect transistors, and MOS capacitors and transistors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student

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EEE	532	Semiconductor Device Theory II	Advanced MOSFETs, charge-coupled devices, solar cells, photodetectors, light-emitting diodes, microwave devices, and modulation-doped structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	533	Semiconduct Process/Device Sim	Device simulation concepts: conventional and advanced MOS devices, bipolar transistors, heterostructures including HEMTs and solar cells. Process simulation concepts: oxidation, ion implantation, diffusion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	534	Semiconductor Transport	Carrier transport in semiconductors. Hall effect, high electric field, Boltzmann equation, correlation functions, and carrier-carrier interactions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	535	Electron Transport Nanostruct	Nanostructure physics and applications. 2-D electron systems, quantum wires and dots, ballistic transport, quantum interference, and single-electron tunneling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	536	Semiconductor Characterization	Measurement techniques for semiconductor materials and devices. Electrical, optical, physical, and chemical characterization methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	537	Semiconductor Optoelectronics	Electronic states in semiconductors, quantum theory of radiation, absorption processes, radiative processes, nonradiative processes, photoluminescence, and photonic devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	538	Optoelectronic Devices	Provides graduate students with detailed theory and practical knowledge of semiconductors materials and optoelectronic devices such as light-emitting diodes, lasers, photodetectors and solar cells. Also discusses the applications of these devices. Offers not only classroom lectures but also demonstration of real-world experiments in research laboratories at ASU.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 538 or EEE 598 (Optoelectronic Devices)
EEE	539	Intro Solid-State Electronics	Crystal lattices, reciprocal lattices, quantum statistics, lattice dynamics, equilibrium, and nonequilibrium processes in semiconductors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	540	Fast Comput Electromagnetics	Method of moments, finite difference time-domain, finite element methods implemented using fast algorithms (wavelets, FMM, Nystrom) to gain high efficiency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	541	Electromag Fields/Guided Waves	Polarization and magnetization; dielectric, conducting, anisotropic, and semiconducting media; duality, uniqueness, and image theory; plane wave functions, waveguides, resonators, and surface guided waves.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	543	Antenna Analysis and Design	Impedances, broadband antennas, frequency independent antennas, miniaturization, aperture antennas, horns, reflectors, lens antennas, and continuous sources design techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	544	High-Resolution Radar	Fundamentals; wideband coherent design, waveforms, and processing; stepped frequency; synthetic aperture radar (SAR); inverse synthetic aperture radar (ISAR); imaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	545	Microwave Circuit Design	Analysis and design of microwave attenuators, in-phase and quadrature-phase power dividers, magic tees, directional couplers, phase shifters, DC blocks, and equalizers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	546	Advanced Fiber Optics	Theory of propagation in fibers, couplers and connectors, distribution networks, modulation, noise and detection, system design, and fiber sensors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student

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EEE	547	Microwave SS Circuit Design I	Applies semiconductor characteristics to practical design of microwave mixers, detectors, limiters, switches, attenuators, multipliers, phase shifters, and amplifiers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	548	Coherent Optics	Diffraction, lenses, optical processing, holography, electro-optics, and lasers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	550	Transform Theory/Applications	Introduces abstract integration, function spaces, and complex analysis in the context of integral transform theory. Applications to signal analysis, communication theory, and system theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	551	Information Theory	Entropy and mutual information, source and channel coding theorems, applications for communication and signal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	552	Digital Communications	Complex signal theory, digital modulation, optimal coherent and incoherent receivers, channel codes, coded modulation, Viterbi algorithm.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	553	Coding and Cryptography	Introduces algebra, block and convolutional codes, decoding algorithms, turbo codes, coded modulation, private and public key cryptography.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	554	Random Signal Theory	Applies statistical techniques to the representation and analysis of electrical signals and to communications systems analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	556	Detection/Estimation Theory	Combines the classical techniques of statistical inference and the random process characterization of communication, radar, and other modern data processing systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	557	Broadband Networks	Physics of wireless and optical communications. Broadband multiplexing and switching methods. Blocking and queuing analysis. Network optimization, routing, and economics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	558	Wireless Communications	Cellular systems, path loss, multipath fading channels, modulation and signaling for wireless, diversity, equalization coding, spread spectrum, TDMA/FDMA/CDMA.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	559	Wireless Networks	Design principles of cellular networks. Multiple access control protocols for wireless systems. Wireless routing and TCP/IP. Mobile management. Call admission control and resource allocation (e.g., power control and rate control). Wireless security. Future-generation wireless networks. A previous course in random signal theory is required to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student
EEE	562	Nuclear Reactor Theory&Design	Principles of neutron chain reacting systems. Neutron diffusion and moderation. One-, two-, and multigroup diffusion equation solution methods. Heterogeneous reactors. Nuclear fuel steady-state performance. Core thermal-hydraulics. Core thermal design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	563	Nuclear Rx Dynamics&Diagnostics	Time-dependent solution to neutron diffusion equation. Reactor kinetics and reactivity changes. Dynamics, stability, and control of reactor systems. Modeling neutronic and thermal processes. System characterization in time and frequency domains. Reactor surveillance and diagnostics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	564	Interdisciplin Nuclear Pwr Ops	Nuclear power plant systems. Studies interrelationship and propagation of effects that systems and design changes have on one another, especially in relation to nuclear power plant safety and operations. Case studies and design projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student

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EEE	565	Solar Cells	Introduction to the generation and utilization of electricity from solar energy. Exploration of the science and engineering of direct conversion (photovoltaics), including the design, fabrication, and operation of solar cells, and the construction and performance of solar cell modules. Prior knowledge of properties of electronic materials is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	566	Adv Device Modeling & Simulatn	Understanding semi-classical and quantum transport theory in conjunction with device simulations at the nanoscale. Prior knowledge of semiconductor device theory, quantum mechanics and classical semiconductor device simulation is necessary to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 566 or EEE 598 (Advanced Device Modeling)
EEE	571	Power System Transients	Simple switching transients. Transient analysis by deduction. Damping of transients. Capacitor and reactor switching. Transient recovery voltage. Travelling waves on transmission lines. Lightning. Protection of equipment against transient overvoltages. Introduces computer analysis of transients.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	572	Advanced Power Electronics	Analyzes device operation, including thyristors, gate-turn-off thyristors, and transistors. Design of rectifier and inverter circuits. Applications such as variable speed drives, HVDC, motor control, and uninterruptable power supplies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	573	Electric Power Quality	Sinusoidal waveshape maintenance; study of momentary events, power system harmonics, instrumentation, filters, power conditioners, and other power quality enhancement methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	574	Computer Solution of Power Sys	Algorithms for digital computation for the Newton and fast-decoupled power flow problem, and fault analysis. Sparse matrix and vector programming methods, creation of elimination trees, network equalencing, solution of the least squares problem, introduction to state estimation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	575	Power System Stability	Dynamic performance of power systems with emphasis on stability. Modeling of system components and control equipment. Analysis of the dynamic behavior of the system in response to small and large disturbances. Knowledge of EEE470, 471 and 473 (or equivalents) is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	576	Power System Dynamics	Dynamic performance of power systems with emphasis on control. Modeling of control equipment. FACTS devices, wind generators, and nonlinear loads. Design of power system stabilizers. Prior knowledge of electric power devices, power system analysis, and electrical machinery is required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student
EEE	577	Power Engr Operations/Planning	Economic dispatch, unit commitment, dynamic programming, power system planning and operation, control, generation modeling, AGC, and power production.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	579	Power Transmission/Distributn	High-voltage transmission line electric design; conductors, corona, RI and TV noise, insulators, clearances. DC characteristic, feeders voltage drop, and capacitors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	581	Filtering Stochastic Processes	Modeling, estimation, and filtering of stochastic processes, with emphasis on the Kalman filter and its applications in signal processing and control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	582	Linear System Theory	Controllability, observability, and realization theory for multivariable continuous time systems. Stabilization and asymptotic state estimation. Disturbance decoupling, noninteracting control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student

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EEE	585	Security & Privacy Network Sys	Comprehensive understanding of critical cyber security and privacy threats as well as corresponding solutions in emerging wireless networks, mobile systems, social networks, Internet-of-Things, critical infrastructures, cloud computing, big data analytics, wearable and edge computing, and mobile health. Requires prior knowledge of communications systems or computer networking to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Elect, Comp and Energy Engr (ECEE) or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 585 or EEE 598 (Adv Topics in Wireless & Internet Security) or EEE 598 (Selected Topics in Network Security)
EEE	586	Nonlinear Control Systems	Stability theory, including phase-plane, describing function, Liapunov's method, and frequency domain criteria for continuous and discrete, nonlinear, and time-varying systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	587	Optimal Control	Optimal control of systems. Calculus of variations, dynamic programming, linear quadratic regulator, numerical methods, and Pontryagin's principle.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	588	Design Multivari Control Sys	Practical tools for designing robust MIMO controllers. State feedback and estimation, model-based compensators, MIMO design methodologies, CAD, real-world applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	589	Linear Algebra & Cnvx Opt	Linear algebra and convex optimization. Vector spaces, matrix algebra, linear programming, Lagrange multipliers, Karush-Kuhn-Tucker (KKT) conditions, duality theory and algorithms for convex optimization. Newton's method, gradient and steepest descent methods. Algorithms for unconstrained, equality constrained and inequality constrained problems, which include interior point methods. Applications to approximation and data fitting and some geometric problems. Applications to signal processing, communications and control systems. Background in linear algebra necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
EEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD students
EEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	606	Adaptive Signal Processing	Principles and applications of adaptive signal processing, adaptive linear combiner, Wiener least-squares solution, gradient search, performance surfaces, LMS/RLS algorithms, block time/frequency domain LMS.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
EEE	607	Speech Coding Multimedia Comm	Speech and audio coding algorithms for applications in wireless communications and multimedia computing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	625	Advanced VLSI Design	Practical industrial techniques, circuits, and architectures appropriate to high-performance and low-power digital VLSI designs such as microprocessors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	627	Oversampling Sigma-Delta Data	Introduces design and analysis of sigma delta oversampled data converters from an IC design perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	641	Adv Electromagnet Field Theory	Cylindrical wave functions, waveguides, and resonators; spherical wave functions and resonators; scattering from planar, cylindrical, and spherical surfaces; Green's functions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	643	Adv Topics Electromagnet Rad	High-frequency asymptotic techniques, geometrical and physical theories of diffraction (GTD and PTD), moment method (MM), radar cross section (RCS) prediction, Fourier transforms in radiation, and synthesis methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	686	Adaptive Control	Main topics covered: adaptive identification, convergence, parametric models, performance and robustness properties of adaptive controllers, persistence of excitation, and stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD student or Master of Engineering student
EEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	731	Advanced MOS Devices	Threshold voltage, subthreshold current, scaling, small geometry effects, hot electrons, and alternative structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering PhD students
EEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student

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EEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, POLY, SBHSE, SEMTE or SSEBE graduate student
EET	406	Control System Technology	Control system components, analysis of feedback control systems, stability, performance, and application.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3-4		Pre-requisites: EST 310; MAT 266; Credit for EET 506 or EET 406
EET	408	Digital Real-Time Control	Analysis, simulation, and design of discrete systems. Approach taken in this class begins with the analysis, simulation and design of a continuous system, which yields an s-based, transfer function compensator. Then, this compensator is transformed into a z-based transfer function, which can be realized with a difference equation in a microcontroller.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EET 406; Credit is allowed for only EET 408 or 494 (Digital Realtime Control)
EET	430	Instrumentation & Measurement	Instrumentation and measurement techniques, sensors operating principles. Signal and error analysis. Signal conditioning and data acquisition.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only EET 430 or 530
EET	506	System Dynamics and Control	Time, frequency, and transform domain analysis of physical systems. Transfer function analysis of feedback control systems performance and stability. Compensation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EET 406 or EET 506
EET	508	Digital Real-Time Control	Sample data control techniques and applications to process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EET	530	Electronic Test Syst & Apps	Analysis, design, and application of electronic test equipment, test systems, specifications, and documentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only EET 430 or EET 530
EGR	101	Found of Eng Design Proj I	Introduces engineering as a profession, critical thinking in engineering design and modeling, team dynamics, engineering communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): first-time freshman or maximum 45 hours OR Visiting University Student
EGR	102	Found of Eng Design Proj II	Development and experimental verification of engineering models, engineering design, data acquisition, critical analysis of data, introduction to CADD, engineering communications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 101; first-time freshman or maximum 45 hours; Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed; MAT 170 or higher OR Visiting University Student
EGR	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
EGR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	201	Use-Inspired Design Project I	Design, professionalism, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 102; MAT 265 or 270 with C or better OR Visiting University Student
EGR	202	Use-Inspired Design Project II	Design, problem solving, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 104 or TWC 104 with C or better; EGR 201 with C or better OR Visiting University Student
EGR	216	EGR Electrical Fundamentals	Introduces modeling of electrical systems using mathematical and scientific principles. Covers electrical circuit analysis techniques including Kirchhoff's and Ohm's laws, series and parallel circuit elements, equivalent elements and circuits, and nodal analysis. These techniques are developed for DC, AC, and transient conditions. Also introduces the basic structure of a modern electronic measurement system and relates this structure to measurement accuracy, precision and resolution.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only EGR 216 or EGR 294 (Engineering Fundamentals I) OR Visiting University Student

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EGR	217	Engr Mechanics Fundamentals	Provides a foundation in the theory and principles of statics and dynamics. Examines the effect of forces acting on particles and rigid bodies. Extensively uses vector mechanics. Statics addresses the topics of equilibrium in two and three dimensions, to include distributed loads, trusses, frames, friction and the moment of inertia. Dynamics addresses kinematics and kinetics of particles.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better OR Visiting University Student
EGR	218	Materials and Manufact Process	Applies material properties and manufacturing processes to the design and fabrication of engineered artifacts.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 or 114 with C or better OR Visiting University Student
EGR	219	Computational Modeling Eng Sys	Introduces computing that develops software to find solutions to engineering problems. Students write and document code to solve problems in data acquisition, modeling of physical systems, and optimization.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 266 or 271 with C or better; Pre- or corequisite(s): MAT 274 or 275 OR Visiting University Student
EGR	240	CADD and Solid Modeling	Uses 3-D solid modeling software to model mechanical parts and produce valid engineering drawings, including use of geometric dimensioning and tolerancing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		
EGR	280	Engineering Statistics	Applications-oriented introduction to statistics with computer-based experience using statistical software for formulating and solving engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Prerequisite(s): MAT 265 or 270 with C or better OR Visiting University Student
EGR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	303	Mechanical Systems Project I	Analyze, design, implement and characterize a mechanical system through an in-depth mechanical system design project. Project includes modeling, analysis and measurement of the dynamic behavior of the mechanical system. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 218 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	304	Embedded Sys Design Project I	Design, implement and debug an embedded electromechanical system through an in-depth design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	305	Robotics Systems Project I	Analyze, design, implement and debug a robotic electromechanical system through an in-depth robotic system design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better
EGR	306	Automotive Systems Project I	Analyze, design, implement and verify an automotive system through an in-depth design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	307	Humanitarian Eng Project I	Analyzes, designs, implements and characterizes an engineered system that addresses a humanitarian objective. Project includes modeling, analysis and measurement of the behavior of the system. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing OR Visiting University Student
EGR	313	Mechanical Systems Project II	Applies design principles to conceptualize, implement and characterize a fluid and/or thermodynamic system in a project setting. Project emphasizes communication with project stakeholders; applying an appropriate design approach in the context of a fluid and/or thermodynamic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 303 with C or better; EGR 340 with C or better OR Visiting University Student
EGR	314	Embedded Sys Design Project II	Applies design principles to conceptualize, implement and characterize an embedded electromechanical system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an embedded system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 304 with C or better
EGR	315	Robotic Systems Project II	Applies design principles to conceptualize, implement and characterize an electromechanical robotic system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of a robotic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 305 with C or better; EGR 455 with C or better

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EGR	316	Automotive Systems Project II	Applies design principles to conceptualize, implement and characterize an automotive system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an automotive system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 306 with C or better
EGR	317	Humanitarian Eng Project II	Applies design principles to conceptualize, implement and characterize an engineered system that addresses a humanitarian objective in a project setting. Project emphasizes communication with project stakeholders, applying an appropriate design approach, thinking critically in developing system specifications and evaluating a prototype relative to these specifications, and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing
EGR	321	Water Resource Systems	Fundamentals of water supply and surface water hydrology in the context of the engineering, design and analysis of water resources systems. Places particular emphasis on those aspects of water systems that apply in the context of the developing world as well as in the context of environmentally sustainable systems. Course delivery is designed for engineering students with a broad understanding of engineering fundamentals but without specialist civil engineering knowledge.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better
EGR	325	Water and Wastewater Treatment	Essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies. Provides a fundamental basis for understanding sustainable water and wastewater treatment processes and their design considerations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework to strengthen and emphasize importance of adequate practices used in operation and design of engineered water and wastewater treatment systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 with C or better; EGR 321 with C or better
EGR	330	Design of Electrical Systems	Overview of electrical system architectures and components used in design of smart electrical and electromechanical systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	334	Analog-Digital Interface	Signal processing and operational tools that lie between sensors and digital data processors developed from a system perspective. Includes selection, deployment and analysis of sensors, analog signal processors and converters as well as their appropriate power supplies and the impact of all these components on system performance and cost. Uses experimental and simulation tools to demonstrate typical-use cases for medical, military, industrial and consumer applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better; EGR 330 with C or better OR Visiting University Student
EGR	338	Microcontrollers in Smart Sys	Microcontroller implementation of smart systems. Microcontrollers applied to control dynamic systems, including the interface with sensors and actuators as well as developing simple open- and closed-loop control laws.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	340	Engineering Thermo-Fluids I	First and second laws of thermodynamics, systems, processes, equations of state, property tables. Fluid statics, conservation of momentum, Bernoulli's equation, applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
EGR	343	Mechanics of Solid Materials	Studies strength and physical performance, such as deformations and load-carrying capacity, of natural and artificial solid structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
EGR	360	Concepts in Auto Engineering	Fundamental engineering principles as they apply to the design of ground vehicles used for the transportation of individuals or materials.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202; Credit is allowed for only EGR 360 or EGR 394 (Intro to Concepts in Automotive Engineering)

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EGR	363	Auto Powertrain & Thermal Sys	Internal combustion engine (ICE) design in the context of automotive systems and heat management in vehicle systems, including thermal design of engine and transmission cooling systems. Operating characteristics and efficiencies of the ICE, terminology and abbreviations used in the automotive industry, contemporary fuels and the latest hybrid technology, CAFE standards and EPA vehicle emissions standards, lubrication systems and fluids appropriate for a given design, and current and future standards requirements.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): EGR 340 with C or better if completed
EGR	370	Welding Survey	Theory and practical application of the most widely used industrial welding processes; introductory welding, fundamental welding metallurgy, weldment design and weld cost estimating; lab experiences using SMAW, GTAW, GMAW, FCAW, RSW, SW, OFC, OAW, PAC, and brazing. Aligns with the American Welding Society (AWS) SENSE standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
EGR	371	Best Practice Humanitarian Eng	Technological and process-based best practices for engineering students to gain applied competence in low-cost and low-tech appropriate methods and technologies for small-scale technical problems in local and international humanitarian development contexts.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering major; junior or senior standing
EGR	380	Advanced CADD & Solid Modeling	Advanced techniques and practices of solid modeling and drafting, including motion, Finite Element Analysis (FEA), and sheet metal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 240; Credit is allowed for only EGR 380 or EGR 394 (Advanced CADD & Solid Modeling) OR Visiting University Student
EGR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	401	Professional Design Project I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Prerequisite(s): EGR 313, 314, 315, or 316 with C or better OR MFG 308 with C or better; MFG 318 with C or better OR Visiting University Student
EGR	402	Professional Design Project II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 401 with C or better taken within one previous term OR Visiting University Student
EGR	425	Unit Treatment Tech and Sys	Addresses fundamental concepts of unit treatment technologies and the scientific and engineering principles that govern the proper design, operation and management of these systems. Course is divided into two overlapping major categories of unit treatment technologies: air-pollution controls and soils/groundwater remediation. Enhances understanding of the unit treatment technologies by reviews of dimensional analysis, mass transport mechanisms, mass balances, modeling, kinetics and reactors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better
EGR	426	Integrated Solid Waste Sys	Addresses the fundamental concepts of solid waste, pathways and transformation processes following the from cradle-to-grave approach. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes describing the present solid waste systems as an integrative set of functional units. Considers physical, chemical and biological transformations of the solid waste, together with the existing technologies and practices for management, treatment and disposal of the solid waste. Includes a specific overview of sustainable solid waste practices such as waste minimization, pollution prevention, reuse and reclamation, together with current domestic and foreign regulations. Addresses planning and design of solid waste operations and facilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better
EGR	427	Princ of Hazard Waste & Mat	Trains future environmental engineers and professionals in fundamental hazardous waste and materials concepts. Addresses regulatory requirements; materials hazard communication; material safety concepts; types of hazardous waste/materials (chemical, radioactive, and infectious); risk assessment and routes of exposure; personal protective equipment; prudent practices; treatment; storage and disposal of hazardous waste/materials through the lens of the cradle-to-grave concept. Gains knowledge about the hazardous waste enforcement processes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better

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EGR	430	Design Fab Arch Elect Devices	Comprehensive introduction to the design, operation, production and application of the most common semiconductor devices and categories of integrated circuit. Demonstrates the close interaction among materials, semiconductor physics and circuit performance, especially in terms of the applications and economics of digital systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better OR Visiting University Student
EGR	431	Power Management	Devices and techniques to supply and manage power in electrical systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
EGR	433	Transforms & Systems Modeling	State-space and transform-domain modeling and analysis of electrical and electromechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 455 with C or better; MAT 274 or 275 with C or better; Pre- or corequisite(s): MAT 342 or 343
EGR	438	RF Systems	Applies fundamental principles of electromagnetics to design and analyze engineered RF systems and applications. Introduces and describes transmission lines, Smith Charts, s-parameters, waves in free space, reflection and refraction and their use in engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 331; Credit is allowed for only EGR 438 or EGR 494 (Fundamentals of RF)
EGR	444	Engineering Design	Applies fundamentals of mechanics in analysis and synthesis of machine components and systems, with emphasis on stress and failure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 343 with C or better OR Visiting University Student
EGR	445	Mechanical Engineering Systems	Design and modeling of multicomponent electromechanical systems. Applications of computers, controllers, electronics using system hardware and software development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 219 with C or better; EGR 444 with C or better
EGR	455	Robotic Systems I	Analysis and design of robotic systems focusing on kinematics, dynamics, coordinate transformations and modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	456	Robotic Systems II	Design of robotic systems focusing on dynamics, modeling and controlling a robot.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 455 with C or better
EGR	463	Vehicle Elect Sys & Hybrid Sys	Basic theory and operation of hybrid electric drive systems of motor vehicles. Covers fundamentals of next generation electrification including: batteries technology, charging, power electronic operation. Emphasizes the principals of HEV energy management strategies and HEV modeling fundamentals.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 363 with C or better OR Visiting University Student
EGR	465	Ground Vehicle Dynamics	Basic understanding of vehicle dynamics principles and a sufficient knowledge to analyze vehicle dynamic performance and associated chassis system design concepts. Understanding of various dynamical equations of motion governing vehicle behavior as well as computer simulation.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 363 with C or better OR Visiting University Student
EGR	475	Alternative Energy	Covers basic principles, thermodynamics and economics of alternative energy conversion technologies including solar photovoltaics, concentrating solar, wind, biomass, nuclear, fuel cells and energy storage. Briefly discusses conventional heat and power systems as they pertain to alternative energy integration. Introduces operating characteristics of renewable energy technologies through simulation and then reinforces through hands-on demonstrations and experiments with renewable energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, MAE 240, or PHY 151 with C or better OR Visiting University Student
EGR	476	Microgrid Design and Operation	Design, modeling, integration, operation and maintenance of microgrids. Simulation-based design is coupled with hands-on integration to provide a comprehensive approach to microgrid systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, MAE 240, or PHY 151 with C or better
EGR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
EGR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6		Prerequisite(s): Barrett Honors student
EGR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6	L	Prerequisite(s): Barrett Honors student
EGR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		

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EGR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	520	Engineering Analysis I	Analytical methods for evaluation of engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	521	Engineering Analysis II	Mathematical techniques for developing solutions of engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 520; Credit is allowed for only EGR 521 or EGR 598 (Engineering Analysis II)
EGR	522	Stats Qulty Cntrl Manufact	Seven QC tools and control charts for data analysis and interpretation; Process capability, 6-Sigma, Lean Manufacturing, Quality system, Case study.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 522 or EGR 598 (Statistics for Engineers)
EGR	523	Finite Element Mod & Analysis	Analyzes machine elements, frames and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy. Introduces the fundamentals of finite element analysis as well as providing hands-on experience using finite element software to model, analyze and design structures.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 523 or EGR 598 (Finite Element Modeling & Analysis)
EGR	525	Lean Systems	Creates a framework and model of lean engineering and a methodology for applying lean practices to systems engineering as a basis for lean product development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	530	Principles System Engineering	Engineering is increasingly about complex systems. Addresses scale, scope and complexity increase that engineers need to consider to bring together technical and social issues in a highly integrated way as they design flexible, adaptable, robust systems that can be easily modified and reconfigured to satisfy changing requirements and new technological opportunities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; EGR 520
EGR	535	Engineer Innovation/Entrepren	Provides knowledge of innovation and entrepreneurship practices and experience in the application of engineering systems innovation within an entrepreneurial setting of driving a product or process to successful launch. Includes protection of intellectual property and contractual relations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	550	Mechatronic Systems	Presents a clear and comprehensive approach to the area of mechatronic systems, including the sensors, actuators, microcontrollers and applications which are found at the heart of everyday products and devices. Provides a systems-level approach to integrating these elements into a functioning device.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student
EGR	555	Mechatronics Device Innovation	Project-based course on the design of mechatronic devices to address needs identified by hospital-based clinicians. Students work in teams with physicians to develop a novel mechatronic device while in parallel an entrepreneurial mindset is fostered. The design process includes: needs finding; problem identification; prior art searches; strategy and concept generation; estimation; sketching; sketch modeling; machine elements, ergonomics and prototyping. Emphasizes the development of creative designs that is motivated by analytical models. Also includes lectures on specific aspects pertinent to novel devices including intellectual property, marketing, licensing and startups and lean launchpad for startups, provided by Skysong Innovations. Significant communication component as students present ideas in class and at an industry forum. Students also write a publication quality final paper, which they are encouraged to submit to a conference or journal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only EGR 494 (Mechatronics Device Innovation) or EGR 555 or EGR 598 (Mechatronics Device Innovation)
EGR	556	System Control & Optimization	Topics include state-space models, Lyapunov stability, controllability and observability, optimization and optimal control, and nonlinear systems and control. Includes both theories and real-world engineering examples/demos, and students apply the advanced control system approaches to self-selected course projects. Prior knowledge in classical linear control theory is necessary to be successful in this course.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506

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EGR	557	Foldable Robotics	Organized around new types of robots being developed in research labs and industry across the country. These devices are designed and built using layered, flat sheets of a wide variety of materials, and folded up to create both form and motion. Studies these devices from initial prototype and design through implementation and optimization, with a focus on application-specific projects which seek to solve problems of cost, parallelism, complexity and time with a relatively fast and easy prototyping method. Allows students to delve deeper into the analytical problems associated with these devices, in topics such as design, manufacturing, dynamics and simulation, optimization, kinematics and motion, and stiffness analysis. Assumes familiarity with programming fundamentals, ideally scripted languages like Python or Matlab, with linear algebra, differential equations, calculus, trigonometry, vectors.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 557 or EGR 598 (Foldable Robotics) or EGR 598 (Laminate Robotics)
EGR	560	Vehicle Dynamics and Control	Covers modeling, estimation, control and optimization of a typical vehicle (sub)system dynamics. Recent advances in automotive technology, such as vehicle electrification and automated/connected driving, further complicate vehicle (sub)systems as nonlinear multi-input-multi-output systems with unmodeled dynamics, structure uncertainties and external disturbances. Thus, effective vehicle control design requires to sophisticatedly combine advanced control theory with knowledge of vehicle characteristics. To achieve this goal, the course introduces a variety of modeling, advanced control, estimation and optimization techniques for typical vehicle (sub)systems. Discusses applications of control theories to various vehicle (sub)system dynamics through examples inspired by pertinent research projects. Extensively utilizes co-simulation between Matlab/Simulink and CarSim® for vehicle dynamics analysis, vehicle control design and verification.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only EGR 560 or EGR 598 (Vehicle Dynamics and Control)
EGR	565	Qualitative Meth in Eng Ed	Provides a deep, empirical exposure to interpretive research methods in engineering education research.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	572	Quant Meth in Eng Ed Res	Specific quantitative analysis techniques used in the field of engineering education, with special focus on instrument design, ANOVA and multiple regression. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	574	Eng Sys in Context	Provides a systems understanding of current trends in engineering education research to engage engineering education research graduate students with the latest developments in the field in which they will situate their research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	581	Sim. Manufac. Systems	Specific modeling and simulation tools used to understand and optimize manufacturing systems operations, with an emphasis on both model building and statistical interpretation of model output.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 581 or EGR 598 (Simulating Manufacturing Systems)
EGR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EGR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	602	Princ Ind Res	Practice of key components of independent research that include project planning, literature survey, interview, data collection and analysis, proposal development, technical writing and presentation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	608	Adv Simulation	Simulation has a central role in design, operation, optimization and evolution of complex systems. There are many tools but they have a common need for rigorous science/math, parameterized models and realistic validation. Uses and compares five common platforms.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	611	Complex Engineering Systems	Advanced concepts in design and evaluation of engineering systems: subsystems, systems architectures and seamless integration of subsystems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	671	Application of Qual Methods	Provides a deep, situated exposure to making and handling data in qualitative engineering education research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 565
EGR	673	App Quant Meth Eng Ed Res	Applies quantitative analysis techniques to an engineering education research project. Specific focus on data collection, instrument development, and ANOVA/regression analysis techniques. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 572
EGR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	504	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
ELL	515	Structured Engl Immersion (SEI)	Addresses the role of language and culture in teaching, program types, and specific SEI strategies for teaching English Language Learners (ELLs).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	516	Advanced SEI Methods for ELLs	More fully prepares teachers for linguistically diverse classrooms in which there are students learning through SEI methodology.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	501	Env Life Sci: Grand Challenge	Introduces first-year graduate students to a range of fields related to the Environmental Life Sciences graduate program. Co-instructed by an interdisciplinary faculty team, combines overview lectures and active discussion of current literature in the fields of inquiry. Culminates in synthetic collaborative research proposals on topics that foster transdisciplinary approaches to environmental life science questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
ELS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		

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ELS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	501	First Workshop and Orientation	Covers the four learning threads of the EMSL program: global context, strategic sustainability, communications and sustainability, and sustainability leadership. Students engage in meaningful group discussions, field trips and hands-on experiences directly tied to sustainability. Faculty, guest speakers and practitioners engage students in critical thought and apply sustainability theories into real-world scenarios.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): Executive Masters for Sustainability Leadership major
EMS	502	Global Context I	Examine global sustainability issues, determine materiality for their organization and practice communicating this information to critical stakeholders, i.e., translating the complex global context into compelling organizational realities. Applies tools to identify relevant risks and opportunities within their organizational context and investigates potential responses.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	503	Strategic Sustainability I	As a foundational course in strategic sustainability, focuses on sustainability as a strategic lens. Explores the interface among strategy, sustainability and ongoing success, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Identifies the different levels and implications of organizational maturity from a strategic sustainability perspective. Engages in systems mapping, planning and prioritizing methods, tools and techniques to identify and assess strategic opportunities.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	504	Comm & Sustainability I	This foundational course for professional communications aims to create chief sustainability storytellers. Helps students survey their internal communications environments, understand their target audiences and their unique customer centricities, and develop their voices through the use of proven story structures and techniques.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	505	Sustainability Leadership I	Focuses on emerging sustainability leadership. Students meld powerful and traditional leadership skills while challenging their prior knowledge with a multiple lens examination of leadership in a sustainability context. Provides a view of oneself to prepare students to better understand others. Students create the first phase of their personal plans for their unique needs and individual growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501

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EMS	506	Global Context II	Building on the skills gained in previous course work, explores proactive response strategies to material global sustainability challenges and opportunities. Examine how organizations can evolve from risk avoidance and compliance to innovation and thought leadership and explores what role they can play as sustainability leaders.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 502
EMS	507	Strategic Sustainability II	Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization both internally and externally. Students apply and integrate various science-based methods, used successfully by organizations large and small, for developing flexible action platforms for sustainable enterprises. Expects students to create a strategic vision and action plan for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 503
EMS	508	Immersive Experience	The EMSL program focuses on sustainability leadership and organizational design and development; students directly interact with numerous executive-level sustainability leaders and strategists who work in diverse organizations. During a week-long stay in Washington D.C., EMSL students also interact and work on teams with other members of their student cohort. The final assignment is development of a plan for a sustainability leadership capstone project.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership - Executive EMLS student; minimum 3.00 GPA
EMS	509	Comm & Sustainability II	Focuses on audiences and looks at how and where students are telling their stories of sustainability. Students map internal, external and target audiences/markets, strategize channels to reach them with their sustainability stories, and create multi-channel communications plans that incorporate modes of engagement for all audiences.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 504
EMS	510	Sustainability Leadership II	Challenges prior definitions of systems, responsibility and community from a sustainability and leadership perspective. Also provides a toolbox for leading with sustainability as a fundamental success platform. Provides information needed for students to better understand others, a necessary skill to be able to persuasively lead others to transform their organization into a sustainable enterprise. The focus shifts away from being centered around oneself and towards a focus on audience/stakeholders. Students continue to develop their personal leadership skills.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 505
EMS	511	Global Context III	Expands student perspectives beyond the needs of their organizations and considers what could be gained from industry and cross-industry collaborations. Assesses the implications of changes in leadership perspectives to their organizational contexts.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 506
EMS	512	Strategic Sustainability III	Focuses on expanding efforts for strategic planning and sustainable success beyond the bounds of a given enterprise through strategic collaboration, partnering, innovation and resource development. Applies strategic sustainability as a tool for developing synergistic collaborations and driving innovation for more sustainable enterprises and enterprise systems. Also develops sustainability-informed collaborative approaches to identify and garner resources for strategic imperatives.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 507
EMS	513	Comm & Sustainability III	Ignites the storyteller within as students learn to think like authors; craft their stories in scenes; and produce their presentations to entertain, educate and engage their audiences to move them to action. Reveals the students' transformation into courageous storytellers in presentations that combine their compelling narratives with captivating visual storytelling. Also creates social media editorial calendars to publish their stories to help express their thought leadership in sustainability online. By the end of this course, students learn how to own any room, from the boardroom and break room to the chat room and living room.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 509

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EMS	514	Sustainability Leadership III	Focuses on transformational leadership for global success, which requires students to identify and apply pathways to inspire, persuade and influence others to act toward a shared global vision. Some of the challenges that all future sustainability leaders face are future orientation; reframing organizations to be globally scalable yet locally focused; and redefining success and growth using sustainability as a success lens. These are just a few of the challenging tasks that sustainability leaders face. Importantly, sustainable leadership involves being an effective change leader, and this course provides the tools and learning needed to initiate and sustain change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 510
EMS	515	Capstone	In this online-only capstone course, students complete drafts of the major deliverables leading to the completion of their capstone. Throughout this process, faculty advise and provide feedback to students.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 513, 514
EMS	516	Capstone Course EMSL Students	Final and culminating course in the EMSL sequence. As such, via initiation of a sustainability project, students apply knowledge and skills learned in all preceding EMSL courses and, especially, what was learned during the "immersive" course taught in Washington D.C. The final project an ideation and proposal for a sustainability leadership project in a specific organization. Thus, students actually initiate that project, track and report its progress, and reflect on the experience going from plan to implementation.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 508
EMS	522	Mastering the Global Context	Leaders in any organizational context face an increasingly connected and transparent world where social and environmental issues must be weighed in everyday decisions, requiring increasingly more proactive response strategies to meet stakeholder expectations and adapt to market and policy dynamics. Explores iconic sustainability issues and trends and their impact on their organization, institutions, communities and stakeholders. Applies tools to identify the relevant risks and opportunities within their organizational context and evaluate and prioritize relevant solutions and management approaches.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508
EMS	523	Strategic Sust and Leadership	As sustainability becomes a core strategic goal of any organization, it impacts all aspects of the organization from informing risk and reward to the definitions and dimensions of innovation and overall success. Explores the interface between strategy and sustainability, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization. Explores and applies multiple sustainability-informed approaches, methods and tools to identify, assess and recommend strategic opportunities and adaptable action-pathways. Upon completion, students should be able to use strategic-sustainability knowledge to integrate and apply emerging sustainability approaches and to create strategic visions and action plans for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508
EMS	524	Sustainability Storytelling	Fundamentals of applying storytelling to sustainability. Leads students through the power of storytelling and effective communications in modern business, nonprofit and government settings. Discovers the why of storytelling, and the neuroscience and anthropology behind its effectiveness. Students learn about communication styles within leadership, their own personal communication strengths and weaknesses, discern the barriers to persuasive communication and storytelling within sustainability, how to remedy common communication missteps, and how to better understand and engage audiences by making them the "hero of the story." Uses digital tools to create and deliver compelling sustainability communications and presentations to any audience, anywhere to enhance the efficacy of sustainability leadership within and outside of an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508

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EMS	525	Transformative Leadership	Melds traditional leadership applications with powerful skills aimed to develop or reawaken innate desires to effect change. Challenges prior knowledge and assumptions with multiple lenses of leadership within a sustainability context while teaching how to lead others. Critically examines prior definitions of systems, responsibility and community from the perspective of sustainability and leadership and provides a toolbox for leading with sustainability as a fundamental success platform. Students create a personal leadership plan for their unique needs and personal growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508
EMS	586	Intro to MSL Capstone	Students select and prepare for their final capstone project in the MSL program. Students have an opportunity to present and discuss their concepts and plans with faculty and with other students in the cohort. Students also learn project management techniques for completing their capstone project.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability Leadership MSL student; EMS 502; EMS 503; EMS 504; EMS 505; SOS 501
EMS	587	MSL Capstone Prep	Students take their culminating capstone project from proposal to hands-on implementation. Students connect, network, leverage, test, adapt and finally implement their capstone projects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): EMS 586
EMS	588	MSL Capstone	Students complete and fully implement their capstone projects.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 587
EMS	589	MSL Capstone Project Prep	One challenge for sustainability leaders is the translation of an idea to an actionable project or program which can lead to sustainable outcomes. Guides students through the initiation and planning stages of a sustainability project, going from theory to hands-on implementation. The capstone is the student's idea in action, allowing him or her to learn to connect, network, leverage, test, adapt and finally implement sustainability solution.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 522; EMS 523; EMS 524; EMS 525; SOS 508; SOS 509
EMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	101	First-Year Composition	Discovers, organizes and develops ideas in relation to the writer's purpose, subject and audience. Emphasizes modes of written discourse and effective use of rhetorical principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): All students; For students for whom English is not the native language, enroll in ENG 107 (or WAC 107).
ENG	102	First-Year Composition	Critical reading and writing; emphasizes strategies of academic discourse. Research paper required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	105	Adv First-Year Composition	Concentrated composition course for students with superior writing skills; intensive reading; research papers; logical and rhetorical effectiveness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ACT English score of 26 or above, or SAT Verbal score of 660 or above (or SAT Verbal score of 620 or above if taken before 2016), or Accuplacer score of 8 or above; Credit is allowed for ENG 101 or ENG 105 OR Visiting University Student

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ENG	107	First-Year Composition	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prereq(s): TOEFL score >=6.5, or Global Launch ENG Prof score >=80+, or ACT English score >=19, or SAT Verbal score >=520 (SAT Verbal score >=470 if before 2016), or Accuplacer score >=5 OR Visiting University Student
ENG	108	First-Year Composition	For students for whom English is not the native language. Critical reading and writing; emphasizes strategies of academic discourse. Research writing required. Satisfies graduation requirement of ENG 102.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Credit is allowed for only AME 130 or ENG 130
ENG	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): freshman standing; maximum 25 hours
ENG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ENG	200	Critical Reading & Writing/Lit	Introduces the terminology, methods, and objectives of the study of literature, with practice in interpretation and evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	201	World Literature	Classical and medieval periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	202	World Literature	Renaissance and modern periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	203	Intro to Health Humanities	Introduces the field of health humanities. Through readings in cultural studies of literature and other media, history of medicine, bioethics, disability studies, cross-cultural and global health, and related scholarly areas, introduces some of the fundamental challenges and debates in this growing interdisciplinary field. Also addresses questions of medical professional ethics and teaches structural awareness of the sociocultural aspects of health and health care.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	204	Topics in Contemporary Lit	Topics in contemporary literature, which may include narrative and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	205	Intro to Writing, Rhet, Lit	How do we understand the ways in which people in systems--both small and large--social, political, and economic, throughout the world use language and other symbolic resources to carry out work? Three fields of study take this kind of questioning especially seriously: studies in writing, studies in rhetoric, and studies in literacy. Inquiry--that persistent, deliberate commitment to question and to build methods sufficient to that questioning--is a generative force in each of these fields of study. Familiarizes students with such questioning traditions and to help them judge for themselves what each is good for. The goal is to strengthen your own repertoire and decision-making power for producing and circulating work (widely defined across material, print, and digital media) that matters in our risk-ridden world. Quite simply, then, this is a course in asking good questions and in evaluating responses to situations that spur questioning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	207	English Language/Cultures I	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107; ENG 108
ENG	208	English Language/Cultures II	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107 with C or better; ENG 108 with C or better

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ENG	210	Intro to Creative Writing	Beginning creative writing in genres other than poetry and fiction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	213	Intro to the Study of Language	Language as code; phonetics, phonology, morphology, and syntax; the lexicon; language acquisition; sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	214	English Grammar and Usage	Fundamentals of English grammar (word and phrase structure), English usage (punctuation, grammatical correctness), and grammatical and usage theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	215	Strategies of Academic Writing	Advanced course in techniques of analyzing and writing academic expository prose. Writing is research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	216	Persuasive Writing Public Issue	Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. Papers are research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	217	Writing Reflective Essays	Critical examination of the influences discourse has on formation of identity; narrative analyses of self and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	218	Writing About Literature	Advanced writing course requiring analytical and expository essays about fiction, poetry, and drama.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	221	Survey of English Literature	Medieval, Renaissance, and 18th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	222	Survey of English Literature	Romantic, Victorian, and 20th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	228	Introduction to Shakespeare	-	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 228 or 294 (Shakespeare for Teachers) OR (Introduction to Shakespeare)
ENG	229	Love and Lust in Medieval Lit	The medieval period, roughly 600-1500, cannot reasonably be called the "dark ages." Indeed, the Middle Ages provides us with a corpus of literature replete with complex characters struggling to live and love, dealing with sin and lust, unity and diversity, faith and reason within a tumultuous cultural milieu and religious rigor, all of which are feeling the winds of changes. Explores medieval literature, noting the astonishing differences from our own time, as well as surprising similarities. Western civilization, our own 21st century, for better or for worse, is indebted to the love and lust of the medievals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 229 or 294 (Love and Lust in Medieval Lit)
ENG	230	Introduction to Film Studies	Introduces the style and cultural significance of feature films.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	235	Intro to Contemp Theory	Introduces key ideas and concepts in contemporary critical and cultural theory. In addition to the "posts"--postmodernism, poststructuralism, post-Marxism, postcolonial studies, post-feminism and posthumanism--explores new theoretical formations that have emerged in response to our contemporary social condition, such as queer theory, trauma theory, disability studies, cognitive studies, the new "object-oriented" philosophies and materialist theories. And then there's the "trans" domains--transnationalism, transgender studies and transhumanism--which, like so many contemporary theoretical formations opens up new perspectives on where and how we live, who we are and even what we are. The contemporary theories studied in this course provide the tools for understanding 21st-century life and the limits and enjoyments of our humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 235 or ENG 294 (Literary Theory & Interdisciplinary Studies) or ENG 294 (Introduction to Contemporary Theory)
ENG	241	Literatures of the US to 1860	Surveys literary movements and genres from colonization to the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	242	Literature of US Post 1860	Surveys literary movements and genres from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	243	Intro to Writing Family Hist	Interdisciplinary writing course on theories, methodologies, and issues in writing family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	244	Intro Research Fam Hist	Introduces research methods in family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	245	Popular Culture Issues	Selected topics in various forms of popular culture related to written texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	287	Beginning Workshop Poetry	Beginning writing of poetry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	288	Beginning Workshop Fiction	Beginning writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	301	Writing for the Professions	Advanced practice in writing and editing expository prose. Primarily for preprofessional majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student
ENG	302	Business Writing	Advanced interdisciplinary writing course designed to improve the workplace writing competence of W. P. Carey School of Business professional and preprofessional students. Lecture, discussion, case studies, cooperative learning, interactive, Internet, student presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): W. P. Carey major; ENG 102, 105, or 108 with C or better; minimum 55 hours or junior standing; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student
ENG	303	Classic Backgrnds: English Lit	Readings of Greek and Latin literature in translation as they relate to literature in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	307	Writing Science Fiction	Writing science fiction, primarily the short story.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	310	Intermediate Creative Writing	Intermediate creative writing in genres other than poetry, fiction, or science fiction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 with C or better OR Visiting University Student
ENG	311	Persuasive Writing	Advanced writing course that focuses on persuasive writing for diverse audiences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	312	English in its Social Setting	Introduces the sociolinguistic study of the English language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	313	Phonology and Morphology	The study of language sound-structure (phonology) and word-structure (morphology) in the framework of current linguistic theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; ENG 213 or SLC 201 with C or better OR Visiting University Student
ENG	314	Modern Grammar	Modern descriptive models of English grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	315	Medieval Lit in Translation	Medieval literature (insular and continental) in translation, from Beowulf to Malory (excluding Chaucer), emphasizing cultural and intellectual backgrounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): minimum 45 hours. Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 or HEB 394 (Literary Readings of the Bible)
ENG	317	Cross-Cultural Writing	Cultural differences and their impact on writing and/or their role in miscommunication and misinterpretation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	318	Life and Death of Lang	The history of language development, spread and contraction as well as thinking on where language may be going in the future. Discusses how languages differentiate and become new languages, how they mix with each other and how the development of writing can change this process. Maintains a focus on the ways speakers from different language communities have found to communicate through pidgin languages, bilingualism and languages of wider communication. Moreover, discusses the invention of new varieties and languages by people who feel their current choices do not fit their needs. Lastly, in considering what might be needed in the future, addresses issues such as machine translation, brain-to-brain communication, aspects of intergalactic communication posed in science fiction and interspecies communication.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 318 or ENG 394 (The Life and Death of Languages) OR Visiting University Student

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ENG	319	Future of English	This transdisciplinary course investigates what varieties of English are currently used by whom and for what purposes, and attempts to predict the future of English and its significance at the individual, national and global levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 319 or ENG 394 (Future of English) OR Visiting University Student
ENG	320	Medievalism in Modern Culture	Studies the representation of Medieval narratives, characters, themes, myths, and images in modern culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	321	Shakespeare	Readings in Shakespeare's major comedies, tragedies, histories, romances and/or poems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	322	Westerns: Film & Short Stories	A survey of classical short stories and recent films. Focuses on Wister, L'Amour, Grey and Leonard.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 322 or ENG 494 (Westerns: Films and Short Stories) or ENG 494 (Westerns: Movies and Short Novels)
ENG	323	Rhetoric and Grammar	Practical course taught in the computer lab. Emphasizes rhetorical strategies and grammar for writers.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	324	Horror: Films & Short Stories	A survey of major writers since 1800, and of classic filmmakers. The historical development of horror in relation to Gothic and grotesque short stories and films.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 324 or ENG 494 (Horror:Zombies/Monsters/Vampires/Cannibals/Ghosts) or ENG 494 (Horror: Movies and Short Stories) OR Visiting University Student
ENG	325	Restoration & the 18th Century	Writers and movements in nondramatic literature of the restoration and early 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	326	English Drama 1660-1800	English drama 1660-1800.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
ENG	328	The Novel to Jane Austen	From origins of prose fiction through the 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	329	19th-Century British Fiction	Includes such authors as Austen, Dickens, Eliot, and Conrad.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	330	19th-Century British Poetry	Romantic and Victorian poets studied in context.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	331	American Drama	Major works in the development of American drama from its beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	333	American Ethnic Literature	Examines America's multiethnic identity through works of literature that depict American ethnic, gender, and class sensibilities.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
ENG	335	American Poetry	Themes and developments in American poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	337	Major American Novels	Major American novels studied in their ethnically diverse literary, historical, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	338	Protest Literature	Examines traditions of social protest literature across a variety of historical periods and literary and rhetorical genres.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, or ENG 108 with C or better; minimum 24 earned hours; Credit is allowed for ENG 394 (Banned Literature), 338 or 440 (American Protest Novels)
ENG	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Dm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Dm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Dm Wrk:Pg to Stg&Scrn) OR Visiting University Student
ENG	342	20th-Century British/Irish Lit	Major works in the development of literature since 1900, studied in their historical and cultural contexts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	343	Crime: Film & Short Stories	A survey of classical crime fiction and recent crime films. From Poe, Doyle, Hammett and Chandler through Sayers, Highsmith, Grafton and Paretsky.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 343 or AMS 494 (Crime: Stories and Movies) or ENG 494 (Crime Fiction: Film & Short Stories)
ENG	344	Int Family History Research	How to locate records, analyze and interpret evidence, and write a family history narrative.	N	RSC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	345	Selected Authors or Issues	Different topics may be offered. Film topics with lab may carry 4 credits. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
ENG	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ENG	352	Short Story	Development of the short story as a literary form; analysis of its technique from the work of representative authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353 OR Visiting University Student
ENG	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ENG	355	European Dramatic Traditions	Development of European drama since Aeschylus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	356	The Bible as Literature	Readings in the Jewish and Christian Scriptures in modern translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	359	Indigenous American Literature	Selected oral traditions and contemporary works by Indigenous American authors.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	360	Western American Literature	Critical examination of ideas and traditions of the literature of the western United States, including the novel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	361	Scriptwriting	The art of scriptwriting using 10-minute plays as the platform. Designed to help students learn craft techniques and to expose them to the various forms of the 10-minute script. Includes lectures, writing assignments, discussion, and criticism.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): first-year composition; credit is allowed for only ENG 361 or 394 (Scriptwriting)
ENG	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
ENG	364	Women and Literature	Approaches to issues of gender and representation in literature by and about women.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	365	History of Film	Development of motion pictures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3-4	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	366	Literature on Film	Studies literary texts and their adaptation to film.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	367	Environmental Literature&Film	Evaluates literary texts and films that address interconnected cultural, historical, and environmental issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	368	Art of the Personal Essay	Writing personal essays drawing on both research and personal experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	369	Science Fiction Studies	Development of science fiction and fantasy literature. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	370	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 35 hours; Credit is allowed for only BIO 315 or ENG 370
ENG	371	Rhetoric of Environmental Mvmt	Examines how language is used to conceptualize, clarify/obfuscate, and resolve problems among those who concern themselves with the disposition of natural resources.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	373	Pub in Literary Magazines	Analyzes the history, publishing preferences, editorial staff, and submission guidelines of literary magazines.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	374	Technical Editing	Fundamentals of editing technical and professional materials. Role of editors in analyzing, revising, and polishing manuscripts. Successful writer-editor dialogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	375	Titans of Business	Explores leading CEOs and corporations from a humanities perspective.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	376	Writing a Personal History	Interdisciplinary writing course emphasizing theories, methodologies, and issues of composing personal histories.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	377	Editng Family Hist for Pub Auds	Fundamentals of editing family writing. Role of editors in analyzing, revising, and polishing manuscripts for publication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	378	Environmental Creative Nonfict	Lectures, discussion, and criticism concerning the literary history of nature writing and techniques of writing environmental creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	379	Travel Writing	Studies the genesis of travel writing, what theories inform travel writing, and the various genres of travel writing today.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	385	Career Develop English Majors	Theoretical and practical aspects of career planning related to skills and interests developed in English studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	386	American Gothic	The development of modern American Gothic as a literary form from Poe to Oates. Emphasizes the short story.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	387	Intermediate Workshop Poetry	Intermediate writing of poetry. Requires term paper or equivalent out-of-class written work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 287 with C or better OR Visiting University Student
ENG	388	Intermediate Workshop Fiction	Intermediate writing of fiction. Requires term paper or equivalent out-of-class written work.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 or 288 with C or better OR Visiting University Student
ENG	390	Methods of Inquiry	Studies in writing, rhetoric and literacy are multiple and diverse because these areas deal with complicated ways people create meaning, circulate meaning, and understand meaning in a variety of contexts and a variety of modal formats. Examines ways of developing research problems and questions, designing studies and conducting, reading and evaluating research in the areas of writing, rhetoric and literacy. Qualitative methods (e.g., case study, ethnographic methods, interviewing); historical methods (e.g., archival, document analysis and artifact interpretation); rhetorical analysis and discourse analysis; feminist approaches to research and analysis; and recent advances in research in the fields of rhetoric, writing and literacy studies. Investigates the many attitudes and assumptions about creativity and cultural work that make methods of inquiry as controversial as they are significant to contemporary public life.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	391	Writing in Context	How do we understand the ways in which people use written language to carry out work in professional, academic, social and/or personal contexts? How does our understanding of the ways writing is produced for an audience shift between and among these different contexts? More importantly, how do writers adapt their writing practices in order to facilitate audience understanding as well as cultivate an audience's capacity for action? Familiarize students with rhetorical practices that position them to read, assess and respond to the rhetorical demands of a wide range of writing contexts. Strengthens students' existing rhetorical skill sets and problem-setting capacities for producing and circulating work (widely defined across material, print and digital media) that responds to a range of problems in an applied manner. Assesses the rhetorical demands of writing contexts and in developing and producing tailored, audience-specific texts that forward work in complex, interdisciplinary environments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	392	History of Rhetorical Theory	Begins in ancient Greece with the rise of the art of public oratory (known as rhetoric) and ends in the present, an era dominated by mass media. Engages in a great deal of reading—lots of very old writings as well as some newer ones. Covers a great many topics and ideas; focuses by continually returning to the subject of public discourse. Challenging readings designed to emphasize the connection between systems of philosophy (or "worldview") and systems of communication. By focusing on big ideas, students become a better thinker and communicator in any chosen career.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	393	Theories of Literacy	While theories of literacy have, for the most part, been determined by the primacy of reading and writing script, more recent scholarship in literacy theory and history has served to challenge such limitations. Many contemporary perspectives on literacy view scripted text as one component of complex acts and practices of written communication that occur in social contexts. Studies that examine such communicative acts in their local contexts reveal that literate practices and the texts that are produced are imbued with social and cultural values and traditions and the needs and desires of individuals. As the statements above illustrate, theories of literacy themselves are embedded within the values and assumptions of individuals, institutions, and academic specialization. Examines some of these theories, their influences on academic scholarship and pedagogy, the ideological assumptions that inform them, and how we might view these theories within broader social-cultural landscapes.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	400	History of Literary Criticism	Major critics and critical traditions in the Western world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	401	Topics in Critical Theory	Major critical schools of recent decades—postcolonialist, psychoanalytic, deconstructionist, feminist, new historicist.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	403	Semantics	Program and methods of contemporary formal semantics. Characterizes knowledge of meaning as knowledge of truth conditions. The goal of semantics is thus to uncover the rules that allow the speakers of a language to know under what conditions any sentence is true; or in other words, to construct a theory of truth for natural language. Simple fragments including: predication, quantification, definite descriptions, simple temporal and modal expressions, and attitude verbs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 314 with C or better OR Visiting University Student
ENG	404	Studies 2nd Lang Acquisition	Specialized topics in second language teaching and learning, including theory, pedagogy, curriculum, and assessment.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better OR 8 credit hours of a second language earned within the last year; minimum 56 hours OR Visiting University Student
ENG	409	Analyzing Rhetoric	Provides students with the tools and methods by which the effectiveness, truthfulness, ethicality, and/or artistry of persuasive speech and language can be evaluated. Students take a systematic approach to analyzing rhetoric on a variety of selected topics.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 409 or ENG 494 (Analyzing Rhetoric: Fake News & Alternative Facts)
ENG	410	Writing for Publication	Lectures and conferences concerning techniques of writing for publication.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 and one 200-level literature course with C or better, OR New College undergraduate student with minimum 45 hours
ENG	411	Advanced Creative Writing	Advanced creative writing in genres other than poetry, fiction, creative nonfiction, or screenwriting.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 with C or better
ENG	412	Creative Nonfiction	Lectures, discussion, and criticism concerning techniques of writing creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310, 388 or 411 with C or better

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ENG	413	History of English Language	Development of English from the earliest times to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 413 or LIN 517 OR Visiting University Student
ENG	414	Studies in Linguistics	Specialized topics in linguistics including phonology, syntax, semantics, pragmatics, discourse, language variation, and change.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better, OR 1 year language study and minimum 56 hours
ENG	415	Studies in Medieval Lit/Cultr	Medieval English and continental literature in translation, emphasizing cultural and intellectual backgrounds.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	416	Chaucer in Middle English	Yearly alternate between Chaucer's The Canterbury Tales and Troilus and Criseyde.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	417	Virtual Worlds/Global Communic	Explores the nature of virtual worlds and the multiple uses of these three-dimensional environments (also called metaverses) for new literate and global communications in the 21st century. Uses a combination of a textbook; Blackboard; popular virtual worlds, including Second Life (SL), and Internet resources (e.g., Web sites, e-discussion lists, YouTube videos) to explore the potential of virtual worlds. Explores the capabilities of several of the more than 70 virtual worlds for education, recreation, advancing social justice, global communication, socializing and networking. Participants critically examine the affordances of virtual worlds through readings, videos, online discussions, self-paced tutorials and brief reaction papers. Students receive demonstrations and guided tours by the professor and participate in individual and group explorations of virtual worlds	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for CMN 598 (Virtual Worlds) or ENG 417 or ENG 494 (Virtual Worlds) or MAS 598 (Virtual Worlds)
ENG	418	Renaissance Literature	Prose, poetry, and drama of the Renaissance Era with an emphasis on cultural history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	419	Writing in Digital Spaces	Focuses on the conventions and interconnectedness--the weaving of text, images, sound and video--of writing in a digital age. Increases awareness and understanding of how, perhaps now more so than ever before, writing requires specific attention to context, audience and meaning making. Emphasizes the theory and practical rhetorical conventions for social and digital media.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ENG 419 or ENG 494 (Writing in Digital Communities) OR Visiting University Student
ENG	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR New College undergraduate student; minimum 45 hours; Credit is allowed for only ENG 420 or IAS 420 OR Visiting University Student
ENG	421	Studies in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	422	Special Topics in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	423	Renaissance Drama	Topics, authors, and themes in the drama of the Tudor and early Stuart periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	424	Milton	Selected prose and poetry, emphasizing Paradise Lost, Paradise Regained, and Samson Agonistes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	425	Studies in Romanticism	Romanticism in continental, British, and American literature and culture.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	426	British Culture and Empire	Examines British imperial culture in art and literature, 1870-1914, and postcolonial theory.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	427	Studies 18th-Cent Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	428	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G & H	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 429 or SLC 429 or THE 429 OR Visiting University Student
ENG	430	Studies Victorian Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	431	Whitman and Dickinson	Evaluates the 19th-century American Literary Renaissance through the specialized examination of its poetry and authors in their historical context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	432	The American Renaissance	Novels, poetry, short fiction, and criticism of the major literary figures of the early to mid-nineteenth century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR New College undergraduate student; minimum 45 hours OR Visiting University Student
ENG	434	Studies: Lit/Culture Americas	Literature and culture of North America, South America, and the Caribbean. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	435	Lits of Immigration/Diaspora	Specialized topics in literary and cultural representations of immigration and diaspora studied in an interdisciplinary context.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	436	Studies Anglophone Lit/Culture	Literary, social, and cultural issues of English-speaking former colonial territories. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	437	The American Novel, 1900 -1960	Developments in theory and practice of major novelists.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	438	American Novel Since 1960	Major novelists of the period. Developments in theory and practice.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ENG	439	Technoliteracies	Critically explores the nature of digital communications and expanded definitions of what counts as text and as literate expression in the 21st century. Emphasizes the 21st-century skills and abilities required for and fostered by digital communications (e.g., collaboration, multitasking, intertextual analyses) and examines the newest technologies that enable digital communications (e.g., digital storytelling, virtual worlds, social media, digital crafting, video gaming/modding). In doing so, focuses on the intersections of technologies and the arts as literate communications with implications for teaching and learning. Participants explore these topics through readings, videos and Web sites and by reflecting on their own experiences. Students respond to questions/prompts through online discussions, reflective thought papers, and media or virtual presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 439 or ENG 494 (Technoliteracies) or MAS 598 (Technoliteracies)
ENG	440	Studies in Amer Lit & Culture	Various genres in their literary, political, theoretical, and historical contexts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	441	Intro to Participatory Media	The spread of participatory media, ranging from zines, e-zines, podcasting and video production tools to video games and virtual worlds has led to significant changes in how we communicate, learn, collaborate, network and create. Introduces theory and research on participatory media and the changing nature of "literacy" in a media age to "literacies." Addresses key concepts and issues, such as language, identity, access and community. Explores these topics through engaging in readings, videos and Web sites; by reflecting on their own experiences; and by responding to questions/prompts through online discussions, thought papers, social media or virtual presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only CMN 598 (Intro to New Media) or ENG 441 or ENG 494 (Intro to New Media) or ENG 598 (Intro to New Media) or MAS 598 (Intro to New Media) OR Visiting University Student
ENG	442	20th-C Brit/Irish Lit/Culture	Major literary genres (novel, poetry, and drama) in their cultural and historical contexts. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	443	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 443 or ENG 494 (Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student
ENG	445	Studies in American Realism	Writers and influences that shaped the development of literary realism. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	446	Visual Narratives	Reads, analyzes and crafts visual narratives including graphic novels, picturebooks, films, commercials and videogames.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520 OR Visiting University Student
ENG	447	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
ENG	448	Studies in Irish Lit/Culture	Themes and problems pertaining to Irish literature, film, and social and cultural history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	449	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
ENG	450	The British Novel	Focuses on the British novel from the 18th century to the present.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	452	Studies in the Novel	May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	453	Studies in the American Novel	Poetics and politics of the novel, 18th through 21st centuries. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	454	Gender and Literature	Focuses on the representation of gender in literature.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	455	Contemporary Women Writers	Critical examination of literature by contemporary women writers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
ENG	457	Studies in American Poetry	May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	458	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464
ENG	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only AFR 459 (or AFH 459) or ENG 459
ENG	460	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Hispanic, and Asian American.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR Integrative Sciences & Arts or New College undergraduate student; minimum 45 hours; Credit allowed for only ENG 460 or WST 467 OR Visiting University Student
ENG	461	Studies in Women and Lit	Advanced topics in literature by or about women.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	462	Africana Literature	Focuses on the literature of the African Diaspora, including texts from the Caribbean, the Americas, and Africa. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	463	African American Literature	Thematic and cultural study of African American literature.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	464	Great Directors	Studies the work of one or more influential directors.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	465	Studies in Film	Advanced topics in cinema.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	466	Studies in International Film	Studies non-American narrative film.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	467	American Film Musicals	A cultural history of American film musicals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	468	Environmental Literary Criticism	Evaluates the disparate critical practices that constitute what is the emerging literary project known as "ecocriticism" or "environmental literary criticism."	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	469	Science and Literature	Historical and theoretical links between science and literature, from Francis Bacon to the present, examined in cultural context. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	470	Symbols/Archetypes Child Lit	Various critical approaches and recurring themes studied in relation to classical and contemporary children's literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student
ENG	471	Literature for Young Adults	Prose and poetry that meet the interests and capabilities of junior high and high school students. Stresses recent literature. A passing grade of at least "C" (2.00) required before students are permitted to student teach in English.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	472	Rhetorical Studies	Developments in theory and practice of major rhetorical inquiries.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	473	Crit Approaches Children's Lit	Reads picture books, chapter books and fairy tales and analyzes these texts through multiple critical lenses (e.g., feminist, Marxist, historical, structuralism, formalist).	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 473 or ENG 394 (Reading Children's Literature)
ENG	474	Review Writing	Advanced writing course exploring rhetorical approaches to writing reviews.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Completed ENG 102, 105, or 108 with C or better; Minimum 56 hours
ENG	475	Popular Periodical Writing	Advanced writing course analyzing and imitating genres in popular periodical writing.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Pre-requisite(s): Completed ENG 102, 105, or 108 with C or better. Minimum 56 hours
ENG	476	Studies in Folklore	Surveys the history, genres, and dynamics of folklore, with emphasis on oral traditions. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU or SB) & C	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	477	World Literature	Readings in world literature, mostly outside the United States and England.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & G	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR Integrative Sciences & Arts or New College undergraduate student; minimum 45 hours; Credit allowed for only ENG 477 or IAS 477 OR Visiting University Student
ENG	478	Studies in Modernism	Cultural, historical, and literary issues in American and European modernism.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	479	Studies in Postmodernism	Literary, social, and cultural topics in postmodernism. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	480	Methods Teaching English: Comp	Methods of instruction, organization, and presentation of appropriate content in the teaching of composition and other writing skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student
ENG	482	Methods of Teaching: Language	Methods of instruction, organization, and presentation of appropriate content in language and usage for junior and senior high schools.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student; minimum 45 hours OR Visiting University Student
ENG	483	Methods Teach Sec Lit & Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR New College or Integrative Sciences and Arts undergraduate and minimum junior academic level and one 200-level (or higher) English course with C or better
ENG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	485	Digital Tools	Digital (online, electronic) tools as best utilized in language arts curriculum and instruction for junior and senior high schools. Addresses many practical classroom matters; broadens knowledge of Web 2.0 opportunities for teaching and learning. Creates a detailed inventory of the digital tools familiar to secondary students, and compares these to what a clever English teacher can access in a public school classroom. Imaginations, studies, and designs digital tools to enhance student achievement. Uses digital tools to increase student access to history and culture and opportunities for individuals to find and articulate their voices, as well as opens avenues for their creativity. Empowers the English language arts classroom with critical understandings of media, culture and public relations (digital information manipulation) and develops secondary students from passive consumers to literate participants in democracy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105, 108 and one other ENG course with C or better
ENG	486	Teaching Text	Approaches to texts (poetry, nonfiction and fiction) as best utilized in language arts curriculum and instruction for junior and senior high schools. Language arts teachers want all of their students to love literature and become immersed in the texts they assign (poems, short stories, plays, nonfiction and informative texts, and novels). Explores activities and philosophies for building a strong reading workshop in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into books, designs and experiences reading workshops based on innovative and effective teaching strategies. Offers hands-on strategies for supporting struggling readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105 or 108 and one other ENG course with C or better; Credit is allowed for only ENG 486 or ENG 598 (Teaching Text) OR Visiting University Student
ENG	487	Advanced Workshop Poetry	Advanced writing of poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 or 387 with C or better; Credit is allowed for only ENG 411 or ENG 487 OR Visiting University Student
ENG	488	Advanced Workshop Fiction	Advanced writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 388 with C or better; Credit is allowed for only ENG 411 or ENG 488 OR Visiting University Student
ENG	490	Forms Theory Practice Poetry	Types, history, analysis of traditional forms, and contemporary adaptations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 411 or 487 with C or better; Credit is allowed for only ENG 490 or ENG 495
ENG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student

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ENG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student
ENG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
ENG	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Familiarizes students with the areas of research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ENG 501 or LIN 501
ENG	502	Contemporary Critical Theories	Studies the principles and techniques of contemporary theory and criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	503	History of Narrative	Historical overview of narrative as a mode of discourse and communication. Begins with the study of influential traditional narrative forms from Biblical and classical sources and moves to study innovation in narrative, including flashbacks, interior monologue, nonlinear narrative and frustration of narrative expectations.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	504	Cross-Cultural Studies	Theoretical and analytical issues for comparative research across distinct cultural regions and traditions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	505	Narrative Research Methods	Addresses narrative and arts-based forms of qualitative research. Focuses on reporting study findings in narrative form.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	506	Methods Issues Tchng Language	Developing the language skills of native and non-native speakers through a process approach and advanced writing workshops in junior and senior high schools.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	507	Methods/Issues Teaching Comp	Up-to-date theory, practice, and implementation of secondary writing instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	509	Studies in Narrative Writing	Writing course focusing on specific kinds of narrative writing (e.g., blogging, travel writing). Regardless of particular topic focus, this course covers basic structural issues in narrative writing and gives students practical and applied experience crafting their own narratives for multiple audiences.	Y	SEM	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	514	Studies Experimental Narrative	Critical analysis of experimental or unconventional narratives, including nonlinear narrative, surrealist narrative and metanarrative. Course materials include both text and visual narratives.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	516	Literary Publishing	Explores various aspects of literary publishing, including market profile of journals, techniques for preparing submissions, role of literary awards and contests.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517
ENG	518	Scientific Narratives	Examines how fictional narratives have shaped popular constructions of science and how scientific works can be read as narrative. Coursework emphasizes critical thinking, discussion and argumentative writing.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	519	Superstition Review	Students collaborate to complete tasks that lead to the publication of one issue of the national online literary magazine Superstition Review.	N	PRA	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	520	Visual Narratives	Students read, analyze and craft visual narratives. Includes various types of visual narratives such as graphic novels, picturebooks, films, commercials and videogames.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520

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ENG	521	Writing the Southwest	Cultural representation in twentieth-century narratives of the Southwest United States. Focuses on canonical and noncanonical texts and addresses multiple representations of race, time periods and genres in the Southwest literature.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	522	Narratives of Conquest	Critical study of narratives relating/responding to the conquest of the Americas from the fifteenth century to the present. Addresses conquest narratives that reflect the Spanish colonization period (1510-1810) and the United States colonization period (1848-1965) in the Southwest. Chosen texts illuminate themes related to the nature of colonial relationships, notions of barbarie/civilization and empire building	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)/Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
ENG	530	Old English	Study of Old English grammar, syntax, and phonology, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	531	Old English Literature	Intensive literary, linguistic, and cultural study of Old English literature.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	532	Middle English Dialects	Study of the principal dialects of Middle English, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	533	Studies in Medieval Literature	Selected topics in English literature from the 11th through the 15th centuries.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	534	Studies in Renaissance Lit	Selected topics and literary works studied in the contexts of English Renaissance culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	535	Study 18/19th Cent British Lit	Selected topics, issues, figures, and genres in British literature and culture of the 18th and 19th centuries.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	536	Study Amer Lit before 1900	Selected topics, issues, figures, and genres in 17th-, 18th-, and 19th-century American literature, including the literature of conquest and contact.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	537	Studies Mod/Contemp Brit Lit	Selected topics, issues, figures, and genres in British literature and culture after 1900.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	538	Studies Mod/Contemp Amer Lit	Selected topics, issues, figures, and genres in American literature and culture after 1900.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	539	Studies Mod/Postmod Lit/Theory	Selected topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	540	Tchg Young Adult Literature	Issues and new approaches in teaching contemporary literature in high school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	541	Teaching Texts	English language arts teachers want all of their students to love literature and become immersed in the texts they assign. Explores activities and philosophies for building a strong reading curriculum in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into texts, designs and experiences reading workshops based on innovative and effective teaching strategies. Students learn to create and implement reading units, literature circles, books of choice, literary tea parties, reading portfolios and final projects. Students also learn hands-on strategies for supporting ethnically and linguistically diverse readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 541 or ENG 598 (Teaching the Novel Grades 6-12)
ENG	542	Studies North Amer Ethnic Lit	Selected works studied in their cultural contexts from authors representing ethnic experiences in the United States.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	544	Studies Colonial/Postcol Lit	Selected topics, periods, theories, and figures in works by authors representing colonial and postcolonial regions and/or experiences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	550	Translation	Surveys theories and practices of translation into English. Considers target, audience and market.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	551	Rhetorical Traditions	Examines rhetorical traditions spanning ancient to contemporary rhetorics.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	552	Composition Studies	Selected topics in the history and theories of composition.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	553	Technologies of Writing	Critical study and cultural analysis of information technologies and their effects on various writing practices.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	554	Rhetorics Race, Class, Gender	Study of interdependent relationships of race, class, and gender in rhetorical constructions of self and community.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	556	Theories of Literacy	Examines various theories of literacy, their embedded values and assumptions, and their influences on academic scholarship and pedagogy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
ENG	560	Genre Studies	Critical analysis and study of works from a single genre or comparative analysis and study of multiple genres.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	561	Film Studies	Analysis and study of film genres, cinematic techniques, and problems of interpretation and representation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	562	Forms of Poetry	Types, history, criticism, and schools of theory of metrical form. Analyzes lyric, narrative, and dramatic poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	563	Forms of Fiction	Types, history, criticism, and schools of theory in the forms of fiction. Analyzes narrative and dramatic structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
ENG	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568
ENG	571	Foundations for Teaching ELs	Provides teachers with foundational knowledge of English language learner education including: identification and knowledge of English language learners in school contexts, the role of culture in learning, principles of second language acquisition and teaching, historical and current perspectives and policies related to English learner education, and the role of parents and communities in the education of English learners.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 580 (1 hour); Credit is allowed for only ENG 571 or ENG 598 (Foundations for Teaching English Learners)

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ENG	572	Strategies for Teaching ELs	Supports teachers through a review of core knowledge of strategies and correlated assessments for the instruction of English learners. Teachers learn to assess EL language needs and apply appropriate teaching strategies for supporting learning English and content. Primary emphasis is in the integration of EL language and learning needs and implementation of lesson planning, strategies and appropriately leveled instruction. Teachers complete a semester-long inquiry on integrating course content into their teaching practices.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 571; Pre- or corequisite(s): ENG 580 (2 hours); Credit is allowed for only ENG 572 or ENG 598 (Strategy/Assessment/Core for Teaching Eng Learners)
ENG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	581	Methods Teaching Sec Writing	Emphasizes methods of planning, teaching, and assessing appropriate content in the instruction of composition and related skills in secondary classrooms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is allowed for only ENG 481 or 581
ENG	582	Pedagogy	Overview of diverse theories of English instruction, including composition/rhetoric, linguistics and literary, with emphasis upon development and implementation for high school- and community college-level instructors.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): admission to any graduate program
ENG	583	Methods Teaching Sec Lit&Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	597	Graduate Capstone Seminar	The capstone seminar is required for graduate students who must complete a culminating experience for a degree or certificate program.	N	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 597 or LIN 597
ENG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	602	Adv Studies Theory/Criticism	Seminar courses on the principles, strategies, and applications of critical, cultural, and/or literary theory and/or criticism.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	603	Adv Studies Comparative Lit	Seminar courses on the problems, methods, and principles of comparative analysis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	604	Interdisciplinary Culture Stds	Seminar courses on work from literature, anthropology, and/or other disciplines, with an emphasis on cultural influences and functions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	606	Adv Studies in English Educ	Current research, issues, and trends in English education.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing—an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
ENG	632	Adv Studies Med/Ren Lit/Cultur	Seminar in works of the Medieval or Renaissance periods, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	635	Advanced Studies British Lit	Seminar courses on works produced in or about England, Scotland, and Wales, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	636	Advanced Studies American Lit	Seminar courses on works produced in or about the United States, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	639	Adv Studies Modernism/Postmod	Seminar courses on topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	642	Adv Ethnic, Anglo, Post C Lits	Seminar courses that consider the influence of cultural or geopolitical developments on the production and circulation of texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	651	Adv Studies/History/Theories	Selected topics in the history and/or theory of rhetoric.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	652	Advanced Composition Studies	Selected topics on particular composition theories, practices, pedagogies, and figures.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	654	Adv Studies-Rhet,Writ,Tech&Cit	Advanced study of theoretical, methodological, and pedagogical issues concerning the interrelationships among rhetoric, culture, writing, and writing technologies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	655	Disciplinary Discourses	Investigation of professional and disciplinary issues related to English.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	656	Studies Cross-Cultural Discrse	Theoretical and methodological issues in the comparative study of discourses between cultures and communities of practice.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	662	Poetic Genres	Creative writing courses in the long poem, the erotic image, death and transfiguration, reading and influence, and others.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	664	Mixed Genres	Creative writing courses in the prose poem, magical realism, the literature of obsession.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	665	Creative Methods	Creative writing courses in theory of the novel, poetics, story into film, and others.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	667	Issues in Writing Professions	Focuses on career preparation, resources, the role of writing in the community, creative writing, and the Internet.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENT	290	Entrepreneurship: Oppr Impact	How do you know if entrepreneurship is right for you? Don't have an idea today but want to work for a start-up? Focuses on developing an entrepreneurial mindset to prepare students for creating or participating in new ventures in the future, whether that is right now or after graduation. While this course does not contain the secret entrepreneurship code or the instruction manual for entrepreneurial success, it does provide a solid foundation of theory and practice that can set a budding entrepreneur on the right path. Students learn foundational entrepreneurship theories, participate in field activities where those theories are being put to the test, as well as learn to critically analyze their own ideas and other venture opportunities. Utilizes a mixture of teaching mediums including readings, videos, guest speakers, simulations, case studies and assignments completed as an individual and in teams.	N	LEL	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		
ENT	305	Princ of Entrepreneurship	Entrepreneurship, with an interdisciplinary basis, focusing principles that involve the startup of a new organization, as well as its management into a fully established firm. Specific discipline-based concepts range from marketing to finance and strategic management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.50 GPA; minimum 30 hours OR Visiting University Student
ENT	340	Creativity and Innovation	Teaches key concepts and useful tools and techniques of creativity and innovation to students in order to encourage development of creative skills and habits that can propel them in their career or guide them down a path to start a new venture of their own. Coursework and activities involve complex problem solving activities and relevant trend and environmental analysis in order to explore alternative approaches to challenges. Coursework includes both individual and team activities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L or HU	Prerequisite(s): minimum 2.50 GPA; minimum 40 hours; Pre- or corequisite(s): ENT 305 with C or better if completed OR Visiting University Student
ENT	360	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s): Business student; ACC 241, 242, 271 with C or better OR Engineering student; minimum junior standing OR Non-Business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
ENT	440	Entrepreneurship	Prepares students for the challenges of assembling and growing high-potential innovative ventures through the use of analytical frameworks that encompass uncertainty inherent in entrepreneurship (or in entrepreneurial activity). In-depth discussion of cases provides a strong empirical foundation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; FIN 300, 302, or 303 with C or better; MGT 300, 303, or 310 with C or better

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ENT	441	Entrepreneurial Management	Provides a framework for dealing with issues from an entrepreneur's perspective. Covers all areas of entrepreneurship from idea conception to prototype development, to testing, refining and harnessing resources. Covers readings and cases related to topics of business models, business plans, managing startups, business law, founder's issues, managing growth, broad business functions and overall strategic and financial positioning.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major or Entrepreneurship & Innovation cert student or Small Business & Entrepreneurship cert student; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	445	Business Model Development	Develops a complete strategic business model emphasizing the planning process undertaken by successful small business owners and entrepreneurs.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ENT 440 (or MGT 440) with C or better
ENT	446	Venture Capital Experience	Students learn the details of the startup funding process and available resources. Exposes the history of venture capital and other types of capital, current trends, and the trends that are anticipated in the future. Students learn due diligence process as performed by investors and applies these concepts to building and growing their own ventures. Coursework includes both individual and team activities and is open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 240, 241, or 242 with C or better OR non-business student; minimum 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 446 (or MGT 446) or MGT 494 (Venture Capital Experience)
ENT	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 w/ C or better OR non-Business student; minimum 2.50 GPA; minimum 56 hours; Credit allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch) OR Visiting University Student
ENT	448	Corporate Entrepreneurship	Covers five general areas of corporate entrepreneurship: entrepreneurial orientation and corporate venturing; franchising the refining of business models; social venturing; and the extension of partnerships (e.g., joint ventures, strategic alliances).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
ENT	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475
ENT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): minimum 45 hours
ENT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student
ENT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student
ENT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
ENV	103	Field & Lab Geology Enviro Sci	Covers the basic principles of geology, geochemistry and geophysics. Topics include plate tectonics, minerals, rocks, weathering, earthquakes, volcanoes, mountain building, geologic time, geologic resources (energy and water), global climate change. Students learn robust field and laboratory skills in geology during this 3-hour lab, with some field trips, that accompanies GLG 101 lecture.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): Environmental Science major; Corequisite(s): GLG 101; Credit is allowed for only ENV 103 or GLG 103
ENV	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ENV	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ENV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		

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ENV	201	Environmental Science	Examines the functioning of the earth system and how it has changed over long and short time scales. Emphasizes understanding global processes and how human activities can disrupt these processes, changing the ability of our global environment to support life. Also emphasizes important feedbacks between biological and physical processes and their effects on the biosphere. Discusses the response of natural and managed ecosystems to global change along with prospects for the future.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 and 182 with C or better; CHM 116 with C or better OR Visiting University Student
ENV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ENV	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	L or SG	Prerequisite(s): BIO 181 (or BIO 188) with C or better; BIO 182 (or BIO 187 or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 303 or ENV 300 or PLB 300
ENV	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
ENV	345	Spatial Analysis	Develops an understanding of the methods, tools and technologies used to collect, display, analyze and interpret spatial data in environmental science and natural resource management. Provides overview of geographic information system (GIS) applications in these fields. Basics of integrating the global position system (GPS) and remote sensing (RS) into GIS to solve problems in environmental science and natural resource management.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better
ENV	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
ENV	388	Research for Natural Sciences	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; Credit is allowed for only LSC 388 or LSC 498 (Research Fundamentals for the Natural Sciences) or ENV 388 or FOR 388 or PLB 388 or PTX 388 OR Visiting University Student
ENV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	410	Soil Science	Fundamental principles of soil science, including physical, chemical, biological and ecological properties. Applies these principles to explain the importance of soil as both a natural resource and ecosystem. Discusses the role of soils as the heart of terrestrial ecosystems, both natural and managed, and the importance of this key natural resource to environmental health and biological productivity. Explores how human activity and global change are impacting this vital natural resource and ecosystem that is crucial to life on earth. The laboratory component also introduces applications and standard methodology for investigating these principles.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 320 with C or better; CHM 116 with C or better; PHY 101 or higher with C or better OR Visiting University Student
ENV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
ENV	485	Environ Impact Assessment	An understanding of federal and state environmental laws, including the scientific processes that are incorporated into decision making, is critical for a variety of careers in the environmental sciences. Provides an overview of these laws and processes and develops the specific written and oral communications skills needed for many environmental, biophysical and natural science professions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better OR Visiting University Student
ENV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barreth Honors student; minimum 45 hours

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ENV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
ENV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
EPA	532	Infrmd Consumer of Ed Research	Development of critical analyses skills in the examination and synthesis of educational research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	555	Translating Rsrch for Ed Chang	Teaches educators how to translate research to promote educational change in their schools and districts. Three concepts emerge to empower practitioners to translate research to their individual schools and communities: (1) a needs assessment to understand the context (student population, community, networks); (2) an emphasis on the generalizability of research to provide an understanding of which findings are most applicable to specific contexts at which times and under which conditions; and (3) explicit training on ways of knowing to encourage practitioners to develop their own theoretical perspectives and test them against the academic research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	556	Data Anlysis for Ed Decsn Mker	Prepares educators to use the sources of information (i.e., results, reports and interactive programs) at their disposal to make educational decisions. Dynamic content is adapted based on the real-world information sources brought forth by the course participants.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	559	Systemc Inqry for Prblm Solvng	Trains participants to produce a policy analysis aimed at addressing a problem they identify within their own organizations. Participants identify a problem, gather, analyze data and evidence to draw conclusions, and clearly and succinctly report their findings and recommendations to policymakers.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	565	Critical Topics in Ed Policy	Critical topics in contemporary educational policy debates in the USA. Explores the dominant ideological and theoretical perspectives about what should be the purposes of schooling. Students analyze the humanist, core-curriculum, vocational, pragmatic as well as the standards-based, market-driven, professionally led, and networked models of reform, theories of change, implementation challenges, and the critiques leveled against these approaches. Students analyze critical topics such as policy formation, leadership, teachers unions, academic performance and community involvement. Encourages students to learn critical "policy skills" and reach reflexive and research-based conclusions about what are the requirements to develop "good school systems" and what their their individual and collective contributions could be.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		

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EPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): EPD 710, 712, or 714 with C or better
EPD	710	Current Research in Design	Review and critical evaluation of contemporary literature and research in design, environment and the arts.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisite: Design, Environment and the Arts PhD OR Design, Environment and the Arts (Digital Culture in Design) PhD OR Environmental Design and Planning PhD OR Environmental Design and Planning (Healthcare and Healing Environments) PhD

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EPD	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	201	Environmental Management	Develops an understanding of the fundamentals of environmental science, environmental issues and major environmental standards. Topics covered include basic ecology, population dynamics, environmental resources, environmental pollution and its prevention, the environmental management regulatory framework, sustainability, pollution prevention, waste minimization, and environmental management systems. Provides the foundational knowledge used by environmental professionals who manage environmental problem solving for industry, regulatory agencies, municipalities, consulting firms, military installations, academic institutions and nonprofit organizations specializing in environmental advocacy. Overview course covering elements that are developed in more depth in other ERM courses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	203	Environmental Regulations	Explains and discusses federal environmental laws and regulations that apply to the field of environmental management. Addresses the most important Arizona state and county/local regulations that impact decision making in the environmental management practice area. Emphasizes the federal-level requirements, including laws that are most likely to be used by professionals who are not lawyers and working in positions having environmental management and engineering assignments. Uses case studies to help students learn how the laws are applied and implemented in practical situations. Develops an understanding of the fundamentals of environmental laws and regulations. Provides essential knowledge used by environmental and engineering professionals who manage regulatory issue problem solving for industry, government, consulting firms, military installations, academic institutions and nonprofit organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): any SG or SQ course
ERM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	302	Water and Wastewater Treatment	Explores the development of treatment technologies for drinking water and wastewater.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116; MAT 170 or higher; PHY 111; PHY 113

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ERM	364	Toxicology/Biohazards/Emer Mgt	Introduces poisons. Dose response routes of exposure and toxicokinetics. Diseases associated with natural disasters. Clinical presentation of treatments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	401	Hazardous Waste Management	Definition of hazardous waste, RCRA and CERCLA regulations, hazardous waste classification system. Overview of hazardous waste management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher; ERM 203 or Environmental Engineering BSE major
ERM	402	Unit Treatment Technologies	Addresses various treatment technologies for contaminated air, water, and soil. Emphasizes design based upon medium, type of contamination, and concentration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 302 OR Visiting University Student
ERM	406	Environmental Chemistry	Applies basic chemical principles to understanding the reaction, fate and transport of chemicals in water, soil, air and living organisms. Considers major environmental issues in three areas: energy use and sustainable options to fossil fuels; atmospheric pollution including photochemical smog, ozone depleting substances, acid rain and climate change; and water pollution and water management options.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116; MAT 170 or higher
ERM	407	Occupational Hygiene	Overview of occupational health hazards, including recognition, evaluation, and control. Includes regulatory status and health standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher OR Visiting University Student
ERM	426	Environmental Issues	Explores the science and policy implications of contemporary problems that threaten the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	428	Intl Environmental Management	Examines environmental management issues faced by countries outside of the United States and compares approaches to solving these problems from a technological, economic and political basis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ERM 428 or ERM 528
ERM	432	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): MAT 170 or higher; minimum junior standing; Credit is allowed for only ERM 432 or ERM 494 (Integrated Solid Waste Systems) or ERM 532 OR Visiting University Student
ERM	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 203; ERM 302; Pre- or corequisite(s): ERM 402 OR Visiting University Student
ERM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		
ERM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6		Prerequisite(s): Barrett Honors student
ERM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6	L	Prerequisite(s): Barrett Honors student
ERM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	501	Prin of Hazard Mtrls/Waste Mgt	Foundation for courses in curriculum. Topics include definitions of toxic and hazardous substances and wastes, RCRA classification, and OSHA criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	502	Regulatory Framework/Toxic	Examines federal, state, and local regulations for hazardous materials and wastes. Includes history and trends in regulatory development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	503	Principles of Toxicology	Interaction of chemicals with life and environment. Mechanisms of toxic action, dose-response relationships, toxicity testing models, predictive toxicology, and epidemiology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	506	Chemistry of Hazardous Mtrls	Chemistry and toxicology of hazardous chemicals. Topics include proper handling, storage, transportation, and disposal.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	507	Industrial Hygiene	Emphasizes chemical hazards in industrial settings. Topics include recognizing and measuring hazards, control techniques, and regulatory standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	520	Sustainability/Sustainable Dev	Explores broad field of environmental sustainability with U.S. and international coverage of green living practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	522	Air Pollution & Toxic Chemical	Examines issues in the measurement analysis and control of toxic chemicals in air pollution.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	523	Soils/Grndwater Contamination	Theoretical and practical hydrogeology as it applies to cleaning up contamination. Investigative techniques, monitoring, risk assumptions, and assessment methodology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	527	Enviro/Resources Regulations	Environmental regulations related to water, land use, endangered species, NEPA and other policy issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	528	Intl Environmental Management	Studies environmental issues and laws outside the U.S., impact of free trade, and multinational corporations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 428 or ERM 528
ERM	532	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): Fulton Schools of Engineering or School of Sustainability or Urban and Environmental Planning graduate student or enrolled in ERM 4+1 program; Credit is allowed for only ERM 432 or ERM 532 or ERM 598 (Sustainable Solid Waste System)
ERM	533	Water/Wastewater Treat. Tech.	Covers the most essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies to graduates in environmental and resource management and other interested parties. Provides a fundamental basis for understanding sustainable water and wastewater treatment operations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework in the lectures to strengthen and emphasize the importance of adequate practices used in the management of engineered water and wastewater treatment systems. Incorporates lectures, field trips and professional guest speakers.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): graduate student in Ira A. Fulton Schools of Engineering, the School of Sustainability, or Urban Planning
ERM	535	Water Law and Policy	Regulatory framework that governs use of surface water and groundwater, including federal and state laws, interstate compacts and international treaties. Emphasizes the history and development of water resources in the and American West. Explores the impact of climate change, population growth and competing interests of sectors such as agriculture, municipalities, tribes and hydropower in terms of policy implications for water use.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	540	Intl Environmental Law/Policy	Studies international environmental agreements, enforcement mechanisms, and the role of NGOs and international organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	501	Social Theory and Environmnt	Investigates key conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	502	Political Ecology: Thry & Rsrc	Investigates key theories and research of political ecology through the conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	513	Institutions	Studies formal and informal institutional arrangements for the governance of natural resources using case studies, experiments, and formal models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
ESS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EST	210	Circuit Analysis I	Parallel/Series circuits, ohm's law, network theorems, capacitors/inductors and transient analysis. Overview of electronic devices, BJT's, FETs, op-amps.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisites: MAT 266 (or 271); PHY 112 (or 131)
EST	310	Circuit Analysis II	Electronic device analysis and introduction to design. Power supplies, diode circuits, FETs, BJT's, op-amps. Emphasizes frequency response.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210
EST	315	Digital Systems II	Digital electronics systems, HDL circuits and systems design techniques, and device applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 115 and 210; Credit is allowed for only EST 315 or 394 (Digital Electronics II)
EST	350	Microcontroller Applications	Interfacing of microcontrollers to sensors, switches, indicators, and other human interfaces using the C programming language. Applications involve the integration of both hardware and software. Also addresses applications dealing with open- and closed-loop applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 315; Credit is allowed for only EST 350 or 394 (Adv Micro Controllers)

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EST	370	Sensors	Overview of sensor technology, including mechanical, magnetic, radiation, thermal, chemical, and biological applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 200; EST 210; UET 331
EST	380	Electronic Devices	Covers materials, structures, and technology for the design, production, and application of the major categories of electronic devices.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: UET 331; Credit is allowed for only EST 380 or 394 (Intro to Electronic Devices)
EST	410	Electronic System Design	Analysis and design of Op-amps, power amplifiers, and digital logic families, Feedback design using frequency response. Computer analysis and design.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 310; Credit is allowed for only EST 410 or 494 (Electronics Systems Design)
EST	465	Statistical Process Control	Introduces statistics, seven QC tools, and control charts for data analysis and interpretation; process capability, 6-sigma, lean manufacturing, and quality system.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering undergraduate student; Senior standing; Credit is allowed for only EST 465, 494 (Statistical Process Control) or 565
EST	470	Capstone Design I	Small-group projects designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 345; EST 370; EST 372
EST	471	Capstone Design II	Continuation of a small-group project encompassing designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EST 470
EST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
EST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
ETH	100	Ethnic and Indigenous Lives	Undertakes an introductory comparative analysis of ethnic groups to understand cultural diversity within the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	
ETH	300	Principles of Ethnic Studies	Familiarizes students with a range of analytical and theoretical frameworks in the field of ethnic studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	
ETH	310	Critical Research Methods	Examines methodological approaches common to programs in such disciplines as American Studies, Ethnic Studies, and Women's Studies. Critical qualitative, historical, archival, and feminist methodological approaches to the study of diverse United States populations comprise the focus of this course.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Pre-requisite: Minimum 40 hours
ETH	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
ETH	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
ETH	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ETH	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
ETH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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ETH	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest)
ETH	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
ETH	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Mvt)
ETH	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
ETH	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
ETH	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or WST 469 or WST 494 (Trash, Freaks and SCUM) or JHR 598 (Trash, Freaks and SCUM) or MAS 598 (Trash, Freaks and SCUM)
ETH	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
ETH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
ETH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ETH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	
ETH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		

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EVE	214	Envr Engineer Mechanics	Concepts of engineering statics and dynamics in the context of environmental processes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): MAT 266; PHY 121 or 122 OR Visiting University Student
EVE	261	Intro to Environmental Process	Concepts of air, soil, water and sediment pollution; contaminant fate and transport; risk assessment; environmental laws and regulations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): CHM 116 OR Visiting University Student
EVE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	302	EnvEngineer Fundmntls:Phys/Chm	Physical and chemical processes in the environment emphasizing transport phenomena, aquatic chemistry and geochemistry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	303	Env Engineer Fundamntls Bio	Biological processes in the environment emphasizing environmental microbiology and biogeochemical cycles.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	304	Environ Engineer Processes Lab	Laboratory experiments and data analysis/interpretation of environmental engineering processes including water quality, water treatment, microbiology, air quality and geology.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	2		Prerequisite(s): EVE 302; EVE 303 OR Visiting University Student
EVE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	452	Fund Geoenvironmental Engin	Environmental laws and regulations, geochemistry and geotechnics, groundwater flow, and contaminant transport and fate in the environment. Addresses environmental sources of contamination, contaminated site characterization, risk assessment, in situ waste containment, and soil and groundwater remediation technologies. Soil and groundwater contamination and remediation topics are enhanced with case studies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 302; EVE 303
EVE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): minimum 45 hours
EVE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6		Prerequisite(s): Barrett Honors student
EVE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6		Prerequisite(s): Barrett Honors student
EVE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-7		Prerequisite(s): minimum 45 hours
EVE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-3		Prerequisite(s): minimum 45 hours
EVE	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	568	Environmental Risk Assessment	Risk assessment is an increasingly important set of tools used to inform environmental, engineering and public health regulatory decisions. Additionally, risk assessment can be used to navigate complex decisions and prioritize resource allocation when those resources are scarce. Framework for analyzing risks in engineering and environmental health applications including microbial, chemical and engineering failure risks. Probability and statistics concepts needed to complete a risk assessment including curve-fitting, Monte Carlo analysis, sensitivity analysis, and techniques for interpreting both sparse and large datasets. Additionally, summarizes the principles of toxicology and microbiology to inform case study projects. Explores risk perception, management and communication approaches for applications to multiple scenarios including water and wastewater treatment, indoor air quality and failure analysis.	N	IND	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student

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EVE	571	Water Quality Modeling	Identifies point and nonpoint source pollution in urban and agricultural watersheds, models the fate and transport of this pollution in watersheds, and evaluates strategies for their mitigation. Additionally, touches on water quality standards and the U.S. regulations governing the pollution sources and control strategies. Focuses on nutrient and sediment pollution of surface waters, but also introduces these concepts for other pollutants and groundwater systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student
EVE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
EVO	501	Current Topics in Ev. Biology	Broadly conceived presentation of papers and current research in evolutionary biology in a journal-club style format.	N	LEC	N	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EVO 501 or EVO 598 (Current Topics in Evolutionary Biology) or EVO 598 (Current Topics in Evolutionary Medicine)
EVO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)

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EVO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
EVO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	601	Principles of Evolution	Introductory course for graduate students; covers the principles of evolutionary biology from theoretical, empirical, and historical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	610	Research Areas of Evolution	Broadly conceived description of the current research areas of evolutionary biology. Expected of all first-year evolution students.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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EXW	101	Found of Health & Fitness Sci	Student-centered instructional course designed to excite and propel the student into the development of a successful academic and professional career path in the fields of health coaching, fitness or wellness. Presents a general overview of the career opportunities for students in the health and fitness fields with group and individual assignments that enable participants to more thoroughly explore options related to their goals. Divided into 3 major sections: academic preparation, professional development and career exploration. Assists students to develop their own individual blueprint for accomplishing their professional goals and understand the skills they need to develop along the way to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 101 or EXW 290 or EXW 300 OR Visiting University Student
EXW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	214	Flex Instruct Comp Lab	Science and methods of instruction related to flexibility exercises and activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	215	Resistance Training & Recovery	Detailed instruction designed to teach students to safely and properly perform a variety of muscular strengthening exercises. Introduces and reviews fundamental principles of physiology and kinesiology underlying the ability to properly perform a wide variety of resistance training exercises and to properly instruct individuals of varying ages and physical abilities in safe and effective performance of those movements. Additionally, covers the purpose for the cool-down and recommendations for recovery techniques to allow participants to prepare for additional bouts of physical activity.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	216	Musc Str Instr Comp Lab	Science and methods of instruction related to resistance training and muscular strength activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	217	Cardio & Flexibility Training	Comprehensive foundational course designed to teach students how to safely and effectively instruct a wide variety of cardiorespiratory and flexibility exercises one-on-one, and to groups of individuals of varying ages and physical abilities. Provides a basic understanding of the effects of cardiorespiratory exercises on the body and the general scientific principles relative to improving cardiorespiratory fitness. Prepares students to assess joint range of motion and provide specific recommendations for flexibility routines designed to increase joint range of motion and improve the comfort of a client participating in physical activity programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	218	CV Instruct Competency Lab	Science and methods of instruction for cardiovascular exercise and fitness activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	302	Fundamentals of Wellness	Overview of fundamental health, exercise and wellness concepts. Emphasizes personal wellness assessment and application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	
EXW	321	Consumer Health	Provides preprofessional primary/secondary educators and community health education specialists with (1) a model for making informed consumer health-related decisions; (2) current information involving consumer related topics, emphasizing necessity of current information for making informed decisions; (3) mechanisms for continued consumer awareness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361)
EXW	325	Fitness for Life	Analyzes physical fitness and benefits of exercise with emphasis on application of strategies for fitness and wellness evaluation, behavior change, and lifelong program planning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101; minimum 30 hours OR Visiting University Student
EXW	330	Kinesiological Found of Mvmt	Study and consideration of human movement with emphasis on kinesiology principles and their application to movement and fitness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): BIO 160 or 201 with C or better; Pre- or corequisite(s): EXW 101 or KIN 101 with C or better if completed OR Visiting University Student
EXW	331	Violence Prevention	Examines violence prevention strategies and violence prevention content. Examines the literature to understand principles for use in the development of violence prevention curriculum in school and community settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)

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EXW	335	Phys Activity & Physio Concept	Specifically designed instruction in human physiology for the health and fitness professional with focus on application of basic exercise physiology and bioenergetics in the design and implementation of exercise and physical activity programs to increase physical function and improve overall health.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EXW	342	Health Behavior Change	Examines major theories of health behavioral change. Develops intervention strategies and techniques employed to facilitate health behavioral change.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 45 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
EXW	344	Phys Activity in Hlth&Disease	Examines the influence of physical activity and fitness on the development of chronic disease and improvement in life expectancy.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better OR Visiting University Student
EXW	351	Substance Abuse Prevention	Prepares preprofessional primary/secondary school and community health educators to prepare and deliver substance abuse prevention education and programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 251 (or EXW 312) or EXW 351
EXW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	400	Stress Management for Wellness	Examines the stress response and management from a behavioral perspective as it pertains to individuals or groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 60 hours OR Visiting University Student
EXW	412	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)
EXW	420	Exercise Testing	Theoretical basis and practical application of pre-exercise screening, exercise testing, estimates of energy expenditure, and interpretation of results.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s) with C or better: EXW 214; EXW 216; EXW 218; EXW 330; SSP 315 (EXW 315); SSP 316 (EXW 316); minimum 60 hours OR EXW 215; EXW 217; EXW 330; KIN 340; KIN 352; minimum 60 hours OR Visiting University Student
EXW	425	Exercise Rx Hlth & Wellness	Comprehensive course allowing students to learn and apply the principles of exercise prescription for individuals of various ages, fitness levels and health states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 335 or SSP 315 (EXW 315) with C or better OR Visiting University Student
EXW	442	Motivational Interviewing	Provides a structure for understanding, critiquing and application of core concepts associated with motivational interviewing. Assigns each student to formally interview a volunteer, review the audio/visual stream, and evaluate the efficacy via accepted software and hardware instruments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 or EXW 342 with C or better; Credit is allowed for only EXW 442 or EXW 494 (Motivational Interviewing)
EXW	446	Worksite Wellness	Provides insights and tools to effectively promote the transformation of workplaces into communities that care for their employees while improving productivity and moderating increases in health care costs through sustainable wellness programming.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 with C or better; Pre- or corequisite(s): EXW 342
EXW	450	Soc Deter of Health and Beh	Examines the social determinants (e.g., early childhood, family, schools, worksites, built and food environments, and socio-economic status) of health and health behavior, particularly physical activity behavior and eating.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	(L or SB) & C	Prerequisite(s): minimum 60 hours OR Visiting University Student
EXW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Wellness major; EXW 420 with C or better; minimum 2.00 GPA OR Health Education and Health Promotion major; EXW 284 with C or better; EXW 476 (or EXW 436) with C or better
EXW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
EXW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
EXW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		

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EXW	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	501	Research Statistics	Statistical procedures; sampling techniques, hypothesis testing, and experimental designs as they relate to research publications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	510	Obesity Persp and Prescrip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. In addition, explores applications for prevention and treatment of obesity. Challenges students to examine a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410)
EXW	530	Theory Applic Resis Training	Critical analysis of the theories and mechanisms of resistance training with application for the development of resistance training programs for a variety of populations and outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 530 or SSP 460 (or EXW 460) or EXW 598 (Resistance Training Application and Theory) or EXW 598 (Theory of Strength Training)
EXW	534	Sports & Fitness Conditioning	Bases of sports and fitness conditioning, including aerobic and anaerobic power, strength, flexibility, and analysis of conditioning components for sports and fitness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 434 or EXW 494 (Sports and Fitness Conditioning) or EXW 534
EXW	535	Adv Exercise & Prescription	Theory and practice of laboratory methods in applied exercise physiology. Procedures for assessment and prescription for individuals with chronic disease.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	536	Physiological Aspects/Phys Act	Role of physiological mechanisms associated with acute and long-term physical activity and its influence on chronic disease and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	538	Obesity, Exercise and Health	Critically examines scientific and medical evidence concerning obesity, exercise, and health across the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	540	Mindfulness, Stress and Health	Overview of the theory, measurement, research and efficacy of mindful awareness practices and programs on stress reduction, health outcomes and health behavior. Includes an experiential learning component focused on practices and content consistent with mindfulness-based stress reduction.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 540 or EXW 598 (Mindfulness Stress and Health)
EXW	542	Health Promotion	Theory and research concerning fitness and wellness programs in nutrition, physical activity, smoking cessation, and stress management.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	544	Fitness/Wellness Management	Development of the fitness/wellness industry. Planning, organizing, promoting, and managing fitness/wellness programs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	554	Plan Implem Health Promotion	Covers selected topics in health promotion across a variety of domains of health. Program planning concepts include the application of planning frameworks, needs assessments, and theory in health promotion program planning and development. Also focuses on practical issues related to health promotion program implementation such as implementation planning, resource management and program marketing. Also covers process evaluation and quality improvement strategies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 554 or HEP 454 (EXW 454)
EXW	556	Program Eval Health Prom	Comprehensive and systematic introduction to the key concepts and methodologies of program evaluation, specifically related to health programs. Discusses approaches to program evaluation in relation to the program's stage of development, resources and informational needs for decision-making. Focus includes program evaluation literature related to physical activity and nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 556 or EXW 598 (Program Evaluation)
EXW	560	Cardiopulmonary Rehab	Exercise testing and prescription for cardiac and pulmonary patients as well as pharmacology, electrocardiography, pathophysiology of chronic diseases, and leadership of patients in cardiac rehabilitation and pulmonary rehabilitation programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	562	Funct Assmt Ex Presc Older Adu	Assessment of functional capacity and prescription of exercise that is appropriate for older adults including healthy, frail, diseased and very old.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Clinical Exercise Physiology or Exercise and Wellness major

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EXW	564	Aging and Lifestyle Behav	Provides an overview of health behaviors in older adults. Centers on the perceptions and behaviors of older adults in reference to illness prevention, health promotion and reactions to acute and chronic illness and the context in which these behaviors occur. Specifically examines the psychological, familial, cultural and contextual factors which influence older adults' personal health practices and illness behaviors. Considers the older person as an individual in a complex system, engaged in decision making and his/her subsequent actions to maintain or improve health status. Solidifies concepts through the use of in-class case studies and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 542
EXW	565	Cardio-Pulmonary Physiology	In-depth study of the physiology of exercise with special regard to cardiovascular and pulmonary responses in healthy and chronically diseased individuals.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Clinical Exercise Physiology MS students
EXW	568	Mgmt Trtmt Chronic Disease CEP	Investigates the physiology, pathophysiology and treatment options for a variety of diseases that the clinical exercise physiologist routinely encounters in the work environment. Prepares students to qualify for ACSM Clinical Exercise Physiologist certification.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 560
EXW	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	597	Capstone Project	For non-thesis students in the MS degree program to provide a culminating field experience or non-research project for students to apply the coursework and healthy aging concepts.	N	RSC	N	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): EXW 500; EXW 501; EXW 536; EXW 542; EXW 591
EXW	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	635	Physical Activity and Aging	Examines and discusses the theoretical and applied health-related research on physical activity and aging.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	640	Analy of Variance for Exercise	Analyzes variance methods with an emphasis on research measures of human performance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	641	Qualitative Research Methods	Introductory overview of qualitative research methods frequently used in education and health. Emphasizes analysis of research and practical application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	642	Exercise Epidemiology	Physical activity, exercise, and physical fitness and the development of chronic disease.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500 with C or better; EXW 501 with C or better
EXW	643	Correlation/Regression/Multiva	Graduate-level statistics course for PhD/master's students who will be doing research in the area of exercise and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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EXW	645	Adv Applied Methods & Analysis	Heavily applied focus on implementing research methods and statistical modeling techniques in the health promotion sciences. Addresses practical issues in specifying, interpreting and presenting research findings using appropriate statistical techniques. Addresses reporting standards (e.g., CONSORT, STROBE, PRISMA) and practical issues related to manuscript submission. Covers analytical methods including multiple regression and logistic regression, ANOVA, mediation and moderation, exploratory factor analysis, multilevel models for hierarchical data and intensive longitudinal data, basic time-to-event analyses (i.e., survival), and meta-analysis; also remains flexible to address critical and emerging methodologies in the health promotion sciences. Covers statistical methods in a conceptual nature with a focus on the use of statistical software packages (primarily SPSS) and interpretation of outputs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 640
EXW	655	Phys Activity Public Health	In-depth analysis of the role of physical inactivity as a public health problem and public health approaches to the study and practice of increasing physical activity. Includes analysis of public health strategies for increasing physical activity at the community, national and international levels.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 655 or EXW 598 (Pa Pub Health)
EXW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	701	Advanced Research Methods	Provides doctoral students in Nutrition and Health Promotion with instruction in methods to enhance scientific writing skills in the health sciences and guidance through the process required to organize and submit a fundable research grant proposal.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 700
EXW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
EXW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	101	Personal Growth Human Relatnsp	Personal development and behavior as related to competency in interpersonal relationships with the family. Processes of family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshman Standing; Maximum 25 hours
FAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
FAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	301	Introduction to Parenting	Integrated approach to understanding parenting and parent-child interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		

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FAS	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
FAS	331	Marriage/Family Relationships	Issues, challenges, and opportunities relating to present-day marriage and family living. Factors influencing interrelations within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	332	Human Sexuality	Relationship of sexuality to family life and to major societal issues. Emphasizes developing healthy, positive, and responsive ways of integrating sexual and other aspects of human living.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	361	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student
FAS	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student
FAS	390	Supervised Research Experience	Practical, firsthand experience within current faculty research projects in family studies or child development. Y grade only; may be repeated for total of 6 hours.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
FAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	410	Military Families	In-depth overview of recent research, issues, trends relating to military families and the interactions within the military culture and societal cultures.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 101 or PSY 101 or SOC 101; minimum 30 hours OR Visiting University Student
FAS	435	Adv Marriage/Family Relatshps	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
FAS	436	Sexuality Mid-Life & Beyond	Analyzes physical changes, myths and stereotypes, gender issues, and relationship issues pertaining to sexuality in the middle and older adult years.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 60 hours; 6 hours of PSY and/or SOC courses
FAS	440	Fund Marriage/Family Therapy	Introduces the fundamental orientations of marriage and family therapy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
FAS	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
FAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
FAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student
FAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
FAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
FAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	503	Academic Professional Dvlpmnt	Becoming and working as a academic, including how to write a vita, choose a thesis topic, or find dissertation data.	N	REC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 505

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FAS	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 507
FAS	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 508
FAS	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 509
FAS	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
FAS	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
FAS	531	Theoretical Issues Family	Historical and current approaches to theory development, evaluation, and application in family studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	539	Rsch Issues in Family Interact	Critical review of current and past research in the area of family dynamics. Emphasizes interactional processes within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	570	Introduction to MFT	Introduces major marriage and family therapy orientations. Reviews history, theory, application, and outcome research for each orientation.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	571	Assessment in MFT	Assessment and outcome evaluation of couples and families involved in marital and family therapy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	572	Advanced Techniques in MFT	In-depth review of assumptions and advanced techniques associated with contemporary marriage and family therapy approaches.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	573	Dysfunctional Families	Critical review of current theory and empirical evidence connecting marital and family interaction patterns with aberrant behavior.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	574	Family Theory for MFT	Examines the theoretical orientations within the family therapy field, including the evolution, premises, and assumptions of each.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	575	Appl Issues in Couples Therapy	Examines issues unique to therapeutic work with couples, including lifespan transition, multicultural issues, divorce, parenting, and remarriage. Seminar. Enroll requirements: Pre-requisites: Admission into MAS-MFT program.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	576	App Iss in Hum Dev MFT Psych	Recognition and diagnosis of maladaptive behavior according to DSM criteria across human development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	577	App Iss in Child & Ado in MFT	Examines developmental factors that lead to disorders in children and adolescents, with an emphasis on a systemic framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	578	Issues in Sexuality for MFT	Examines the major methods used to assess and treat sexual issues and the treatment of sexual disorders.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	579	Applied Research in MFT	Critical examination of research concepts, quantitative and qualitative research designs, and applicability in clinical settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	581	Professional Issues and Ethic	Examines legal and ethical concerns of marriage and family therapists, emphasizing licensing standards and the Code of Ethics.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student

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FAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
FAS	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587
FAS	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588
FAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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FAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	123	ASU Financial Literacy	A practical approach to financial challenges faced by ASU students. Emphasizes financial choices likely to be encountered while at ASU, as well as issues to be encountered immediately upon graduation. Topics include credit cards, student loans, credit scores, saving, investing, insurance, transportation, housing, taxes, goal setting and budgeting.	N	LEC	N	YGB	W. P. Carey School of Business	Department of Finance	1		Credit is allowed for only FIN 123 or 191(ASU Financial Literacy)
FIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	300	Fundamentals of Finance	Theory and problems in financial management of business enterprises.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: ACC 231, 232 or 261; ECN 212; ECN 221, ECN 231, IEE 380 or STP 280; MAT 211, 266 or 271; Non-Bus: min 2.50 GPA; min 56 hrs; Pre/coreqs: ACC 241, 242 or 271; Credit allowed for only FIN 300, 302 or 303 OR Visiting University Student
FIN	302	Managerial Finance	Theories and techniques used for business decisions in working capital management, capital budgeting, financial control, and long-term financing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: WPC Finance major; ACC 231, 232, 261; ECN 211, 213; ECN 212, 214; ECN 221, 231; MAT 211, 266, 271; Pre/coreqs: ACC 241, 242, or 271 w/C or better if complete; Credit allowed for only FIN 302 or 303 OR Visiting University Student
FIN	303	Honors Finance	Covers basic principles of finance, practical tools for financial decision making, and evaluation methods employed by the firm.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s) with C or better: WPC Honors student; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211 or 271; Pre- or corequisite(s): ACC 241, 242 or 271 with C or better if completed; Credit allowed for only FIN 302 or 303
FIN	331	Financial Markets/Institutions	Analyzes financial markets and intermediaries. Theory of financial intermediation, interest rate theory, money and capital market instruments, and government regulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: W.P. Carey BS major or Business minor; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211, 266, or 271; Pre/coreqs: ACC 241, 242, or 271 with C or better if completed OR Visiting University Student
FIN	361	Advanced Managerial Finance	Builds on FIN 302. Advanced material on capital budgeting, cost of capital, CAPM, asset valuation, capital structure, and financial policy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey Finance BS student; FIN 302 with C or better OR Visiting University Student
FIN	380	Personal Financial Management	Dynamic analysis of personal financial planning, including time value of money, stock and bond investment, and retirement and estate planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student; Not for Finance major credit OR Visiting University Student
FIN	385	Personal Insurance Planning	Fundamentals of personal risk and insurance. Understanding and evaluating personal insurance coverage. Helpful for an insurance license.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300 or 302 with C or better OR Visiting University Student
FIN	386	Estate Planning Strategies	Estate planning concepts, issues and strategies. Evaluates a personal estate plan and identifies needed components. Planning for client objectives and wealth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300 or 302 with C or better; FIN 380 with C or better; Pre- or corequisite(s): FIN 385 with C or better if completed OR Visiting University Student

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FIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey BS non-Finance major; FIN 300, 302 or 303 with C or better
FIN	420	Personal Portfolio Management	Managing a portfolio of securities through the investment process. Valuing stocks, bonds, managing risk, and considering tax and inflation consequences.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; FIN 300 or 302 with C or better; FIN 380 with C or better OR Visiting University Student
FIN	421	Security Analys Portfolio Mgmt	Security analysis theory and practice. Selection and management of financial asset portfolios. Securities markets and portfolio risk-return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better; FIN 331 with C or better OR Visiting University Student
FIN	427	Derivative Financ Securities	Study of stock options, index options, convertible securities, financial futures, warrants, subscription rights, and arbitrage pricing theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better; FIN 331 with C or better OR Visiting University Student
FIN	431	Management of Financial Insts	Asset/liability and capital management in financial institutions. Influence of market factors and regulatory agencies. Emphasizes commercial banks.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey Finance BS major; ACC 340; FIN 303 or 361 with C or better; FIN 331 with C or better OR Visiting University Student
FIN	455	Entrepreneurial Finance	Examines principles of entrepreneurial finance with a focus on the underlying economics and institutions involved. Provides insight into evaluating new ventures and practical financial tools for the entrepreneur.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey Finance BS major; ACC 303, 315, or 340 with C or better; FIN 303 or 361 with C or better; FIN 331 with C or better; Credit is allowed for only FIN 455 or FIN 494 (Entrepreneurial Finance) or FIN 555
FIN	456	International Financial Mgmt	Exchange rate determination, financial markets, managing multinational corporations, capital budgeting, and hedging currency risk exposure from an international perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	G	Prerequisite(s): W.P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better; FIN 331 with C or better. OR Honors student in Finance: FIN 303 and 331 with C or better
FIN	460	Personal Fin Cases & Modeling	Capstone course. Case method training to simulate situations as a financial planner for self and for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; ACC 435 with C or better; FIN 385 with C or better; FIN 386 with C or better; Pre- or corequisite(s): FIN 420 with C or better if completed
FIN	461	Financial Cases and Modeling	Case-oriented capstone course in managerial finance. Contemporary issues of liquidity management, capital budgeting, capital structure, and financial strategy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	L	Prerequisite(s): Finance BS student; ACC 340 with C or better FIN 303, 331, or 361 with C or better; minimum 87 hours; Pre- or corequisite(s): FIN 421 with C or better if completed OR Visiting University Student
FIN	471	SIM Fund	Under faculty supervision, students manage over \$500,000 of the ASU Foundation's assets over the course of the year. Must take for a total of 3 hours.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): FIN 303 or 361 with C or better OR Visiting University Student
FIN	472	Invstm Bnk Industry Schol	Provides conceptual basis for performing analysis, providing advice and making decisions in elite financial services firms. Must take for a total of 3 hours.	N	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): application and selection process; Credit is allowed for only FIN 472 or FIN 494 (Investment Banking Industry Scholars)
FIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): W.P. Carey BS student; FIN 300, 302 or 303 with C or better
FIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-6		Prerequisite(s): Barrett Honors student
FIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Finance	1-6	L	Prerequisite(s): Barrett Honors student
FIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisites: W.P. Carey Finance BS student; ACC 315 or ACC 303 or ACC 340, FIN 331, and FIN 303 or FIN 361 all with C or better OR Visiting University Student

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FIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Pre-requisites: W. P. Carey Finance students with professional status
FIN	501	Basics of Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree-seeking graduate student
FIN	502	Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2-4		Prerequisite(s): ACC 502 with C or better; ECN 501 with C or better
FIN	509	Quantitative Methods Fin I	Empirically investigates properties of financial data such as basic probability theory, matrix algebra, ordinary least squares, and maximum likelihood estimation. Explores these methods both through algebraic derivation and programmed implementation in PYTHON. Provides the basis for portfolio optimization by focusing on the estimation and testing of financial factor models.	N	SEM	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student
FIN	520	Valuation Techniques	Improves the understanding of valuation concepts and how to apply them. Shows how to value assets using free cash flow and economic value-added methods.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	525	Investment Strategies	Presents the fundamental principles of risk and return, portfolio diversification, asset allocation, efficient markets, active portfolio management, portfolio evaluation. Reviews selected alternative investment strategies such as hedge fund investments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	530	Derivatives	Intermediate- to advanced-level course in derivative assets such as options, forward and futures contracts, swaps and financial engineering.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	535	Quantitative Methods Fin II	Investigates financial data by using techniques such as autoregressive and vector-autoregressive models, dimension-reduction techniques motivated by latent factor models and machine learning dimension-reducing techniques. Explores these methods using algebraic derivation and implementation in PYTHON. Builds on the statistical and programming skills developed in FIN 509 and emphasizes forecasting for the optimization of portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student; FIN 509; Credit is allowed for only ECN 502 or FIN 535
FIN	540	Advanced Financial Management	Offers a comprehensive exploration of the revolutionary developments occurring in the world's financial markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	545	Advanced Corporate Finance	Studies major decision-making areas and selected topics in corporate finance. Attempts to develop decision-making ability in these areas using both lectures and cases.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 545 or 591 (Advanced Corporate Finance)
FIN	550	Fixed Income	Intermediate- to advanced-level course in fixed income instruments and associated relative valuation of the securities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	555	Entrepreneurial Finance	Provides an overview of the economics and institutions involved in entrepreneurial finance. Focuses on the financing of new ventures. Consists primarily of case analysis, supplemented with in-class exercises and lecture material.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 455 or FIN 494 (Entrepreneurial Finance) or FIN 555
FIN	560	International Finance	Examines the financial issues of an international investment decision. Main topics include foreign exchange market, investment alternatives in the international capital markets, and the management of foreign exchange risk.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	565	Risk Mgmt in Banks & Fncl Inst	Provides a risk management view of financial institutions (also known as financial intermediaries). Traditionally, banking courses have focused on an overview of the financial services industry, sector by sector, concentrating on balance sheet presentations and overlooking management decision making and risk management. In contrast, this course emphasizes a risk management approach.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	575	Finance Capstone	Provides a culminating experience as a step in completing the degree. Applies finance principles related to the investment, risk management and financing policies of the firm to develop decision-making ability in these areas. Emphasizes analysis of finance problems through selected readings and case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 575 or 591 (Finance Capstone)
FIN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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FIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): FIN 502 with C or better
FIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	781	Theory of Finance	Fundamental tools of financial economics; asset pricing, arbitrage, option pricing, capital structure, dividend policy, asymmetric information, and transaction-cost economics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	782	Theory of Finance II	Fundamentals of corporate finance, contract theory, agency problems, and game theory applications in Finance.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	783	Empirical Asset Pricing	Asset pricing models in finance; efficient market hypothesis, empirical factor models, option pricing basics.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	785	Financial Econ of Cap Mkts	Asset pricing theory, equilibrium asset pricing models, and the equity premium puzzle; incomplete and imperfect markets.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	786	Corporate Finance	Issues in corporate finance covering topics that impinge on corporate finance, financial contracting, intermediation; empirical corporate finance; microstructure.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIS	101	SFIS: The ASU Experience	Welcomes freshman students enrolled in the Innovation in Society major at ASU. Introduces the array of resources available to them as ASU students, stimulates them to reflect on their choice of major, and provides an opportunity to hear about the career trajectories and interests of faculty and alumni from the School for the Future of Innovation in Society. Capped at sections of 20 students to promote discussion and a sense of community.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		
FIS	111	Welcome to the Future	Explores the ways in which the future inspires, shapes and motivates the present. Illustrates how possible futures are used by people and institutions to advance agendas, shape conversations and sell products. Examines how science, technology and other forces are mobilized to create change. Empowers students to play a role in shaping our collective future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		

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FIS	201	Innovation in Society	Examines the vast implications of innovation, why it is so powerful, and why it really matters. Introduces the theories and processes of innovation as they relate to socio-political change. Students gain knowledge about the history and future of innovation and explore how innovation is entangled with social, political and ethical issues. By identifying and applying analytical tools, students learn to account for the diverse workings and effects of innovation. This course strives to debunk the myth that innovation happens automatically. Rather, different actors rally to create innovations that shape our society, economy and cultures--and that those innovations are not inevitable and could be otherwise.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	H	
FIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	305	Ways of Knowing	Students research, beginning with the concept of research itself and its various purposes, highlighting knowledge and how it is created in different disciplinary approaches. Exposes historical and philosophical underpinnings of how research is conceptualized, presented and implemented, including what constitutes information, knowledge and evidence. Introduces material that is in a traditional research design and methodology course; however, the emphasis uniquely focuses on knowledge creation, innovation, the nature of disciplinary knowledge and its impact on society. Explores the epistemological differences in problem identification and approaches to inquiry in the disciplinary perspectives of engineering, the sciences and in the social sciences.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): minimum 45 hours
FIS	307	Navigating Futures	Foresight methods and their potentials as entry-points into public discussions about near- and mid-range technoscientific developments. Four elements constitute the organizing axis of the course: (1) the history of foresight exercises in government agencies and business organizations; (2) the methods of four forms of foresight exercises (technology foresight, science and technology studies, anticipatory governance and scenario development); (3) a comparative assessment of these dominant forms; and (4) a group-based application exercise using one of the foresight methods.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	308	Politics, Markets, and Innovat	Studies the roles that governments, markets and other factors play in promoting, disseminating and regulating science-based technological innovation. Includes examining the theoretical literature on factors that structure markets and shape diffusion, as well as case studies that illustrate the processes and mechanisms that govern innovations in society. In addition to studying the role of governments, firms and universities, also considers the role of publics as consumers who adopt innovations but also as citizens who may be skeptical of them. Includes case studies in agriculture, health care, biotechnology and digital rights.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	331	Technology and the Modern Worl	Explores how technological systems are developed and embedded in the modern world with an eye to playing a role in creating better futures. Examines how machines and techniques can shape institutions, relationships and values. Challenges students to envision futures that they want and work to develop strategies for moving us (and our systems) toward those futures. Analyzes technologies past, present and imagined, and describes the ways in which technologies shape our world and the ways in which we shape those technologies. Through repeated practice in class students play a productive role in and even facilitate conversations that tease out the relationships between values and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours

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FIS	332	Risk and the Future	Examines the evolving global risk landscape that is resulting from rapidly increasing global connectivity, tight coupling and massive complexity. Develops an understanding of how innovation in society is changing the risk landscape and considers how innovation in approaches to risk can help navigate this emerging landscape. Topics include technological risk, sociopolitical risk, catastrophic risk, existential risk, converging technologies, perception and uncertainty, anticipation, precaution, uncertainty and risk innovation.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): minimum 45 hours
FIS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334
FIS	335	Designing Knowledge	Provides a foundational understanding of how social organizations make and use knowledge. From research laboratories to biotechnology companies to statistical agencies, many organizations are specifically designed to be knowledge enterprises, enterprises whose primary purpose is to produce knowledge. All organizations in modern societies also operate knowledge systems: systems whose purpose is to create, validate, circulate, communicate and apply knowledge in the making of decisions. Examines how these forms of organization work and contribute to modern societies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	336	Science and Technology Policy	Science and technology are powerful forces in the modern world. They have been hailed as a way to address everything from world hunger to old age. This does not, however, happen automatically, nor does it always work out the way one presumes. Governments make numerous decisions that affect the direction and application of science and technology, and government policies are affected by a myriad of social, political, and cultural factors. This class will explore the variety of ways in which governments make these policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures. Governments around the world have coalesced around the idea that science and technology are necessary for the promotion of the good life. We will examine how they put this idea into action by looking at five interrelated topics: Food, Security/Military, Health, Economy, and Sustainability.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	337	Innovation and Global Developm	Persistent inequality and poverty continue to plague nations including the USA even in the 21st century. Global development is a complex idea that attempts to address interrelated paradigms of culture, economy, equity, governance, history, societal dynamics, as well as technological issues. Using the framework of the Sustainable Development Goals 2030 (SDGs) this course examines, analyzes and critiques indicators of SDGs as well as explores innovative measures of development that nations around the world are planning and implementing in order to improve the lives of their citizens now and for the future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	351	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student

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FIS	371	Impact Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Innovation allows for amazing possibilities, and within each one of us is the potential to create, apply, research and scale innovation to realize impact goals. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on what constitutes and how one achieves sustainable and scalable outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	372	Inquiry Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on meaning making, grounded claims, and what it means to gather, analyze, construct and advance meaningful assertions and storied truths that advance productive claims about the potential of an innovation to realize impact goals.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours
FIS	373	Innovation Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a focus on imagining, designing, developing and optimizing a particular innovation such that it is likely to realize impact goals. Beyond product-centric perspectives that locate change within the innovation, this journey emphasizes an ecological perspective that positions innovation as a shared accomplishment distributed across the designed innovation, engaged participants, prepared facilitators and a responsive ecosystem.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	403	Governing Emerging Technologie	Examines the variety of ways in which societies make collective decisions or govern science and technology. Focuses on a particular category of science and technology; the set of emerging technologies like nanotechnology, artificial intelligence and robotics, genetic modification and synthetic biology, cognitive science and neurotechnology, geoengineering, and others that pose particular problems of high stakes, high uncertainty and ambiguous novelty. Closely allied with the research agenda of numerous faculty in the School for the Future of Innovation in Society, especially those in the Center for Nanotechnology in Society, the Risk Innovation Lab, and others; exposes students to inquiry and skills directly from the research front. Students perform numerous research tasks.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	431	Technology, Security and Insec	Focuses on the international political aspects of technological change; examines the impact of technological innovation and political change on the international political system. The overall goal is to create an awareness of and ability to analyze and synthesize world events, the particular role of technology, and consider the myriad ways that globalization and technology as a main driver could be changing the international system of nation-states. Technological innovation often takes place within a political context, including international politics, as nation-states and other entities develop technologies within the context of competition and power. There are several issues that run throughout the course as major themes. One is the role of technology in political and social change, and the impact of the latter on the former.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours

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FIS	432	Prob Solving-StrategicThinking	Students learn how to ask questions, brainstorm and communicate ideas, while dealing with uncertain outcomes and unpredictable risks caused by the ideas and solutions they propose. In understanding which ideas and solutions stick and which don't, students learn how different factors influence the birth, life and death of ideas and the socio-technical systems in which ideation exists. Does it matter who asks the questions and proposes the ideas, who is trying to participate, who was there first, if there is a profit or other conflicting motive and the context and the interests that result in certain solutions being picked over others? This course uses exploration learning approaches, where students follow a progression through what they discover, from understanding who they are as individuals, to how ideas are formed and hypothesis made about proposed solutions.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
FIS	480	Innovation Studio	Facilitates experiential learning and allows students to work with clients in the field of technology, innovation and sustainability. Through team projects with identified stakeholders, students engage, plan, design, implement and assess projects while learning interpersonal skills and managing client relationships. Students gain real-world experience and develop skills in project management, including planning, implementing and evaluating a complete project cycle. Allows students to manage both client-based projects and team relationships to complete projects. Students carry out project-based research, conduct interviews and meetings, make site visits, develop work plans and scope of works, negotiate clear deliverables with clients, implement projects and give public presentations. Presentations are grounded in the idea of conducting effective science communication.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 305
FIS	481	Application Journey	As a culminating experience, course brings together the previous experiences and emerging expertise to investigate, innovate and cultivate an impact innovation to achieve impact goals. Starting with building a grounded appreciation for a particular impact outcome, participants then design an innovation to realize a better future state, grounding this work in lessons with respect to logic models, design fictions, agile startups, and rapid prototyping. Some participants simply test a component and produce a reflective analysis, while others expand credit requirements and iterate to achieve transformative outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 371; FIS 372; FIS 373
FIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		
FIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6		Prerequisite(s): Barrett Honors student
FIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6	L	Prerequisite(s): Barrett Honors student
FIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-7		
FIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-3		
FMP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	201	Film: The Creative Process I	History, elements, and techniques of theatrical film: cinematography, directing, acting, scriptwriting, producing, and criticism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	

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FMP	220	Film & Media Post-Production I	Required 45-hour lab designed to teach students how to use the Avid Media Composer editing program and supporting software with an emphasis on editing techniques and workflow. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor. Satisfies the Media Composer 100-level certification as part of Avid's official curriculum. Upon completion of this course, students take an exam to become an Avid Certified User.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production student OR Visiting University Student
FMP	222	Education in Film	Critically examines how teachers, students, administrators and educational issues are dramatized and represented in popular media. Explores professional teacher preparation, socio-cultural contexts of education systems and learning, and the use of cinema as social critique.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	L	Prerequisite(s): ENG 101 (or ENG 102) with C or better. Credit is allowed for only FMP 222 or FMP 294 (Education in Film)
FMP	225	Intro VFX	Introductory look into the theory and practice of creating visual effects for film, television and games. Focuses on principles of 2D visual effects as derived and modernized from traditional special effects practices as seen in pre-digital film making. Students view, discuss and critique effects from films in the 20th and 21st centuries and engage in the creation of visual effects shots in a variety of styles employing a number of standard techniques. Covers the use of Adobe Photoshop and After Effects; however, considers some use of 3D applications in the second half of the semester. At the heart of good visual effects is a critical eye and attention to detail that is gained through critique of professional and student works on a weekly basis.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 225 or FMP 394 (Introduction to Visual Effects)
FMP	240	Intro Animation	Introduces history, theory, technique and practices of 2D and 3D animation. Covers types of animation and how to create projects for a broad variety of end uses (e.g., motion graphics, TV/film, Web, games). Students create short projects that serve as exercises to study animation techniques as well as more in-depth projects of student design.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 240 or FMP 294 (Introduction to Animation)
FMP	250	Ethics Survey Film & TV	Sex and violence portrayals in media; examines societal evolution, technological development, market imperatives, production codes, and industry realities and practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		
FMP	255	Media Authorship	Surveys the manipulation, editing, compression, encoding and search engine optimization of digital sound and video media.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	CS	Credit is allowed for only FMP 255 or FMP 294 (Media Authorship) OR Visiting University Student
FMP	261	Principles of Screenwriting	Explores fundamental skills of script writing for entertainment industry screen media, including: standard script writing software, formatting and technical standards; exercises in character creation and dramatic conflict; and analysis and understanding of common narrative structures of feature-length, series and short-form content.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
FMP	280	Intro to Film/Media Production	A hands-on production course where students learn first-hand how to make films in a structured, informative environment that works through all phases of production, focusing on collaboration and application of basic mediamaking skills and technology.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Credit is allowed for only FMP 280 or FMP 294 (Intro to Film Production)
FMP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	300	Focus on Film	Specialized study of prominent film artists, techniques, and genres. Emphasizes the creative process.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	318	Directing for Film and Media I	In-depth analysis of directing theory, textual analysis, visualization, shot composition and spatial connection, staging, rehearsal techniques, and camera movement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) major; FMP 300 with C or better OR Visiting University Student
FMP	320	Film&Media Post-Production II	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and equipment, basics of visual and audio effects and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) major; FMP 220 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student

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FMP	325	Guerilla VFX	Offers the opportunity to work with a broad variety of projects with assets ranging from excellent quality to those that are more difficult to work with. In addition to work with pre-prepared assets, students also get the opportunity to create their own effects sequences from scratch (including capturing footage). Students learn best practices for capturing all needed elements on the day of the shoot as well as planning the sequence before recording. Covers work in both 2D and 3D visual effects including: matte painting (2D and 3D), set extensions and additions, blue/green screen compositing, and 3D animation for the addition of elements into a shot. The first section of the class consists of short individual assignments aimed at teaching basic core VFX skills, finishing with the production of a class-produced VFX short film. Class member assignments are based off of individual skill and interest.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 225 with C or better; Credit is allowed for only FMP 325 or FMP 294 (Guerilla VFX) OR Visiting University Student
FMP	330	Pro & Tech Writing for Film/TV	Professional (noncreative) writing skills that prepare students for a career in the entertainment industry.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): THF 220 with C or better; Minimum 56 hours; Credit is allowed for only FMP 330 or 494 (Prof & Tech Writing for Film, Media & TV Industry)
FMP	335	Careers in Film/Media Ind	Basics of starting a freelance career in the film and media industry; the necessary tools and skills needed to move that career forward through the creation of various business and professional tools; and the various techniques needed to succeed in a variety of production environments.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 201 with C or better; Credit is allowed for only FMP 335 or FMP 394 (Independent Film and Media Industry) or FMP 494 (Independent Film and Media Industry)
FMP	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
FMP	345	Cinematography I	Cinematographer's role, photographic and visual theory, framing, shot composition, cameras and equipment, crew management, basic lighting for film and video.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 201 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student
FMP	350	Directing Documentary Media	Introduces directing students to the various practices, approaches and techniques of professional documentary media making, including creation of short-form projects that highlight both individual and collaborative perspectives on real-life figures, events and communities.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 280 with C or better; Credit is allowed for FMP 350 or FMP 394 (Documentary Production) OR Visiting University Student
FMP	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)
FMP	361	Int Screenwriting	Explores the basic components of feature screenwriting: story creation, story structure, character development, conflict, pace, tone, dialogue. Each of these skills will be revisited in more detail, culminating in a series of writing exercises (10-20 pages each), verbal pitch exercises and other focused exercises designed to develop the student's unique writing voice.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 261 with C or better; Credit is allowed for only FMP 361 or FMP 394 (Intermediate Screenwriting) or FMS 394 (Intermediate Screenwriting) OR Visiting University Student
FMP	365	Developing a Series	Acquaints students with the development process for episodic series (network, cable, Web, on-demand). Also explores the many facets of the television industry (creative, financial, cultural, historical) and surveys the advances in television content along with an analysis of the cultural impact of television on society.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Digital Culture (Film) or Film major or Film & Media Production minor or Film & Media Production concentration; FMP 261 w/ B or better; Credit is allowed for only FMP 365 or FMP 394 (Developing a TV Series) OR Visiting University Student
FMP	370	Producing	Provides the information and techniques to understand the process of being a producer in the film and media industries.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 300 with C or better; Credit is allowed for only FMP 370 or FMP 494 (Producing Film) OR Visiting University Student

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FMP	380	Film Production Crew	Provides a practical, on-set experience for all Film (Filmmaking Practices) majors.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Prerequisite(s): Film (Filmmaking Practices) BA major; minimum 2.50 GPA; FMP 300 with C or better; Credit is allowed for only FMP 380 or FMP 494 (Film Production Crew) OR Visiting University Student
FMP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	398	Capstone Development	Provides the opportunity for all Film and Media Production majors to conceive, develop and complete the intellectual property that will form the basis of their required final capstone projects for FMP in the School of Theatre and Film at Arizona State University.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Film (Film and Media Production) major; FMP 300 with C or better; minimum junior standing
FMP	403	Independent Film	Considers the history of avant-garde, alternative and independent film making in American cinema, with an emphasis on shifting technology, industrial practices and cultural innovations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	404	World Cinema	Films and filmmakers from Europe, Asia, Australia, the Far East, South America, and the Caribbean. Emphasizes cultural content and filmmaking philosophies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	G	Prerequisite(s): ENG 102, 105 or 108 with C or better
FMP	405	Film & TV: Pioneers, Practices	Examines major historical figures, generic conventions and institutional practices in the global film, television and media industries.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	417	Bus & Legal in Entertainment	Examines standard business and legal elements of the film and media entertainment industry, including historical, theoretical and ethical frameworks for understanding current practices.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
FMP	418	Directing for Film & Media II	Expands on effective techniques for working with actors and on the director's preparation for shooting scenes and films. Students learn while directing with professional set protocols in this hands-on, set-driven class.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA major; FMP 318 with C or better; Credit is allowed for only FMP 418 or FMP 494 (Film & Media Directing II) OR Visiting University Student
FMP	420	Post-Production III	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and software, advanced sound design and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Students receive critiques of their work after each project to determine the development of their proficiency of craft and creativity.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) major; FMP 320 with C or better
FMP	445	Cinematography II	Advanced cinematographic and motion picture photography techniques, including study of advanced lighting, integration of digital technologies, new hardware and software, and professional development for directors of photography, camera assistants, and grip/electric department personnel.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 345 with C or better; Credit is allowed for only FMP 445 or FMP 494 (Advanced Study: Cinematography) OR Visiting University Student
FMP	465	Series Writers Workshop	Offers selected students the opportunity to develop and refine material for a proposed episodic series through collaborative workshops and writing sessions that are equivalent to the development processes utilized in various industry paradigms (network, cable, Internet/on-demand).	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 365 or 394 (Developing a TV Series) with C or better; Digital Culture (Film) or Film major or Film & Media Prod. minor or BIS (Film & Media Prod.); minimum junior standing. Credit for only FMP 465 or 494 (Television Writing Workshop)
FMP	475	Producing Series	Function and responsibilities of episodic series producers and production executives for television-based platforms (network, cable, internet/on-demand). Explores a close examination of the business of television, specifically budget, license fees, distribution, and union obligations. Other topics include the structure of studios and networks, producing and marketing series for traditional and new media platforms, and general entertainment business practices.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film & Media Production) or Film (Filmmaking Practices) major; minimum junior standing. Credit is allowed for only FMP 475 or FMP 494 (Producing Television)
FMP	480	Film Production Capstone I	Final preparation for capstone project, including budget, shooting schedule, production lists and reports; and commencement of principal photography.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production BA major; FMP 398 with C or better; THF 220 with C or better
FMP	481	Film Production Capstone II	Final project shooting and postproduction: shooting, editing picture, sound, effects and music; audience screening of required capstone film.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production BA major; FMP 480 with C or better
FMP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): minimum 45 hours

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FMP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6		Prerequisite(s): Barrett Honors student
FMP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6	L	Prerequisite(s): Barrett Honors student
FMP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Prerequisite(s): Film and Media Production student or Filmmaking Practices student or Film and Media Production minor OR Visiting University Student
FMP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-7		
FMP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Pre-requisites: Film & Media Production or Filmmaking Practices student
FMP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Pre-requisite: Fine Arts Graduate student
FMS	100	Introduction to Film	Introduces the narrative structure, visual style, and cultural elements of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
FMS	110	Introduction to New Media	Explores the cultural effects of new media technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
FMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	200	Film History	Introduces the technological, aesthetic, social, and economic aspects of international film history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & H	
FMS	209	Screenwriting Fundmtls	Studies the creativity and the technique of screenwriting for the conventional narrative film and for TV; student writing exercises culminate in a script for micro cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		
FMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	300	Television & Cultural Studies	Applies cultural studies theory and method to the study of American television history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	302	U.S. Media Now	Examines the business of contemporary U.S. film, television, and new media and its relationship to artistic vision and production through research and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: FMS 100, ENG 101 and 102
FMS	309	Intermediate Screenwriting	Utilizing the elements of storytelling, students develop and write a treatment and the first act of a screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMP 261, FMS 209 or THP 261 with C or better OR Visiting University Student
FMS	340	Contemp Amer Film/Pop Culture	Analyzes American films, television programs, and music as popular cultural documents.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better OR Visiting University Student
FMS	341	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)

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FMS	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
FMS	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
FMS	351	Emerging Digital Media	Analyzes modern cultural and digital technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS 352 or TCL 352
FMS	354	Critical Studies in Animation	Provides critical and practical tools for analyzing mainstream, experimental, and hybrid animation aesthetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): FMS 100 OR Visiting University Student
FMS	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Credit is allowed for only FMS 370 or TCL 370
FMS	374	American Visions	In-depth examination of the career of an innovator in media, whether a producer, director, or scriptwriter, through his/her status as a unique storyteller of the American experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours
FMS	375	LGBTV: TV and Sexuality	Some of TV's most popular shows now feature lesbian, gay, bisexual and transgender (LGBT) characters. This course looks at representations of LGBT characters and personalities, with a focus on the specificities of the television industry. Looks at LGBT representations on reality shows, sitcoms and dramas in relation to the economic and regulatory structures of the TV business to understand the complex functions of sexual identity in the television industry. Addresses particular texts and images as they relate to TV's industrial practices, paying attention to cultural, political and aesthetic issues of minority representations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 375 or FMS 394 (LGBTV: Television and Sexuality)
FMS	377	Baseball, Film & America Dream	Critical viewing and analysis of both narrative and documentary baseball film. Genre typically explores American values and national culture, and changes in our concepts of gender roles, race, aging, social class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: FMS 100, ENG 101 and 102
FMS	380	Race and Gender in Am Film	Critical analysis of how film shapes perceptions of race and gender in American society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only FMS 380 (FMS 270) or TCL 380 (TCL 270) OR Visiting University Student
FMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	409	Advanced Screenwriting	Utilizing the elements of storytelling, students outline, develop, and write a feature-length screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMS 309 with C or better
FMS	411	Screenwriting Adapt Studies	Explores the many issues related to narrative adaptation across movies and other media such as television, various Internet phenomena and gaming.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor or BIS Film and Media Studies concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 411 or FMS 494 (Screenwriting Adaptation Studies)

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FMS	412	Story Analysis for Film & TV	Investigates Hollywood's creative development process from submission to shooting script. Critiques the scripts of award-winning films, and evaluates the necessary elements of a well-told story.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor, or Film and Media Studies BIS concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 412 or FMS 494 (Story Analysis for Film and TV)
FMS	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
FMS	426	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
FMS	427	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
FMS	430	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430
FMS	440	Los Angeles: Movies and Culture	Explores film treatment of the historical culture of Los Angeles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): BA Film and Media Studies major or minor or BIS Film and Media Studies concentration; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	441	Global Cinema	Examines how film represents three important dimensions of globalization: its relationship to national culture, terrorism, and immigration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	442	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
FMS	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
FMS	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student

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FMS	450	Technology, Culture, and Media	Studies the socio-political relationships among technology, culture, and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	455	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension on the big and small screens. By examining how comic conventions, personae and sensibilities in standup respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences--often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 455 or FMS 494 (Comedy as Social Discourse)
FMS	460	Masculinity and Film	Examines the representation of masculinity and the male body in film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	461	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student
FMS	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464
FMS	466	Constructing Border on Film	Explores the U.S.-Mexico border on film, examining how border images have been constructed and shaped over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS or TCL 466
FMS	468	Crime & Violence American Film	Addresses three primary aspects of crime and violence in film: representation, societal attitudes, effects on audience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	471	Latinos In Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
FMS	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
FMS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		
FMS	490	Capstone Seminar	Capstone seminar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): BA Film and Media Studies major; minimum 56 hours; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
FMS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student
FMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7		
FMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	502	Hollywood Film Historiography	This course is offered online only. Explores historiographic and critical scholarship on Hollywood as an industrial, cultural, and aesthetic enterprise.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	503	Media Industries	Examines the business of contemporary U.S. media practices including film, television, Web-based media, music, video games, mobile phones, and other interactive media. Explores the changing economic structures of these media industries and their relationship to artistic vision and production.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student

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FMS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Master of Liberal Studies student or MAS in American Media and Popular Culture student. Credit is allowed for only MLS or FMS 504
FMS	507	Crime & Violence American Film	This course is available online only. Focuses on historiographic and critical scholarship on three aspects of crime and violence in American film: (1) regulation and censorship; (2) representation and society; and (3) theories about the effects on audiences of viewing crime and violence in films.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	508	Race,Gender&Sexuality in Media	Investigates the diverse ways in which race and gender are represented in American film history and culture. In a broader context, also analyzes how the meaning of race and gender, and their intersectionality, has shifted and changed across time and space, and how cinema has contributed to these shifts. Gives attention to the relationships among visual style, narrative structure, generic convention and identity. Students become more literate about the power of film to reflect and refract ideologies of race and gender, and to analyze how these identities impact the experiences of individuals and groups in our society.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	511	Fund Cinema Telev Narr Online	Studies the creativity and the technique of screenwriting for the conventional narrative film and for television. Student writing exercises culminate in a script for micro-cinema. Seminar. Pre-requisite: online student in MAS American Media and Popular Culture	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	512	Inter Cinema & Tv Narrative	Focuses on the feature-length screenplay; students complete the first act and treatment of an original feature.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	520	Cultrl Hst US TV:Theory & Mthd	Engages both the theory and methods of cultural studies as implemented in television studies and U.S. television history (from the 1940s to the present).	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
FMS	522	Los Angeles: Movies & Culture	Focuses on historiographic and critical scholarship of industry, genre and representation in post-war, self-reflexive Hollywood cinema.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	523	Film Authorship	Explores the notion of authorship in film, television, and digital media by engaging with a number of critical methodologies such as auteurism, structuralism, post-structuralism, feminism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	527	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critiques stereotypes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
FMS	535	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension, on the big and small screens. By examining how comic conventions, personae and sensibilities in stand-up respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences-- often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FMS 535 or FMS 598 (Comedy as Social Discourse)
FMS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)

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FMS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
FMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	105	Phys Evid and the Crime Scene	First course in a two-semester series of laboratory and lecture courses focusing on introducing non-scientists to forensic science. Explores the investigative and laboratory technologies behind common forensic techniques utilized in crime scene documentation and reconstruction, the identification and value of physical evidence, documentation and collection of evidence, comparative analysis, and the latest technologies in mobile device forensics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	106	Biol Behind the Crime Scene	Second of two courses offering the non-scientist an introduction to the forensic sciences. Focuses on the biology and chemistry in analytical techniques used in the crime lab such as quantitative DNA analysis, toxicology and controlled substance analysis. Also covers topics related to death investigation, as well as plant and pollen identification as they relate to forensic science and criminal investigations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
FOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
FOR	286	Prin. of Forensic Science	Introduces and surveys the practices and procedures used by forensic scientists in the modern crime laboratory. Students apply lecture topics to forensic-themed laboratory activities.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116 OR Visiting University Student
FOR	290	Hist Perspect of Forensic Sci	Explores the history and evolution of forensic science and its use in criminal investigations. Topics include: the "discovery" of DNA, the societal impact of forensic science, increased use of forensic science in criminal investigations, and a timeline of technological advances that has helped propel forensic science into popular culture.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Credit is allowed for only FOR 290 or FOR 294 (Historical Perspectives of Forensic Science)
FOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	350	Computer Forensics	Concepts of computer forensics, forensic analysis techniques, computer forensic tools and software for forensic investigators, network forensics, data forensics, mobile device forensics, malware forensics, cyber crimes and fraud, computer security incident response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 100 or higher with C or better OR CIS 105 with C or better
FOR	370	Mod Practices in Forensic Sci	In-depth treatment of the practices and procedures used by forensic scientists in the modern crime laboratory. Students apply lecture topics to forensic-themed laboratory activities.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; BIO 305 or FOR 286; CHM 113; CHM 116

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FOR	377	For Analyt Chem Lab	Focuses on common analytical techniques currently used in forensic laboratories and provides further hands-on experience with methods and instrumentation utilized in a modern crime laboratory. Applies gained knowledge to lab exercises designed with crime laboratory evidence types and protocols in mind.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): FOR 375 or LSC 375 with C or better; FOR 376 or LSC 376 with C or better
FOR	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347; Credit is allowed for only FOR 380 or LSC 380
FOR	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
FOR	388	Research for Natural Sciences	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; Credit is allowed for only LSC 388 or LSC 498 (Research Fundamentals for the Natural Sciences) or ENV 388 or FOR 388 or PLB 388 or PTX 388 OR Visiting University Student
FOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	400	Comparative Forensics	Familiarizes students with the comparative methods used in the forensic analysis of fingerprint, questioned document and firearms evidence. Discusses the theory and principles of individualization as assessed in forensic casework. Exposes the operation and theory of the scientific instruments used when performing comparative analysis. Reinforces learning objectives through case studies, practical exercises, outside projects and guest lectures.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; Credit is allowed for only FOR 394 (Comparative Forensics) or FOR 400 OR Visiting University Student
FOR	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286 OR BIO 353; LSC 347; Credit is allowed for only FOR 394 (Forensic Toxicology) or FOR 401 or PTX 401
FOR	402	Forensic Biology	Focuses on molecular genetics and biology pertaining to forensic science. Course subject matter includes: the history of forensic biology, serological techniques, DNA and DNA analyses, topics in molecular genetics, and forensic biology in the crime lab. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic biology). Addresses other topics such as current court cases and topics related to forensic biology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; LSC 347; LSC 348; Credit is allowed for only FOR 402 or FOR 394 (Forensic Biology) OR Visiting University Student
FOR	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
FOR	410	Prof Practices in Forensic Sci	Focuses on professional practices as they relate to the forensic scientist or forensics professional working in a modern crime laboratory (public or private). Topics include quality assurance programs and practices; ethics and analytical bias; the audit and accreditation processes; and the relationship with forensic science and the courtroom, to include courtroom testimony procedures. Includes oral mock court scenarios, as well as enhancing writing skills appropriate to the forensic sciences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 305 or FOR 286 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student

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FOR	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
FOR	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
FOR	426	Analytical Chemistry Lab	Provides hands-on experience with sample extraction, sample clean-up, and instrumental analysis of common chemicals. Largely focuses on the application of analytical chemistry methods to the fields of forensics and the life sciences. Mainly uses the solvent and solid-phase analyte extraction methods; gas chromatography-mass spectrometry, FTIR and NMR, generally determines analyte identification.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
FOR	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
FOR	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
FOR	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
FOR	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
FOR	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
FOR	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; LSC 347; Credit is allowed for only FOR 480 or FOR 494 (Advanced Topics in Human Forensic DNA Typing) or LSC 480 or LSC 494 (Advanced Topics in Human Forensic DNA Typing)
FOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
FOR	485	For Sci Capstone	Culmination course integrating all components of Forensic Science major courses demonstrating knowledge and competency in the field of forensic science. Includes Forensic Science Assessment Test (FSAT) preparation and FSAT completion.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 305 or FOR 286; FOR 410; 6 additional hours of upper-division FOR coursework; senior standing
FOR	486	Peer Mentor Forensic Sci	Advanced students learn and apply mentoring skills in teaching labs.	N	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours OR Visiting University Student

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FOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student
FOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	
FOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
FOR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	501	Forensic Toxicology	Includes the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body, as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology).	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	502	Forensic Botany	Teaches students the historical and potential uses of plants and other organisms traditionally included with plants as evidence in forensic investigations.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	503	Forensic Entomology	Presents current information on the role of arthropods in decomposition, the role of forensic entomology in criminal and civil investigations and the increasing importance of science on society. Provides an understanding of the importance and role that arthropods play in civil and criminal investigations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	525	Forensic Science & Governance	Focus on quality assurance and control within a crime laboratory and cover topics specific to laboratory directors and the management of all activities within the laboratory critical to meeting local, regional and national standards.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	532	Principles/Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	540	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	550	Ethics in Forensic Science	Covers several professional codes of ethics and common ethical dilemmas that may confront criminalists and other forensic scientists.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	560	Quant Methods/For Sci Research	Focuses on developing foundations for using statistical analyses as research tools in the forensic sciences, with special emphasis placed on the fundamentals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
FOR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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FOR	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	101	Elementary French I	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in FRE 101 if credit with C or better earned in FRE 102, FRE 110, FRE 201, FRE 202 or FRE 210 OR Visiting University Student
FRE	102	Elementary French II	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 101 with C or better OR French Placement Test score of 281-340; Students may not enroll in FRE 102 if credit with C or better earned in FRE 110, 111, 201, 202, 210, 305, 311, 312, 321, 322, 411, or 412 OR Visiting University Student
FRE	110	Intensive French I	Proficiency-based course that provides an intensive introduction to the French language and culture. Introduces the language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative skills. Class time is spent mainly on communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only FRE 110, FRE 101 or FRE 102 with a C or better OR Visiting University Student
FRE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	201	Intermediate French I	Grammar review, with emphasis on development of skills of speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 102, 110, or 111 with C or better OR French Placement Test score of 341-394; Students may not enroll in FRE 201 if credit with C or better earned in FRE 210 OR Visiting University Student

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FRE	202	Intermediate French II	Continuation of grammar review with emphasis on development of skills in speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 201 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 202 if credit with C or better earned in FRE 210 OR Visiting University Student
FRE	210	Intensive French II	Second semester of an intensive, proficiency-oriented language course designed to develop functional proficiency in French in a dynamic communicative environment. Class time is spent mainly on a variety of communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): FRE 102 with B or better OR FRE 110 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 210 if credit with C or better earned in FRE 201 or FRE 202
FRE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	305	Readings in French Literature	Survey of francophone literature designed to teach reading with facility and comprehension. Vocabulary building, familiarity with literary terms, their meaning and use, and introduction to textual analysis of literary genres are major elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better; Students may not enroll in FRE 305 if credit earned in FRE 321 or FRE 322 OR Visiting University Student
FRE	311	Oral and Written Expression I	Practices interpersonal and interpretive writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better OR French Placement Test Score of 477+ OR Visiting University Student
FRE	312	Oral and Written Expression II	Practices presentational writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better or Visiting University Student
FRE	315	French Phonetics	Practice and theory of French pronunciation. Emphasizes standard French, although an overview of regional varieties is offered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisites: FRE 311
FRE	319	Business French	Introduces the structure, vocabulary, and practices of the French business world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; FRE 312
FRE	321	Fre Cultural Masterpieces I	Masterpieces of French literature of the Middle Ages through the 18th century, and related films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): FRE 305 with C or better; FRE 311 or 312 with C or better OR Visiting University Student
FRE	322	Fre Cultural Masterpieces II	Masterpieces of French literature and film from the 19th to 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): FRE 305; FRE 312 OR Visiting University Student
FRE	325	French Lang & Cult thru Film	Reviews French vocabulary and grammar through French films, with emphasis on listening comprehension and oral and written production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s) with C or better: FRE 311, FRE 312
FRE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	411	Advanced Spoken French	Improvement of spoken French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; 6 hours of 300-level French OR Visiting University Student
FRE	412	Advanced Written French	Improvement of composition skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 312; 6 hours of 300-level French
FRE	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
FRE	415	French Civilization I	Political, intellectual, social, economic, and artistic development of France from its origins to the end of the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites:6 hours of upper-division French
FRE	416	French Civilization II	Political, intellectual, social, economic, and artistic development of France from the 18th century to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	pre-requisites:6 hours of upper-division French
FRE	421	Structure of French	Phonology, morphology, syntax, semantics, and varieties of French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): FRE 311, 312; SLC 201

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FRE	453	Theater of the 19th Century	From Romantic drama to the Symbolist Theater. Representative plays of Hugo, Musset, Vigny, Dumas, Becque, Rostand, Feydeau, and Mirbeau.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	461	Modern Narrative	Representative authors from Gide to the new Nouveau Roman.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
FRE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
FRE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
FRE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
FRE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	521	History of the French Language	Principal phonological, morphological, and semantic developments of French from Latin to present, with emphasis on Old and Middle French. Some familiarity with Latin is recommended.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	550	French for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FRE 494 (French for Reading Knowledge) or FRE 550 or FRE 598 (French for Reading Knowledge)
FRE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	100	Introduction to Engineering	Introduces the engineering design process; working in engineering teams; the profession of engineering; engineering models, written and oral technical communication skills.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	2		

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FSE	104	EPICS Gold I	First of a sequence of two one-credit service-learning courses in which EPICS GOLD groups are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students work together to assess the feasibility and sustainability of their proposed plans for long-term projects that solve problems and benefit clients and often, the larger community. Project work centers on the engineering, technology, computing, sustainability, business and other needs of a not-for-profit community partner; interdisciplinary group interaction is an integral element for the project success.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student; Credit is allowed for only FSE 104 or FSE 194 (EPICS Gold I) OR Visiting University Student
FSE	150	Grand Challenges for Engrg	Explores social dimensions of developing engineering solutions to meet local and global challenges. Introduces National Academy of Engineering (NAE) Grand Challenges for engineering and Grand Challenge Scholars Program.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	SB	Prerequisite(s): Admission to the Engineering Grand Challenge Scholars Program OR Visiting University Student
FSE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	HU	Credit is allowed for only SOS 181, FSE 181, or CEE 181
FSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
FSE	201	Engineering Undergraduate TA	Theory and rationale of active learning and teaching strategies that stimulate intellectual development. Leadership, teaching, teamwork and communication skills needed to facilitate effective undergraduate learning in engineering. Implementation of these skills in a classroom setting.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Ira a Fulton School of Engineering major; minimum sophomore standing OR Visiting University Student
FSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	301	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Prereqs: Business student; ACC 241, 242 or 271 with C or better OR Engineering student; minimum junior standing OR non-business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
FSE	310	Transfer Success in FSE	Introduces the unique elements, culture, challenges and opportunities at ASU and within the Ira A. Fulton Schools of Engineering. Helps students succeed as engineering students and ultimately as engineers.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Engineering undergraduate student; Credit is allowed for only FSE 310 or FSE 394 (Transfer Success in Engineering) OR Visiting University Student
FSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
FSE	399	Cooperative Work Experience	Work periods with industrial firms or government agencies alternated with full-time course work. Not open to students from other colleges.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-15		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
FSE	404	EPICS Gold: EPICS in Action	Second of a sequence of two one-credit service-learning courses in which Engineering Projects in Community Service (EPICS) teams are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students in this class work together to develop design solutions for representatives of community partners. The students are expected to continue their prior work in designing engineering solutions that solve problems and benefit clients and often, the larger community. Interdisciplinary group interaction is an integral element for the project success. Students may be continuing a project from a previous FSE 104 or FSE 404 class, or they are invited to begin work on a new project. Encourages student participation for multiple consecutive semesters on a project. Groups are composed of freshmen through seniors.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-2		Prerequisite(s): Fulton Engineering student; minimum junior standing OR FSE 104 OR FSE 494 (EPICS Gold: EPICS in Action) OR Visiting University Student
FSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		

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FSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6		Prerequisite(s): Barrett Honors student
FSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6	L	Prerequisite(s): Barrett Honors student
FSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
FSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-3		
FSE	501	Technology Entrepreneurship	Fundamental principles and concepts of technology entrepreneurship.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
FSE	502	Strategic Enterprise Innovatin	Strategies, techniques, and practices of process, product, and management innovation across the enterprise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: School of Engineering Graduate student
FSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		Prerequisite(s): Fulton Engineering graduate student
FSH	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 125 or HDA 125
FSH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	201	Textiles Survey	Offers a broad survey of textiles as they relate to art, fashion and their place in human culture. Topics explore material content, weaves and textile properties; the artistic and social history of textiles; modern textile manufacturing and consumption; and innovations in textile invention for science and industry. The goal of this semester is for you to more fully understand the underlying content and structure of textiles in order to better appreciate the overwhelming variety of textiles that have been created over time, place, gender, ethnicity, purpose and methodology.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 201 or ART 294 (Textiles Survey) OR Visiting University Student
FSH	202	Apparel Construction	Prepares students for a career in the apparel industry or for continued study in graduate school. Introduces core concepts of fashion materials and construction: cutting, sewing and finishing techniques for creating garment prototypes. Focuses on the fashion industry as well as apparel construction and production.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
FSH	203	Fashion Illustration	In this studio setting, students practice drawing the fashion figure from a live model, both in leotard and in clothing, facilitating understanding of drape, shape, shadow, silhouette and how it relates to fashion design. Demonstrates and practices fundamental skills of visual communication and problem solving, including fabric rendering and proportion and how it relates to the fashion designer's sketch. Brief lectures, demos and critiques are an integral component of each class. Materials used in class include, yet are not limited to, charcoal and gouache.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or ART 111; Credit is allowed for only FSH 203 or FSH 294 (Fashion Illustration) OR Visiting University Student

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FSH	204	Social Aspects of Fashion	Introduces ways of examining clothing and fashion in context. How do we read images and representations of clothing and how do they manipulate the meaning of the garment and its wearer? In what ways is this visual language used to select and produce fashion? What influences how we dress on a daily basis and over time? These are just some of the questions about appearance, clothing and culture that are used to embark on a participatory research project and as a point of departure for class discussions and related readings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	L or HU or SB	Prerequisite(s): ENG 101, 102, 105, 107, or 108; FSH 125 OR Visiting University Student
FSH	206	Fashion Design	Provides a foundation for the design process through drafting, flat pattern, construction and draping the professional way. In this hands-on setting, students apply principles of art to clothing design. Develops an understanding of the design concept based on the relationship of the two-dimensional pattern shape to the three-dimensional body.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 202 OR Visiting University Student
FSH	208	Fashion Technology	Introduces the fundamental concepts, procedures and techniques used for manipulating images and documents in digital imaging software and data management software for fashion applications.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): INT 121 OR Visiting University Student
FSH	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 280 or MKT 280
FSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	300	Global Fashion Industry	Considers the textile and apparel industries in a global context. Examines issues from several viewpoints providing the facts and data needed to consider the ramifications of events with unbiased perspectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	G	Prerequisite(s): FSH 204 or 206 with C or better OR Visiting University Student
FSH	325	Personal Style and Wardrobe	Methods of clothing selection, coordination, and evaluation for personal style and wardrobe strategies.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only FSH 325 or FSH 394 (Personal Style and Wardrobe) OR Visiting University Student
FSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
FSH	397	Fashion Capstone Development	Guides students in the development of a detailed capstone project proposal. Capstone projects are completed with faculty/staff guidance in subsequent fashion capstone course. Students arrive at a project to be completed in one or two semesters that represents the culmination of their education.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): minimum 60 hours
FSH	435	Contemporary Fashion	Identifies and analyzes contemporary fashion designers and brands in relation to fashion research and inspiration for design and branding. Provides a comprehensive understanding to their approach to silhouettes, construction innovation, textiles, garment details and accessories.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
FSH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): minimum 45 hours
FSH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
FSH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student
FSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours
FSH	497	Fashion Capstone	Formally structures the relationship between students conducting independent capstone projects and faculty/staff mentors. A variable credit practicum course, students implement, document and evaluate their capstone project. Acceptance into this course depends on the successful completion and acceptance of a project proposal and formal instructor approval in prerequisite course.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3-9		Prerequisite(s): FSH 397 with C or better
FSH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): minimum 45 hours
FSH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 45 hours

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GAP	10	Academic Skills I	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an international English-medium higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	11	Academic Skills II	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to continue to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	12	Academic Skills III	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to refine both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	20	Academic Foundations I	Designed for international ASU-USA Pathways students, this non-credit course develops oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	21	Academic Foundations II	Designed for international ASU-USA Pathways students, this non-credit course continues developing oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	22	Academic Foundations III	Designed for international ASU-USA Pathways students, this non-credit course refines oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	30	Communication Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice theories of communication skills in public, small group and interpersonal settings. Also supports, linguistically and culturally, students' study of speech communication processes such as problem solving, decision making and information sharing.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	31	Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to comprehend and apply math terminology in various math contexts through in-class problem-solving activities and presentations.	N	LEL	N	GNA	Office of the University Provost	Global Launch	1		
GAP	32	CIS Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of computers in business and society and use of word processing, spreadsheets, database, presentation and application software. In addition, the course supports the students' linguistic ability to discuss computers in terms of ethics and social issues as well as technology and business.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	33	Global Management Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, communication skills and cultural awareness needed to comprehend and apply basic concepts related to management in a global environment including global politics, legal systems and sociocultural environments.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		

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GAP	34	Info Tech Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	35	Info Tech Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	36	Comp. Software Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	37	Comp. Software Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	41	History Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend global history by exploring topics such as: changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare and women around the world.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	42	Sociology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the fundamentals of sociology. Also supports, linguistically and culturally, students' study of social organization, interaction and social change.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	43	Chemistry Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of chemistry, particularly for the needs of students in the physical, biological and earth sciences.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	44	Biology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of biology including the method of scientific inquiry and behavior of matter and energy in biological systems.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	45	Physics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of physics, including kinematics, Newton's laws, the relationship of energy and momentum, as well as the dynamics of particles, solids and fluids.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	46	Applied Academic English I	Designed for international ASU-USA Pathways students, this course supports student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	47	Applied Academic English II	Designed for international ASU-USA Pathways students, this course continues supporting student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		

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GAP	80	Business Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice topics in math for business analysis.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	81	Human Systems Engineer Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems, with particular attention to the intersection of psychology and engineering.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	82	Engineering Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	83	Engineering Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	90	Macroeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	91	Microeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	20	Language Foundations	Entry-level course explores the grammatical, syntactic and cultural underpinnings of the English language for international students studying English as a foreign language.	N	LEC	N	GNA	Office of the University Provost	Global Launch	0		
GBL	22	Training	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	24	Field-Based Learning	-	N	LEC	N	GNA	Office of the University Provost	Global Launch	3		
GBL	25	English for Specific Purposes	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	26	Project Work	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	27	Current Issues and Topics	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	28	Academic Culture	Multidisciplinary approach to American academic culture. Designed for international students who will be matriculating into an American university and explores such themes as study skills, using academic resources and participating fully in academic life.	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	40	Basic 1 Listening/Speaking	On completing the Basic 1 Listening/Speaking course, a student will be able to (1) follow directions and comprehend main ideas and supporting details of short, simple passages and conversations spoken slowly; and (2) speak informally to express basic needs, habits and descriptions in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	41	Basic 1 Reading/Writing	On completing the Basic 1 Reading/Writing course, a student will be able to (1) recognize main ideas and find supporting details in selected reading passages of a few pages; and (2) produce a guided writing with a personal point of view, demonstrating level-appropriate control of grammar, word forms, and punctuation.	Y	LEC	Y	GNA	University College	Global Launch	9		

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GBL	42	Basic 1 Structure	This course covers helping verbs, pronouns, adjectives, count/non-count nouns, and tenses (present, present progressive and simple past).	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	43	Basic 1 Communication	International students studying English as a foreign language study the fundamentals of English communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	50	Basic 2 Listening/Speaking	On completing the Basic 2 Listening/Speaking course, a student will be able to follow instructions, directions, and comprehend the main ideas and supporting details of 1-3 minute announcements and conversations with controlled speech and delivery; and (2) speak informally in basic social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	51	Basic 2 Reading/Writing	On completing the Basic 2 Reading/Writing course, a student will be able to (1) recognize main ideas, find supporting details, and recognize the organizational pattern in short and page-length reading passages; and (2) produce a composition, based on a model, with a personal point of view, demonstrating level-appropriate control of grammar, word form, and punctuation.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	52	Basic 2 Structure	Learn grammar for everyday writing and speaking--present, progressive and future tenses, irregular verbs in the past tense, modal verbs, pronouns, order of adjectives, and comparisons.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	53	Basic 2 Communication	Learn to communicate effectively at the basic level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	60	Intermed 1 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 1-5 minute listening passages, conversations, instructions, and directions with controlled speech and delivery; and (2) speak informally in common social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	61	Intermed 1 Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and find supporting details in selected reading passages of a few pages; and (2) produce an organized composition, with a personal or an objective point of view, demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	62	Intermediate 1 Structure	Improve grammar for everyday writing and conversation, present perfect and present perfect continuous and future tenses, noun clauses and grammar to cover frequency, duration, possibility and necessity.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	63	Inter 1 Comm	International students studying English as a foreign language continue to build on the fundamentals of English communication, including working on vocabulary expansion, pronunciation, idiom decoding, fluency and verbal accuracy.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	64	Inter 1 Business: Intro	International students studying English as a foreign language, learn the fundamental vocabulary, concepts and cultural customs of business in an American context.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	65	Int Social Sciences	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for American social sciences. Designed for students at an intermediate level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	66	Inter STEM	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for STEM studies. Designed for students at an intermediate level of English proficiency.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	70	Intermed 2 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 5-10 minute general topic listening passages with modified speech and delivery; and (2) speak formally and informally on a variety of general topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		

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GBL	71	Intermed 2 Reading/Writing	On completing this course, a student will be able to recognize the main ideas and supporting details and distinguish between fact and opinion in a reading passage of several pages; and (2) produce a composition, based on a writing task, with an objective point of view demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	72	Intermediate 2 Structure	Focus on an overview of all the tenses. This course also covers passive voice and sequence of tenses with adverbial clauses.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	73	Intermediate 2 Communication	Learn to communicate effectively at the intermediate level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	University College	Global Launch	3		
GBL	74	Interm 2: Business Management	International students studying English as a foreign language discover key concepts and ideas related to business management. Students have the opportunity to speak, read and write about, as well as listen to, accessible levels of business management materials, including work and motivation, company structure and recruitment.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	75	Inter American Culture Studies	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	76	Intermediate Bridge to ASU	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	80	Advanced 1 Listening/Speaking	On completing the Advanced 1 Listening/Speaking course, a student will be able comprehend the main ideas and supporting details of brief academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	81	Advanced 1 Reading/Writing	On completing the Advanced 1 Reading/Writing course, a student will be able to (1) recognize the main ideas and supporting details and determine logical inferences in selected general reading passages of several pages; and (2) produce a composition, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	82	Advanced 1 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	85	Humanities and Design	In this communicative, content-driven course, international students studying English as a Foreign Language continue to build their learning of ways to speak, write and critically analyze the vocabulary, concepts and context for humanities and design studies. Designed for students at an advanced level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	90	Adv 2 Core Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of complex but abbreviated academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	91	Adv 2 Core Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and supporting details, and determine logical inferences in authentic and selected academic and general reading passages of several passages; and (2) produce a well-developed essay, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	92	Advanced 2 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	93	Advanced Communication	Learn to communicate effectively at the advanced level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	94	Business English Special Topic	Learn to communicate effectively in a variety of business situations and develop English skills necessary for success in today's business world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		

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GBL	95	Adv American Culture Studies	Learn about American culture and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	96	Academic English Studies	Learn the Academic English necessary for success at an American university or college.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	98	Professi English Special Topic	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GCU	102	Introduction Human Geography	Systematic study of human use of the Earth. Spatial organization of economic, social, political, and perceptual environments.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	113	US and AZ Social Studies	Introduction to the United States and Arizona from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & H	Credit is allowed for only GCU 113 or HST 113 or GCU 194 (US & AZ for Aspiring Elmtry Ed) OR Visiting University Student
GCU	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	Credit is allowed for only HST or GCU 114
GCU	121	World Geography	Description and analysis of areal variations in social, economic, and political phenomena in major world regions.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SB & G	
GCU	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
GCU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
GCU	241	Global Economy in Transition	Production, distribution, and consumption of various types of commodities of the world and relationships to the activities of humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	253	Intro Cultural/Historical Geog	Cultural patterns, including such phenomena as language, religion, and various aspects of material culture. Origins and diffusion and division of the world into cultural areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	322	Geography of U.S. and Canada	Spatial distribution of relevant physical, economic, and cultural phenomena in the United States and Canada.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	323	Geography of Latin America	Spatial distribution of relevant physical, economic, and cultural phenomena in South, Middle, and Caribbean America. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as numerous analytical essays and an in-depth research paper, in addition to regular tests and quizzes, are required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	325	Geography of Europe	Broad and systematic overview of Europe, emphasizing physical, economic, and cultural phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	326	Geography of Asia	Spatial distribution of relevant physical, economic, and cultural phenomena in Asia, excluding the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	328	Geography Middle East/N Africa	Spatial distribution of relevant physical, economic, and cultural phenomena in the Middle East and North Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	332	Geography of Australia/Oceania	Spatial distribution of relevant physical, economic, and cultural phenomena in Australia, New Zealand, and Pacific Islands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	344	Geography Hispanic Americans	Examines the homelands, migrations, settlements, landscapes, roles, and selected cultural traditions of Hispanic Americans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	

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GCU	350	The Geography of World Crises	Contemporary world crises viewed from a perspective of geographic concepts and techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	351	Population Geography	Demographic patterns; spatial, temporal, and structural investigation of the relationship of demographic variables to cultural, economic, and environmental factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
GCU	357	Social Geography	Environmental perception of individuals and groups. Stresses the spatial aspect of social and physical environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	359	Cities of the World I	Historical evolution of urban patterns and structures in the Middle East, India, Southeast Asia, China, Japan, and Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	
GCU	361	Urban Geography	External spatial relations of cities, internal city structure, and spatial aspects of urban problems in various parts of the world, particularly in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	362	Journey Stories	Explores journeys, storytelling and geographies--real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
GCU	364	Energy in the Global Arena	Production, transportation, and consumption of energy, emphasizing the electric power industry and its environmental problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	373	Intro to Geographic Info Scien	Introduces theoretical and computer-based aspects of Geographic Information Systems, involving data analysis and map generation.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	4	SG	Pre-requisite: PSY 230 or SBS 304
GCU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	414	Teaching Geography Standards	Introduces Arizona Geography Standards for K-12 educators, emphasizing exciting curricula and illustrated with best practices by master teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	421	Geography Arizona/SW U.S.	Geography of the Southwest with an emphasis on Arizona. Divided into physical geography, history, people, and economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	424	Geography Mexico/Middle Amer	Central America and Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	425	Geography Mexican Amer Border	Geography of a binational and bicultural region. Examines settlement, boundary issues, ethnic subregions, population change, industrial development, and urban growth.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or SB) & G	
GCU	426	Geography Russia/Surroundings	Examines the geography of Russia and other post-Soviet states.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	432	Geography of China	Examines the physical, economic, cultural, social, demographic, agricultural, political, historical, and environmental aspects of the geography of China.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	433	Geography of Southeast Asia	Examines the biophysical and social features of Southeast Asian nations and peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	441	Economic Geography	Spatial distribution of primary, secondary, and tertiary economic and production activities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	442	Geographical Analysis of Trans	Networks, modes, economics, and flows at the urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		

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GCU	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
GCU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GCU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student
GCU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	496	Geographic Research Methods	Scientific techniques used in geographic research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GPH 111 with C or better; GCU 102 with C or better; GIS 205 with C or better OR Visiting University Student
GCU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GCU	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
GCU	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 514 or SOS 514
GCU	515	Human Migration	Economic, political, social, and geographic factors underlying population movements. Migration selectivity, streams and counter-streams, labor migration, and migration decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum & Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum & Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum & Env Sys)
GCU	529	Contemp Geographic Thought	Comparative evaluation of current philosophy concerning the nature and trends of geography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	542	Geog Analysis Transportation	Examines the geographical aspects of transportation systems. Looks at the geography of networks; transport costs and rates; different modes of transport, trade, economic development, and technology. Studies the movement of freight and passengers at the individual, urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	585	Geog Resrch Dsgn & Proposal Wtg	Prepares students to undertake creative geographic research culminating in the generation of new knowledge. Serves as a foundation for the student in achieving the objective of a productive and successful degree. To accomplish this, instruction stresses a research framework, ethical practice, and the generation of an original research proposal. Specific learning objectives are: to produce an area of specialization statement, literature review, problem statement, description of methods and final proposal; to develop the skills needed to conceive and plan a research project; to communicate ideas effectively in written and oral form; to develop and articulate informed opinions about research designs; to learn about academic publishing format and process; and to understand and engage in ethical research practices.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student
GCU	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GCU	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	671	Intro to Geographic Teaching	Intensive course in geographic education, scientific method in research on geographic education, research trends, resources for teaching, best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	672	Phys Geography for Teachers	Transfer of matter and energy exhibited in the Earth's climate, hydrology, soils, biogeography, and landforms; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	673	Human Geography for Teachers	Analyzes cultural, economic, urban, historical, transportation, population, political, and development geography; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	674	Geog Techniques for Teachers	Introduces geographic techniques, including GPS, GIS, remote sensing, cartography, qualitative, and field methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	675	World Geography for Teachers	Systematic overview of geographic knowledge about different world regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	676	North Amer Geog for Teachers	Systematic overview of geographic knowledge about different North American regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	677	Geography Across Curriculum	Intensive course on intergrating reading, writing, and mathematics standards with geography content; selected case studies; best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GDE	30	Basic Found English Lang Learn	Introduces a foundation of basic English language to international learners. Focuses on the structures of English, sentence parts and sentence formation, for basic conversations and basic writing skills related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	35	Basic Comm English Lang Learn	Builds on a foundation of basic English language for international learners. Further develops the structures of English needed in basic conversations and basic writing skills related to everyday English. Introduces learners to past forms.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	40	Basic Lang Skills Eng Lang Lrn	Refines and expands basic English language skills for international learners. Builds on reading, written and verbal skills to develop learners' language abilities in everyday English. Learners carry out conversations on a variety of personal topics.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	45	Basic Achieve English Lang Lrn	Further refines and consolidates basic English language skills for international learners. Emphasizes language skills in reading, writing, listening and speaking to expand learners' knowledge and language use in a wide variety of topics in home, family, friends, work, school, free time and more related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		

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GDE	50	Intermed Found Eng Lang Learn	Introduces a foundation of intermediate English language to international learners. Builds on the basic structures of English to refine learners' language abilities for everyday and academic English language skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	55	Intermed Comm Engl Lang Learn	Builds on a foundation of intermediate English language for international learners. Emphasizes and refines communication skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	60	Intermed Lang Skill Engl Learn	Refines and expands intermediate English language skills for international learners. Emphasizes and refines reading, written and verbal skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	65	Intermed Achieve Engl Lang Lrn	Further refines intermediate English language skills for international learners. Emphasizes and refines academic English language skills in reading, writing, listening and speaking.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	70	Acad Thinking Engl Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	75	Acad Analysis Engl Lang Learn	Develops advanced language skills and refines the critical thinking skills necessary in academic coursework. Learners build on prior learning to further develop their reading, writing, listening and speaking skills to successfully analyze and respond to academic topics and texts. Learners acquire advanced academic skills and vocabulary in order to be able to form opinions and arguments.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	80	Acad Persuasion Eng Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	86	Ugrd Acad Achieve Eng Lang Lrn	Designed for undergraduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic undergraduate program. Refines advanced academic skills introduced in prior language courses through collaboration, communication, compositions and response to course concepts.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	88	Grad Acad Achieve Eng Lang Lrn	Designed for graduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic graduate program. Learners draw from advanced, complex academic texts to review the literature and to compose evidenced-based writing and speaking assignments related to their fields of study. Expects learners to demonstrate an advanced command of the English language and advanced academic skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	96	English UG Adm & Achieve	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GDE	98	Engl Graduate Adm & Achievemnt	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students to graduate programs.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GER	101	Elementary German I	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in GER 101 if credit with C or better earned in GER 102, GER 110, GER 201, GER 202 or GER 210 OR Visiting University Student

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GER	102	Elementary German II	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 101 with C or better OR German Placement score of 231-328; Credit is allowed for only GER 102 or GER 110 or GER 111 OR Visiting University Student
GER	110	Intensive German I	Students learn to read, listen, write and speak German. Develops ability to communicate in German using a variety of tools. Uses German to ask and answer questions; name and describe persons, things, places and events; deals with certain situations; narrates orally and in writing; writes letters and postcards; fills out forms; and comprehends some texts. Expands knowledge of the cultures of the German-speaking countries. Students contribute to the class discussions what they might already know.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Students may not enroll in GER 110 if credit with C or better earned in GER 101, GER 102, GER 201, GER 202 or GER 210
GER	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	201	Intermediate German I	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 102, 110, or 111 with C or better OR German Placement Test score of 329-443 OR Visiting University Student
GER	202	Intermediate German II	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 201 with C or better OR German Placement Test score of 444-547; Credit is allowed for only GER 202 or GER 210 OR Visiting University Student
GER	210	Intensive German II	Helps develop reading, writing, listening and speaking skills and strategies with activities both inside and outside of class. Guides student further into learning about the cultures of the German-speaking countries.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): GER 102 or 111 with B or better OR GER 110 with C or better OR German Placement Test score of 408-469; Credit is allowed for only GER 201 or GER 202 or GER 210
GER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	310	Adv German Grammar & Comp I	Intensive, contextualized advanced German grammar and intensive practice in writing, emphasizing covered style and grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	311	German Conversation	Expansion of idiom through oral practice dealing with contemporary articles, essays and stories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	312	Readings in German Culture	Provides strategies for building reading proficiency in German through longer cultural texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or GER 210 with C or better
GER	313	Adv German Grammar & Comp II	Intensive, contextualized advanced German grammar and intensive practice in writing, emphasizing covered style and grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 310 with C or better OR Visiting University Student
GER	315	Germanic Mythology	Religious and spiritual beliefs and practices of the ancient Germanic peoples as reflected in their culture, including the pantheon of their gods, as well as the reception of these beliefs through and including contemporary times.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 315 or 394 (Germanic Mythology)
GER	319	Business German	Navigates the German business world in real-life situations. Apply for a job, be a trainee and develop a business project in German. Communicate effectively and with cultural awareness in a professional context. Organize and present clear, effective business communications and vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR Visiting University Student
GER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	416	German Civilization	From 1600 through 1945.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Pre-requisite: A 300-level German course
GER	421	German Lit Survey, 800-1800	From the beginning to Classicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GER 310 with C or better
GER	422	German Lit Survey, 1800-Today	From Romanticism to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): GER 310 with C or better OR Visiting University Student

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GER	431	German Humor	Popular and literary texts (collections of jokes, pranks and comedies) in the print and visual media provide a basis of comparison for students to reflect critically on the function of humor in German culture from the sixteenth century until the present. Exposes the different types and functions of German humor and understands both the historical and the contemporary theoretical debate on the study of (German) humor. Taught almost exclusively in German, with reading and writing assignments done in the target language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Two 300-level GER courses with C or better; Credit is allowed for only GER 431 or GER 494 (German Humor and Comedy)
GER	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
GER	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
GER	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
GER	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
GER	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455
GER	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)
GER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
GER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
GER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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GER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
GER	550	German for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking, or writing as in a traditional language course.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only GER 494 (German for Reading Knowledge), GER 598 (German for Reading Knowledge), or GER 550
GER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	205	Geographic Info Science I	Introduces spatial thinking, a cross-disciplinary foundation for geographic information science (the science of dealing with spatial/geographical data; their manipulation, interpretation and use in problem solving); geospatial technologies (the specific technologies underpinning geographic information science); and spatial analysis (the science of solving spatial problems).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	
GIS	211	Geographic Info Science II	History and basic aspects of GIS including map and data file structure, conversions, and synthesis with a computerized environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	220	Mathematical Principles in GIS	Covers the basic math principles needed to excel in GIS and spatial analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better
GIS	222	Programming Principles GIS I	Basic principles of programming for GIS in python covering data processing, analysis, and application development.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 170, 210, 270, 271, or 272 with C or better OR Visiting University Student
GIS	270	Stats for Geography & Planning	Descriptive and inferential statistical methods for analysis of data in geographical sciences and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better OR Visiting University Student
GIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	311	Geographic Info Science III	GIS as a basis for microcomputer spatial analysis and synthesis. Includes digitizing, database organization, spatial retrieval, and graphics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 211 with C or better OR Visiting University Student
GIS	322	Programming Principles GIS II	Fundamental data structures and algorithms for the integration, management, processing and analysis of geographically referenced data.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better OR Data Science BS major; CSE 110, CSE 205, or GIS 222 with C or better OR Visiting University Student

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GIS	341	Cartography&Georepresentation	Study and creation of maps. Fundamental mapping principles (projection, scale, generalization, symbolization) and computer-based cartographic production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	351	Air Photo Interpretation	Subset, remote sensing, includes photography, films, aerial geometry, image components, stereoscopy, photogrammetry, ground truthing; interpret physical, cultural, economic, intelligence information.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum 45 hours
GIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	412	Spatial Decision Support Sysms	Theoretical and technical requirements for implementing spatial decision support tools.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better; GIS 311 with C or better
GIS	431	Spatial Databases	Covers data modeling concepts, the relational data model for the storage and retrieval of spatial and nonspatial information. The data retrieval emphasizes the industry-standard query language SQL and Spatial Query Languages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 311; GIS 322
GIS	441	Geographics: Interact/Animated	Advanced cartography, stressing influence and application of the computer on geographic representation. Emphasizes creation of maps for the Internet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 222 with C or better
GIS	461	Spatial Optimization Fndmnts	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student
GIS	462	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving, and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 211 with C or better; GIS 461 with C or better; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	470	Adv Stats Geography & Planning	Statistical techniques applied to the analysis of distributions and relationships. Introduces models and theory in geography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 270 with C or better OR Visiting University Student
GIS	471	Spatial Stats Geog & Planning	Basics of spatial data analysis. Topics include point pattern analysis, spatial autocorrelation, spatial regression, and kriging.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 470 with C or better OR Data Science BS major; DAT 301 or GIS 470 with C or better OR Visiting University Student
GIS	472	Spatial Regression Analysis	Students gain insight into the scope of spatial regression methods, apply them in an empirical setting, and properly interpret the results of spatial regression analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 471; Credit is allowed for only GIS 472 or GPH 598 (Spatial Regression)
GIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
GIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		

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GIS	501	GeoDesign in Practice	Covers the basic topics of GeoDesign in practice including data, analysis, geocoding, mapping and projected implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 601 and 602 (or PUP 576)
GIS	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
GIS	512	Spatial Decision Support	Designs and implements a spatial decision support system and analyzes and understands the theoretical underpinnings that form these systems.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 412 or GIS 512
GIS	521	GIS Programming	In-depth look at programming within GIS. Focuses on programming and methodology, utilizing specific software, and basic scientific computing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	531	Spatial Databases	Advanced data modeling concepts, the relational data model for the storage and retrieval of spatial and non-spatial information. Data retrieval emphasizes the industry-standard query language SQL and spatial query languages. Covers research topics for graduate students.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 431 or GIS 531
GIS	561	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581
GIS	562	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 561; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	563	Local Statistical Modeling	Understands the processes that generate the data we observe in the real world. If these processes vary over space, we term this spatial non-stationarity and traditional global models are no longer applicable. A set of local spatial models has been developed to examine spatial non-stationarity and one of the most widely used of these is Geographically Weighted Regression (GWR) and its variants. Investigates GWR and the wider context of spatial non-stationarity. Topics include: setting the scene; introduction to GWR; discussion of context; further issues in GWR; software for GWR; workshop on GWR 4; model selection in GWR; inference in GWR; semi-parametric GWR and multiscale GWR (MGWR); software for multiscale GWR; inference for MGWR; multicollinearity and GWR; some myths about GWR; big models; an example of the 2016 U.S. presidential election. Examination is by project (60%) and two presentations (40%).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 563 or GIS 598 (Local Statistical Modeling)
GIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		

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GIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	601	Intro to Geographic Info Sys	Introduces GIS theory and practice for professionals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	602	Intermediate GIS	Introduces visualization, spatial analysis and open source tools.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	603	Spatial Statistics/Modeling	Introduces spatial statistics and modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	604	Implm Corporate/Public Sectors	GIS use in the corporate and public sectors including proposal development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	605	GIS Project Plan & Impliment	Moving from project proposal to implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	606	GIS Project Presentation	Development of technical reports and presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	610	Programming GIS Environment	Programming fundamentals for desktop GIS and custom applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	630	GIS Technologies	Uses of GIS technology for data collection and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	640	GIS for Business	Uses of GIS in business practice including site suitability, demographic data and business analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	650	GIS for the Internet	Programming GIS for the Internet and mobile applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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GIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	135	Graphic Communications	Processes involved in design, asset generation, transmission, production and evaluation of visual content.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	210	Creative Thinking and Dsgn Viz	Fundamental methods, concepts and techniques of creative thinking, ideation and problem solving, including communication and societal influences. Examines drawing and design visualization, from sketching to data graphics.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	211	Intro to Video Game Art	2D and 3D art assets for video games. Areas covered: classic pixel art, seamless texturing and tiling, sprite animation, 3D virtual studio, box modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 OR Visiting University Student
GIT	215	Introduction to Web Authoring	Website planning and evaluation using industry-standard languages.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Credit is allowed for only GIT 215 or GIT 310 OR Visiting University Student
GIT	230	Digital Illustration in Publis	Raster and vector illustration in publishing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	250	Intro to Commercial Print	Provides an overview of current print technology, a basic understanding of the print process and current workflows.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology BS or Graphic Information Technology (User Experience) BS major OR Visiting University Student
GIT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	295	Intro to Technical Imaging	Explores imaging technologies utilized in industry. Covers basic imaging concepts, chip technologies, optics, motion analysis, high-speed video, thermal imaging, and science relating to light and latent imaging.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Undergraduate student; Credit is allowed for only GIT 295 or 294 (Introduction to Technical Imaging) OR Visiting University Student
GIT	303	Digital Publishing	Web and print publication design and production using industry-standard composition software, proofing, and output devices.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 or Graphic Information Technology BAS or Internet/Web Development BAS major OR Visiting University Student
GIT	310	Web Foundations	7.5-week course covers fundamental methods, concepts and techniques of semantic and validated Web development as well as aesthetic Web design. Includes Photoshop, HTML5 and CSS technologies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology or Internet and Web Development) BAS major; minimum junior standing; Credit is allowed for only GIT 215 or GIT 310 or GIT 337 (or GIT 237)
GIT	312	3-D Computer Graphics Modeling	3-D modeling applications: modeling for video games, mapping techniques, texturing, box modeling, geometric representation, strategies and assemblies.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3	CS	Prerequisite(s): GIT 211 OR Visiting University Student
GIT	314	MM Dsgn, Plan and Stybd	The creative process of generating ideas, conceptualizing projects, planning, designing, story boarding, and presenting interactive multimedia products.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; GIT 230 OR Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student

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GIT	315	Digital Video Techniques	Covers video production, including planning, pre-production, production, post-production and online video technologies and how video is an integral part of the graphic information industry. Concentrates on commercial and client-driven video production.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 OR Visiting University Student
GIT	333	Printing Technology	Theory and application of sheet and web press technology for offset-lithography, flexography, screen process, and digital printing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 250 OR Visiting University Student
GIT	334	Image Editing and Manipulation	Theory and application of advanced image editing and raster techniques for reproduction and dissemination.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 or Graphic Information Technology or Internet/Web Development BAS major OR Visiting University Student
GIT	335	Computer Systems Technology	Computer technology: hardware, software, storage, networking, Internet, telecommunications, and information systems. Requires independent research. Not for credit for BS Graphic Information Technology major.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Not for credit for the Graphic Information Technology BS degree OR Visiting University Student
GIT	337	Web Content Design	User-centered design principles for visual content on the World Wide Web with emphasis on content strategy, user experience, coding and interactivity.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 215; GIT 230 OR Graphic Information Technology BAS Major OR Internet and Web Development BAS major; Credit is allowed for only GIT 310 or GIT 337 OR Visiting University Student
GIT	340	InfoDesign/Usability	Design and technology solutions for increasing Website usability and methods of organizing information to improve the user experience.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GIT 340 or GIT 494 (Information Design and Usability) or GIT 542 OR Visiting University Student
GIT	384	Commercial Photography	Digital image capture, and output in a commercial studio emphasizing publishing workflow.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology BAS major or Applied Science (Internet and Web Development) BAS major or GIT 230 OR Visiting University Student
GIT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	402	New Media Internet Tech	Project-based exploration of new media Internet technologies from a graphic technology perspective. Emphasizes how, why, and when new media can be used to enhance a Web site and the user's experience.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GIT 402 or GIT 502
GIT	411	Computer Animation	3-D computer animation methods: rigging for video games, principles of animation, loops, skinning, blending, advanced modeling and motion.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 312 OR Visiting University Student
GIT	413	Prof Port Dsgn and Pres	Digital media portfolio design and production to include planning, audience analysis, content selection, authoring tools and formats, production, copyright considerations, marketing and delivery.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Info Tech BS, Graphic Information Tech (User Experience) BS, or Applied Sci (Graphic Info Tech) BAS major; GIT 303; minimum senior standing OR Applied Sci (Internet & Web Develop) BAS major OR Visiting University Student
GIT	414	Web Site Design/Internet/Web	Design, authoring, standards, protocols, tools and techniques for development for different Web-based technologies.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	415	AdvDigVideoTechniques	Advanced video creation and editing techniques including motion graphics, green screen technology, audio sweetening, crew and commercial production. Course culminates with a completed video production that is commercial and professional in nature.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 315
GIT	417	Adv Web Markup and Scripting	Industry-standard programming languages and techniques to add user interactivity to graphic information Web sites and Web applications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	418	Multimedia Author/Script/Prod	Extended application of industry-standard scripting languages and techniques to add user interactivity to graphic information websites and web applications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 417 OR Visiting University Student
GIT	432	Graphic Industry Business Prac	Business practices related to the graphics industry; business models, cost and rate analysis, marketing and management approaches.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum senior standing; Credit is allowed for only GIT 432 or GIT 598 (Graphic Industry Business Practices) OR Visiting University Student

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GIT	435	Website and E-Commerce Strat	E-Commerce site management, marketing analytics and e-commerce business models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 414; Credit is allowed for only GIT 435 or GIT 598 (Website & E-Commerce Strategy) OR Visiting University Student
GIT	437	Color Reproduction Systems	Scientific analysis for the engineering of color reproduction systems and color models used in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 334; Credit is allowed for only GIT 437 or GIT 573
GIT	450	Digital Workflow/Graphic Indus	Digital production system analysis for content creation, automation output of graphic information to print and Web, including networking and job tracking.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 215; GIT 303 OR Applied Science (Internet & Web Development) BAS major; Credit is allowed for only GIT 450 or GIT 598 (Digital Workflow in Graphic Industries) OR Visiting University Student
GIT	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum senior standing; Pre- or corequisite(s): GIT 413 OR Visiting University Student
GIT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		
GIT	490	Adv Commercial Photography	Studio-based class focusing on set design, advanced photographic techniques, raw workflow, marketing, business, and digital rights management.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 384 OR Visiting University Student
GIT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6		Prerequisite(s): Barrett Honors student
GIT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6	L	Prerequisite(s): Barrett Honors student
GIT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-3		
GIT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	502	New Media Int Tech	Project-based exploration of new media Internet technologies from a graphic information technology perspective. Emphasizes how, why and when new media can be used to enhance a Web site and the user's experience while maintaining branding cohesively across all technologies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 402 or GIT 502
GIT	515	WebDesignTech	Standards, tools and techniques for creating websites, with emphasis on designing for multiple devices and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	519	AdvScriptWeb	Uses industry-standard markup and scripting languages to develop interactive websites and applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	537	Cross Media Production	Directed group study of selected current issues relating to cross-media production for the graphic information industries. Requires graduate group leadership.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS student or Technology (Graphic Information Technology) MSTech student
GIT	538	Personnel Dev/Graphic Industry	Employee training and development specific to production and management in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): graduate student in Technology (Graphic Info Tech)
GIT	540	Cross-Media Design Solutions	Universal design theory, creative problem solving, and case study applications for print, Web, and new media products of the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student
GIT	542	Usability/User Experience	Design and technology solutions focusing on how information is organized graphically to communicate and how website usability is employed to improve human interaction with inline information.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student
GIT	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): User Experience MS student; minimum 24 graduate TWC hours; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
GIT	573	Color Metrology	In-depth study and analysis of systems used to manage color reproduction in the graphic arts industry and information technology.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 437 or GIT 573

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GIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	501	Global Thinking in Education	An online course introducing students to the analyses of worldwide factors that affect a range of issues in education including access, quality and sustainability across countries and education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	502	Inquiry in Global Education	Students learn to locate; interpret and critically analyze global education research literature (including comparative, qualitative, and quantitative approaches); develop problem statements and conduct a literature review.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	503	Eval Glob Edu Policies, Progs	Examines principles, methods and practices of evaluating education programs and policies in international settings. Focuses on types of evaluation, evaluation design, data collection and monitoring, and utilization of findings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	504	Issues in Global Edu Lit	Reviews, identifies and synthesizes the empirical research literature. Students write a conceptual literature review in an area of interest of global significance. review, identify and synthesize the empirical research literature and will write a conceptual literature review in an area of interest of global significance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	505	Evidence in Global Edu Inquiry	Covers the basic research methods associated with global education inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	506	Applied Inquiry in Global Edu	Guides students in the development of a proposal for an applied inquiry study to explore and analyze an education problem in the student's interest in an area of global import. Such issues may include but are not limited to education access, quality and sustainability.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	101	Intro to Geology I (Physical)	Basic principles of geology, geochemistry, and geophysics. Rocks, minerals, weathering, earthquakes, mountain building, volcanoes, water, and glaciers. Students must complete both GLG 101 and GLG 103 to receive an SQ (general studies).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	

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GLG	102	Intro Geology II (Historical)	Basic principles of applied geology and the use of these principles in the interpretation of geologic history. Both GLG 102 and 104 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SG & H	
GLG	103	Introduction to Geology I-Lab	3 hours lab, some field trips. Both GLG 101 and 103 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Credit is allowed for only ENV 103 or GLG 103 OR Visiting University Student
GLG	104	Introduction to Geology II-Lab	Lab techniques involving map interpretation, cross sections, and fossils. Both GLG 102 and 104 must be taken to secure SG general Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SG	Corequisite(s): GLG 102 OR Visiting University Student
GLG	108	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice; rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
GLG	110	Dangerous World	Geological studies as they apply to interactions between humans and Earth. Includes geological processes and hazards, resources, and global change. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ & G	
GLG	111	Dangerous World Laboratory	Basic geological processes and concepts. Emphasizes geology-related environmental problems concerning Arizona. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	
GLG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	301	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student
GLG	304	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102, GLG 110, GPH 111, SES 121, or minimum junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373
GLG	305	Dynamic Earth	Emphasizes the link between Earth's interior and surface, focusing on Earth systems and cycles, such as observation and modeling of the geometry and motions of Earth's rigid outer shell, the tectonic plates, and how they are coupled to the geologic record, the nature of Earth's internal structure, and convective motions within the planet. Specific topics include: (1) essentials of Earth's dynamic interior (models for physical and chemical evolution); (2) essentials of lithosphere evolution (cooling of oceanic plates, the age of the Earth, and continent formation); (3) multi-scale tectonics (plate tectonics, continental deformation, mountain building, tectonic context of metamorphism); (4) essentials of volcanism in a tectonic context; (5) geodynamic context of plate boundaries; and (6) chemical cycles (role of the solid crust and mantle for transporting, storing, and cycling water and minerals). Provides an essential global context for studies of Earth and Environmental Science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100 or CHM 101 or higher or PHY 101 or higher with C or better, or both SES 220 and SES 225 with C or better; GLG 101 or SES 121 with C or better; MAT 170, 210, or 251 with C or better
GLG	310	Structural Geology	Geologic structures and the mechanical processes involved in their formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student

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GLG	321	Mineralogy	Crystal chemistry, crystallography, mineral identification, origin and occurrence of minerals, systematic mineralogy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): CHM 113 (or both CHM 111 and 117 or 114) with C or better; MAT 170, 210, 265 or 270 with C or better
GLG	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100, BIO 182, BIO 282, GLG 101, or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, or 114 with C or better; Credit is allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
GLG	327	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone—in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Preq(s) w/ C or btter: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Credit/or only GLG 327 or SOS 374 OR Visiting University Student
GLG	340	Geohazards of Mediterranean	Covers geological studies as they apply to interactions between humans and Earth, focusing on geological hazards. Hazards present risks to life, property, global commerce and infrastructure. Such hazards are now more likely than ever to cause large death tolls and impact the global economy, due to increasing population density and the emergence of a global marketplace. Italy is a country that is exposed to a wide range of geologic hazards, such as volcanic eruptions, earthquakes and landslides. Because of its natural geologic setting and long history of scientific leadership, Italy has one of the world's most well-established scientific communities to study and mitigate geologic hazards. These issues are addressed and discussed from both a scientific and human perspective, with primary focus placed on Italian case studies and the role of Italian institutions in hazard science.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 340 or GLG 394 (Geologic Hazards of the Mediterranean)
GLG	362	Geomorphology	Land forms and processes that create and modify them. Lab and field study of physiographic features.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 266 or 271 with C or better OR Visiting University Student
GLG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	404	Fundamentals Planetary Geology	Surveys planetary topics, including impacts, tectonics, and volcanism on planetary objects, and use of spacecraft data, including geological mapping.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101, GLG 102, SES 121, or SES 122 with C or better OR Visiting University Student
GLG	406	Geology of Mars	Geological evolution of Mars through analyses of spacecraft data, theoretical modeling, and study of terrestrial analogs; emphasizes current work. Possible field trips to examine Arizona geology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	410	Computers in Geology	Geological computer skills including data processing, visualization, presentation, numerical analysis, software and hardware applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): GLG 101 or SES 121 with C or better
GLG	418	Geophysics	Solid earth geophysics; geomagnetism, gravity, seismology, heat flow. Emphasizes crust and upper mantle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 272 or 267 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 272 or 267 with C or better; PHY 151 with C or better OR Visiting University Student
GLG	419	Geodynamics	Emphasizes application of continuum principles to geological problems, including lithospheric stresses, heat transfer, fluid mechanics, and rock rheology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite(s): MAT 267 or MAT 272 with C or better; PHY 131 and 132 (or PHY 151) with C or better
GLG	420	Volcanology	Distribution of past and present volcanism, types of volcanic activity, mechanism of eruption, form and structure of volcanoes, and geochemistry of volcanic activity.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite: Engineering, Math or Science major; Minimum Junior standing

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GLG	422	Planetary Volcanology	Studies the effects of planetary environments and magma compositions on styles of volcanism and the nature of volcanic products on the terrestrial planets and outer planet satellites. Overview of volcanism on specific planetary objects, analysis of spacecraft image data, basic mathematical volcanic modeling, and reviews of key papers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 420 with C or better
GLG	424	Petrology	Origin of igneous and metamorphic rocks. Optical mineralogy, hand specimen identification, and thin-section analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 321 with C or better OR Visiting University Student
GLG	430	Paleontology	Introduces concepts and analytical techniques in biogeology, paleobiology, paleoecology, and paleoenvironmental reconstruction from the fossil record.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 12 with C or better; GLG 104 or SES 124 OR Visiting University Student
GLG	435	Sedimentology and Stratigraphy	Examines the fundamental principles and tools utilized in the study of sedimentology and stratigraphy. Focuses on the origin, transportation and deposition of sediment, and the processes that lead to the formation of sedimentary textures, structures and stratal packages. Emphasizes description, analysis and interpretation of lateral and vertical changes in sedimentary strata, both in the field and in laboratory exercises, as it pertains to spatial and temporal variability in depositional mechanisms and environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 122 with C or better; GLG 321 with C or better
GLG	441	Ore Deposits	Origin, occurrence, structure, and mineralogy of ore deposits.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; GLG 310 or 321 with C or better OR Visiting University Student
GLG	451	Field Geology I	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): GLG 310 with C or better; Pre- or corequisite: GLG 321
GLG	452	Field Geology II	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): GLG 310 with C or better; GLG 321 with C or better; GLG 451 with C or better
GLG	455	Advanced Field Geology	Geologic mapping in igneous, sedimentary, and metamorphic terrains of the Basin and Range province of Arizona.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): GLG 310 with C or better; Pre- or corequisite(s): GLG 451 with C or better if completed OR Visiting University Student
GLG	460	Astrobiology	Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 112 or BIO 182 or BIO 282 or GLG 102 or SES 122 with C or better; one 300-level course in AST or BIO or CHM or GLG or MIC or PHY or SES with C or better; Credit is allowed for only AST 460 or GLG 460 OR Visiting University Student
GLG	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and minerals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Credit is allowed for only GLG 461 or MIC 461
GLG	464	Solving Environmental Problems	Capstone course intended primarily for seniors in the Earth and Environmental Studies degree program. Hybrid self-study design project workshop guided by faculty, in which student teams research and develop plans for a viable solution to a real environmental problem in the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Earth and Environmental Studies BA major; GLG 305 with C or better; GLG 327 with C or better; senior standing
GLG	470	Hydrogeology	Geology of groundwater occurrence, aquifer and well hydraulics, water chemistry and quality, contaminant transport, remediation. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	471	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student
GLG	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)

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GLG	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
GLG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
GLG	485	Meteorites and Cosmochemistry	Chemistry of meteorites and their relationship to the origin of the Earth, solar system, and universe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only GLG 485 or CHM 485
GLG	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): CHM 302 or GLG 321 or GLG 481 with C or better; Credit is allowed for only CHM 489 or GLG 489 or GLG 490 (Field Geochemistry)
GLG	490	Topics in Geology	Special topics in a range of fields in geology.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
GLG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student
GLG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	495	Undergraduate Thesis	Guided research culminating in the completion and presentation of an undergraduate thesis based on supervised research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 546 or GLG 598 (Advanced Watershed Hydrology) or CEE 546
GLG	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
GLG	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)
GLG	581	Isotope Geochemistry	Geochemistry and cosmochemistry of stable and radioactive isotopes; geochronology; isotope equilibria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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GLG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GPE	10	Verbal Skills Scholars	Helps international graduate students (prospective ITAs) as well as other graduate students or visiting scholars at ASU improve their spoken English (pronunciation and fluency). Helps familiarize students with American classroom culture and helps them become effective classroom teachers. Each student receives an individual pronunciation assessment to help him or her focus on areas needing improvement. There is direct instruction and practice of pronunciation (e.g., sound, stress, rhythm, intonation). By participating in and leading class discussions, by working in small groups or pairs and by preparing for videotaped presentations, students improve English fluency.	N	LEC	Y	YGB	Office of the University Provost	Global Launch	3		
GPE	11	IS Teacher Training	Familiarizes international graduate students (prospective ITAs) at ASU with American classroom culture and helps them become effective classroom teachers. Exposes various methods of teaching commonly used in the American university classroom.	N	LEL	N	YGB	Office of the University Provost	Global Launch	3		
GPE	30	Spec Prog Language Foundations	Designed for noncredit, special program international students. Helps students develop the skills needed to write, read and communicate effectively in the English language in professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	31	Special Prog Ext Project Work	Designed for special program international students. Helps students effectively apply the four language skills—reading, writing, speaking and listening—in real-world, professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		

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GPE	32	SP: Field-Specific Engl Skills	Designed for special program international students. Takes field-specific English language and develops the reading, writing and communication skills in order to successfully navigate professionally within a global context.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	88	Engl Uni Success:Wrt Rdg Rsrch	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands literacy and critical thinking skills needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	89	Engl Uni Success:Acad Thinking	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands critical thinking skills and verbal and written expression needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	90	Business Presentation Skills	Develops ability to verbally persuade, inform and motivate an audience. Covers integral key competencies such as: identifying audience, researching and organizing information, preparing and delivering effective visuals, and communicating concisely in English. Coupled with activities which include impromptu business-themed presentations, evaluations by the professor and feedback from peers.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	91	Academic & Business Writing	Develops the skills needed to write clearly and effectively, in both academic and business settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with impactful content.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	92	Critical Thinking Case Studies	Teaches international students reading and critical thinking strategies required for a master's-level program. Teaches how to read and understand dense textbooks, articles and magazines in a timely fashion and identify the important information.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	93	Business & Cross-Cultural Comm	Improves international students' ability to compare and contrast aspects of American business culture with other cultures in order to understand similarities and differences.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	94	Bus Listening & Conversation	Improves the student's ability to effectively communicate orally at a master's level. Covers speaking and listening strategies and skills necessary to participate in discussions related to business topics. Students learn to control the input they receive and produce coherent and appropriate responses.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	95	Academic and Technical Writing	This non-credit course helps graduate-bound international students develop the English skills needed to write clearly and effectively, in both academic and technical settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with relevant and thoughtful content.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	96	Graduate Presentation & Comm	Designed for graduate-bound international students, this non-credit course helps students develop the skills needed to communicate in English effectively in a variety of graduate academic situations.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	97	Graduate Reading Skills	Utilizing topics from students' chosen field of study, this non-credit course is designed to give graduate-bound international students a thorough grounding in strategies and techniques for efficient and effective reading in English of complex, dense texts expected of graduate degrees. Graduate students build foundations for critically analyzing texts and applying them to relevant contexts, while amassing a graduate-level English lexis.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPH	111	Intro to Physical Geography	Spatial and functional relationships among climates, landforms, soils, water, and plants. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	112	Intro to Phys Geography Lab	Includes some local or virtual field trips. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	Pre- or corequisite(s): GPH 111 OR Visiting University Student
GPH	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Prerequisite(s): Freshman standing; maximum 25 hours OR Visiting University Student
GPH	210	Society and Environment	Examines the interaction among social processes, key environmental issues, and nature's role as a resource at global and regional scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	
GPH	211	Landform Processes	Laboratory science class on earth-surface processes, with exercises emphasizing how erosion, transportation, and deposition modifies landforms.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SQ	

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GPH	212	Introduction to Meteorology	Fundamentals of weather and climate, including basic atmospheric processes and elements. Students whose curricula require a lab course must also register for GPH 214. Both GPH 212 and 214 must be taken to secure SQ General Studies credit	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	213	Climate and Weather	Fundamentals of meteorological/climatological analysis, including terminology and symbology. Recommended for meteorology/climatology program students. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SG	
GPH	214	Intro to Meteorology Lab	Introduces basic meteorological/climatological data and measurements. Suggested concurrent enrollment in GPH 212. Both GPH 212 and 214 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	
GPH	215	Climate and Weather Laboratory	Fundamentals of meteorological/climatological map analysis and interpretation. Recommended for meteorology/climatology program students. May be taken concurrently with GPH 213. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SG	
GPH	267	Extreme Weather	Introductory survey of extreme weather and climate processes and the often disastrous consequences at the intersection of human operations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GPH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	314	Global Change	Response of Earth's natural systems (atmosphere, hydrosphere, lithosphere, biosphere) to past environmental change, and effects of potential future changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GPH	381	Geography of Natural Resources	Nature and distribution of natural resources and the problems and principles associated with their use.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	
GPH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	405	Energy and Environment	Sources, regulatory and technical controls, distribution, and consequences of the supply and human use of energy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GPH 405 or GPH 505
GPH	409	Synoptic Meteorology I	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): PHY 121 or 150
GPH	410	Synoptic Meteorology II	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): GPH 409 with C or better
GPH	412	Physical Meteorology	Physical processes in the earth-atmosphere system on regional and global scales; concepts and analysis of energy, momentum, and mass balances.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 111; MAT 270; PHY 121/122 with C or better; Credit is allowed for only GPH 412 or GPH 591 (Physical Meteorology)
GPH	413	Meteorologic Instrmnt/Measure	Design and operation of ground-base and aerological weather measurement systems. Collection, reduction, storage, retrieval, and analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 213 with C or better or Visiting University Student
GPH	414	Climate Change	Surveys three climate research areas: paleoclimatology, theories (e.g., greenhouse warming), numerical modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Prerequisite(s): GPH 111 or 213 or 314 with C or better
GPH	418	Landforms of the Western US	Studies landforms and geomorphic processes in the western United States, including lecture, topographical maps, aerial photographs, satellite imagery, and field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	
GPH	422	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
GPH	433	Alpine and Arctic Environments	Regional study of advantages and limitations of the natural environment upon present and future problems involving resource distribution, human activities, and regional and interregional adjustments.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Credit is allowed for only GPH 433 or 598 (Alpine & Arctic Environments)
GPH	474	Dynamic Meteorology I	Large-scale atmospheric motion, kinematics, Newton's laws, wind equation, baroclinics, vorticity, and the midlatitude depression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student

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GPH	475	Dynamic Meteorology II	Topics in climate dynamics. General circulation, numerical modeling, teleconnection phenomena, and surface-atmosphere interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 474 with C or better
GPH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GPH	491	Geographic Field Methods	Field techniques, including use of aerial photos, large-scale maps, and fractional code system of mapping; urban and rural field analysis to be done off campus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GPH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GPH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student
GPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GPH	511	Fluvial Processes	Geographical aspects of processes of river erosion, transportation, sedimentation; emphasizing spatial characteristics of forces, resistance, landforms, sediment; includes computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	513	Meteorologic Instrmnt/Measur	Design and operation of ground-based and aerological weather measurement systems. Collection, reduction, storage, retrieval and analysis of data. Final project requires designing a field research measurement program for a hypothetical research question.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 413 or GPH 513 or GPH 598 (Meteorological Instrmntn M)
GPH	563	Urban Climates	Explores the urban climate system and its relationship with the built infrastructure of cities, including the causes, consequences and mitigation options for urban heat islands. Topics include the urban energy balance; materials in the urban environment; waste heat from energy consumption in cities; scales of urban-influenced climate modification; and implications for human comfort/health, air quality and energy consumption. Intended for graduate students in geographical sciences, urban planning, design, engineering, and related disciplines interested in learning about the urban climate system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 563 or GPH 598 (Urban Climates) or GPH 598 (Urban Heat Island)
GPH	569	Digital Analysis Remote Data	Focuses on the digital image processing of remotely sensed data for earth resource analysis and applications. Provides the skills and knowledge to apply digital remote sensing techniques for biophysical and environmental planning and problems. Through laboratory work, students have opportunities to practice concepts and techniques learned in the lecture part. Requires a reasonable background in college algebra and basic statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only GPH 394 (Digital Analysis of Remotely Sensed Data), 569 or 598 (Digital Analysis of Remotely Sensed Data)
GPH	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
GPH	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	596	Advanced Spatial Statistics	Multivariate and advanced statistical techniques including Box-Jenkins modeling and spectral analysis. Requires project papers and presentations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	101	Designing Life	Helps students develop strategies to successfully navigate their education experience. Focuses on critical and reflective thinking.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		

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GRA	111	Graphic Design History I	Surveys development of visual communication from its origins to the 20th century. Investigates significant technological, industrial, and social influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
GRA	112	Graphic Design History II	Surveys contemporary and 20th-century graphic design. Investigates relationships among graphic design and related disciplines, technological, industrial, and social influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 111 with C or better
GRA	121	Principles Graphic Design I	Graphic design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Graphic Design major; Corequisite(s): GRA 111 OR Visiting University Student
GRA	122	Principles Graphic Design II	Continued exploration of graphic design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 121 with C or better; Environmental Design or Graphic Design major. Corequisite(s): GRA 112
GRA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	220	Design Drawing I	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for graphic design thinking.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	221	Letterform	Drawing of letterforms with focus on proportion and structure. Introduces letterform nomenclature and classifications. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	222	Visual Communication I	Theoretical and applied studies in shape, drawing, and color. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	223	Typography	Theoretical exercises in spatial and textural qualities of type. Problems in tension, activation, and balance. Exercises in simple typographical applications. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 220 with C or better; GRA 221 with C or better OR Visiting University Student
GRA	224	Visual Communication II	Transition from theoretical to applied problems. Emphasizes refinement of visual skills. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 220 with C or better; GRA 222 with C or better OR Visiting University Student
GRA	225	Comm/Interaction Design Theory	Theory related to the design of communication artifacts and interaction within various media environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	321	Technology for Design I	Explores the process of technology in design. Projects interface with GRA 361.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design student; Corequisite(s): GRA 361 OR Visiting University Student
GRA	322	Technology for Design II	Emphasizes advanced technology in design problems. Projects interface with GRA 362.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 321 with C or better; Corequisite(s): GRA 362
GRA	345	Design Rhetoric	Develops critical thinking and expression of ideas in concise and persuasive written and spoken form.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Architectural Studies, Design Studies, Digital Culture (Design), Environmental Design, Graphic Design, Industrial Design, Interior Design, or Landscape Architecture major, or Design Studies minor; ENG 102, 105, or 108 with C or better OR Visiting University Student
GRA	361	Visual Communication III	Explores methodologies of strategic communication, development of visual systems, and information design ideation processes leading to applied projects in print and digital media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 223 & 224 with C or better; Co-requisite: GRA 321 OR Visiting University Student
GRA	362	Visual Communication IV	Comprehensive studio projects with emphasis on production processes leading to multidisciplinary applied projects in print, 3-D space, and digital media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 361 with C or better; Co-requisite: GRA 322
GRA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	401	Creative Environment	Explores and investigates theories of the psychology of space, psychology of people in space, and the psychology of objects as it pertains to creativity and the creative environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	421	Exhibit Design	Familiarization with the processes associated with the design of exhibits, especially visual communication in 3-D.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student

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GRA	422	Motion Graphics/Intractn Design	Discusses and explores theory related to the design of motion graphics and interaction through lectures and studio projects.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 322 with C or better OR Visiting University Student
GRA	423	Advanced Interaction Design	Advanced discussion and exploration of theory related to the design of interaction.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: GRA 422
GRA	424	Advanced Media	Advanced exploration of digital media for communication.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 422 with C or better
GRA	440	Finding Purpose	Career orientation in the creative professions, including value clarification, decision making, lifestyle planning, goal setting, and expression of individual talents.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	461	Visual Communication V	Comprehensive studio projects with emphasis on design processes, including research, writing, critical thinking, practice, presentation, and analysis.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student
GRA	462	Visual Communication VI	Comprehensive studio projects pursued in cooperation with a public organization or private enterprise. All projects culminate in an exhibit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 461 with C or better OR Visiting University Student
GRA	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
GRA	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475
GRA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Graphic Design major; GRA 362 with C or better
GRA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
GRA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
GRA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
GRA	501	Creative Envir & Collab Leader	Explores and investigates creativity and group collaboration leadership as it applies to the creative process.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): graduate Herberger Institute for Design and the Arts major
GRA	521	Adv Vis Com Des Studio I	Students translate data, stories and references that they collect in their research into masterful visual narratives. This studio is an inquisitive environment for exploring ways to frame information and weave stories with graphic design. Students acquire new knowledge as individuals and as a group. Emphasizes studio-based research, conceptual development and articulation of process, voice and a high level of design execution.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Visual Communication Design major. Credit is allowed for only GRA 521 or GRA 590 (Advanced Visual Communication Design Studio I)
GRA	522	Adv Vis Com Des Studio II	Encourages students to develop a framework for understanding the role of design systems, tools and objects as cultural artifacts and their reflection on social diversity. In particular, students focus on the cultural experience of collaborative consumption as it is fostered through visual communication design.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 521. Credit is allowed for only GRA 522 or GRA 590 (Advanced Visual Communication Design Studio II)
GRA	526	Visiting Designers	Series of workshops (three per semester) in which students work closely with professionals and scholars in design and related disciplines.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	561	Methods in Visual Comm I	Introduces methodology in visual communication.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	562	Methods in Visual Comm II	Advanced theories and methodologies in visual communication. Emphasizes visual search as the synthesis of theory and practice.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 561 with C or better
GRA	563	Thesis Document Design	Emphasizes the construction of the final thesis document as a visual communication object and/or medium.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student
GRA	581	Internship in Teaching Design	Develop assignments, conduct critiques, structure dialogue, make presentations, and assist in the instruction of studio and lecture courses.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student

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GRA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	621	Adv Vis Com Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to work together to identify new design opportunities. For approximately one week during the semester, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 522
GRA	622	Adv Vis Com Des Studio IV	As a culmination of study at the master level, the student is responsible for the development of an individually determined, semester-long project in response to defined objectives, periodic commentary by committee, and formal review. Students meet regularly with a faculty member to discuss assignments. Final faculty review and project book containing a written as well as graphic theoretical component are the forms of final presentation for this contribution to the field of visual communication design.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 621
GRD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Graduate College	Graduate College	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	N	LEC	Y	Z1	Graduate College	Graduate College	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRK	101	Elementary Ancient Greek	The beginnings of the ancient Greek language, the language of Homer, Sophocles, Plato and the New Testament. Grammar and vocabulary, with an emphasis on reading ability. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
GRK	140	Grk&Lat Roots Bioscfc Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
GRK	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142
GRK	201	Intermediate Ancient Greek	Ancient Greek syntax and grammar, equipping the student to read the foundational texts of Greco-Roman antiquity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): GRK 101 with C or better

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GRK	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
GRK	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	301	Ancient Greek Literature I	Readings in ancient Greek prose; advanced grammar. May be repeated for credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better OR Visiting University Student
GRK	302	Ancient Greek Literature II	Readings in ancient Greek poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better
GRK	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
GRK	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
GRK	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
GRK	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
GRK	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
GRK	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
GRK	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GRK	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
GRK	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
GSC	501	War, Conflict and Security	Explores the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur. Introduces the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of the historical background of war and conflict, and some of the classic philosophical and military-strategic theories and conceptions of war. Introduces the institutional framework, the Westphalian state-based system of modern international law and relations, within which much of the theory and practice of modern conflict and war has developed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	502	Security Studies	Continues the exploration of the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur; the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of several fundamental themes that run through the history of war and strategy, and discusses the increasing importance of nonmilitary "soft power" in managing conflict situations. Also introduces the importance of regional knowledge in conflict as a critical operational competence (using the Russian invasion of Crimea and Ukraine as a case study), as well as the broader challenges of civilizational conflict and the importance of identity and narrative in modern conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	503	Future of War	Provides an overview of key issues, themes and ideas associated with the future of war. Contextualizes this discussion with a reflection on the impact of 9/11, especially within the U.S. Engages a number of core concepts, including the meaning, nature and experience of war including theories that violence is in decline. Also considers the changing impact of new wars on civilians, shifts in current and future technology and future scenarios including questions of climate change, global demographics and potential major power conflicts. Links the ideas, theories and understandings of the future of war with specific cases and concrete examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	504	Understanding Conflict and War	Provides a critical overview of different definitions and meanings of war and armed conflict. Engages key theories used to understand conflict including realism, neorealism, liberalism and constructivism. Considers core issues in the field, linking empirical studies with explanations for what drives, sustains and resolves conflict including reviewing the fact that democratic states tend not to go to war with each other (the democratic peace); the structure and logic of arms races; escalation and alliance; and core ideas regarding peace, conflict management and conflict resolution. Many of the issues and theories reviewed in this class are linked with case studies and concrete examples.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	505	Law of War	Provides an overview of key elements of the law of war, also known as international humanitarian law (IHL) and the law of armed conflict (LOAC). Engages basic questions of international law, reviewing its history, sources and structure. Covers jus ad Bellum, the rules governing how states legally go to war as well as jus in bello, the established ideas regarding how to manage actions during armed conflict. Covers key principles within the law of war, including distinction, proportionality and necessity as well as reviewing the differences between international and noninternational armed conflicts and other key ideas. Reviews the systems through which the law of war is enforced and also considers basic theoretical and practical issues regarding compliance. In general, links the ideas, practices, rules and understandings of the law of war with specific cases and concrete examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	506	U.S. Politics of Security	Builds a foundational understanding of the complex system of formal and informal actors and structural forces that shape U.S. security policy. Starts with both theoretical and case study examinations of the role domestic politics plays in the production of policy decisions. Analyzes critical institutional actors and relationships between actors, including: the President and Congress, the National Security Council and interagency, and the civilian-military relationship. Finally, investigates key structural forces placed on the policy-making process by the American society, and the relationship between policymakers and the public.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	507	Global Politics of Security	Offers several approaches to understanding the global politics of security, including: the structure of international and multinational security institutions and actors including nongovernmental organizations (NGOs), the United Nations' Security Council, peacekeeping missions, regional organizations (NATO, EU, Inter-American System, ASEAN) and others. Also considers the roles of private military and intelligence contractors and corporations working on issues of direct and indirect relation to security issues. Through specific case studies and examples, reviews the operation of these bodies and their complex relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	508	Comparative Studies of Conflict	Provides a critical overview of key theories on the causes, justifications and structures of political conflict and the use of violence. Begins by outlining core issues within the problem of social order, that is, how to think about managing governance and power. Reviews the idea of "collective action" and its link with force and violence, ideas that are contrasted with nonviolence as a political strategy. Then considers civil wars and interstate wars, comparing these forms of organized violence, as well as the current challenges of armed nonstate actors (within an international system premised on states) and an overview of the meaning of peace. Links the issues and theories reviewed in this class with case studies and concrete examples as a means of linking key ideas with their practical and policy implications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	509	Emerging Technologies	Provides an introduction to the implications of accelerating changes in military and security technologies, fueled by rapid developments in five core technology systems: nanotechnology, biotechnology, information and communications technology (ICT), robotics and applied cognitive science. Also introduces the idea of revolutions in military affairs, a concept that has been used to frame discussions about the strategic implications of new technologies from drones to cyber.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	510	Governance Conflict/Transition	One of the most pressing current global security policy issues involves understanding and implementing strategies, mechanisms and processes to address post-conflict and transitional contexts. How do societies create and manage representational governance after the fall of authoritarian regimes? How can institutions be rebuilt and reconstituted? How can a social order address the justice demands of victims of brutal political violence whose suffering was often a key element of prior systems of rule? Provides a critical introduction to the field of post-conflict reconstruction and transitional justice. Reviews the tense and uncertain nature of post-conflict environments and their challenges, engages the security questions raised by peacekeeping and stability operations. Also considers the difficulties of governance and reconstruction in the aftermath of conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	511	Terrorism and Insurgency	Provides a critical overview of the use of terror by governments, insurgents and other nonstate actors. Engages the definition of terrorism and provides an overview of key practices and strategies. Reviews key theories as to the causes, meaning and impact of the deployment of terror as a strategy by distinct groups. This involves a consideration of state terror, insurgencies and global terror networks. Links many of the core ideas reviewed in this class with a set of case studies designed to ground the broader discussion of terror within specific situations and contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	512	Global Trends	Provides an overview of a number of key issues within global politics in the post-Second World War era. Reviews important institutions, including the United Nations, the World Bank, the International Monetary Fund. Provides a critical review of key theories, discourses and practices of international development, decolonization, democratization, poverty and gender issues. Reviews these major aspects of global society in relationship to core questions of governance and social order with a consideration of past, present and future trends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	550	Capstone	Serves as the culminating experience of the Masters in Global Security (MAGS). The capstone course allows each student to explore a research area, interest, theme or question. Final written products will be developed individually based on consultation with faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; GSC 501
GSC	560	Overview of Cybersecurity	Provides an overview of key issues and ideas associated with cybersecurity. Each week presents a set of readings related to particular themes including: the principles of cybersecurity and the special challenges posed by an interconnected world; key elements of internet architecture; outline of cyberattacks and cyberdefense; public and private internet governance and protection; espionage; and an overview of cyberwar. Provides a general overview of questions and core concepts regarding the cyber domain, the nature and structure of the internet and how to understand the special risks, benefits, offensive and defensive elements of an increasingly interconnected world. Reviews a set of core theories, concepts and considerations to provide students who may have little background in the area and do not need any technical proficiency with a foundation for engaging the complex nature of cybersecurity and its rising significance for global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GSC 560 or GSC 598 (Overview of Cybersecurity)
GSC	561	Cybersec Threats and Trends	Provides an overview of cybersecurity threats and trends. Each week presents a set of readings related to particular themes including: an overview of hacking and data breaches; special challenges and risks associated with protecting critical infrastructure on a state and federal level; and the complex, global threats posed by cybercrime. Also explores the risks associated with rapidly expanding social media and interconnectedness currently and into the future as well as providing an overview of key legal and ethical issues associated with cybersecurity policy. Provides a general overview of these issues in an effort to outline major issues regarding cybersecurity threats and how to best think about their impact on global security. Assists students in developing a strong conceptual foundation for engaging these issues and their broad policy implications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	562	Cybersec/Global Pol/Resiliency	Provides an overview of global cybersecurity preparation and resiliency. Because international cybersecurity threats change rapidly and because complete protection for most systems is impossible in an interconnected world, a significant amount of cyber policy focuses on improving mechanisms of preparation and enabling multiple forms of resiliency. The general idea is that attacks cannot be prevented or fully anticipated so creating more flexible, redundant and multi-faceted systems is a useful policy. Each week's readings are related to themes including: understanding core vulnerabilities, types of attackers and targets, modes of deterrence and encryption systems and tools. Engages the special challenges raised by attribution and outlines how to conceptualize and ensure system resiliency. Provides a critical overview of central ideas, concepts and terminology for better engaging of cybersecurity preparation and resiliency as a key element of global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	563	Cybersec Planning and Strategy	Provides an overview of cybersecurity planning and strategy. Since cybersecurity is a constantly evolving field, many aspects of planning are in a state of continual evolution. Many believe that broad-based, flexible strategies are necessary to enable key actors and institutions to engage in adequate policies to ensure general cybersecurity preparedness. Class themes include: an overview of key institutions and actors, central concepts of threat analysis, public and private cyberpolicy, and elements of international regulation. Also engages issues of cybersecurity strategy, the special challenges of non-state actors and ways to conceptualize and engage the future of cybersecurity. Reviews essential ideas and concepts, gains familiarity with key actors and institutions, and engages the complex interplay of governmental, intergovernmental, commercial and non-state actors engaged in cyber threats and protective action.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	501	Global Tech and Development	Major theories of economic, political, and social development, with particular emphasis on the impact of current technologies and globalization.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	503	Tech & the Intl Political Syst	Historical development of international political system, with emphasis on role of technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	504	Tech/Dev in Zones of Conflict	Examines the special context of technology and development in zones of conflict that face wars among other nations, civil strife and dramatic political change.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	505	Soc Sci Inquiry for Global Dev	Research design and processes in the social sciences including development of problem statements, effective literature reviews, diverse techniques of primary and secondary data collection and analysis, and design and development of research proposals.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	506	AppliedProj Methods-Global Dev	Surveys theoretical frameworks, research methods and knowledge mobilization techniques for research and creative applied projects in global development.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	507	Tech/Dev in the Middle East	Examines historical and current patterns of political and socioeconomic development in the Middle East, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 507 or GTD 598 (Political Development in the Middle East)
GTD	508	Tech/Dev in Latin America	Examines historical and current patterns of political and socioeconomic development in Latin America, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 508 or GTD 598 (Technology and Development in Latin America)
GTD	509	Tech/Dev in North Africa	Examines historical and current patterns of political and socioeconomic development in North Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 509 or GTD 598 (Technology and Development in North Africa)
GTD	510	Tech/Dev in Sub-Saharan Africa	Examines historical and current patterns of political and socioeconomic development in Sub-Saharan Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 510 or GTD 598 (Technology and Development in Sub-Saharan Africa)
GTD	511	Development Policy & Practices	Since the Bretton Woods Agreements in 1944, enormous energy has been devoted to generating the right tools for global development policy. Yet, little attention is given to the relationship between these tools, the practice of development and actual outcomes. At best, it is understood as a "gap" between the theory of development policy and practices. There is no reflection on what the good development policy looks like or what collective learning we have thus far. Informs students on the complexity of policy making and its relationship to development practices through time. Creates an intellectual space to discuss the practices of global development; uses case studies to enhance students' creativity and skill needed in managing and negotiating critical development challenges. Approaches development policy (models, strategies and project design) primarily as a tool to legitimize power relation rather than to orient practice for desired development outcomes.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GTD	512	Intl Gov & Dev - Nuclear Tech	Examines the historical context, present development and possible futures of nuclear technologies around the world. Topics include the origins of the modern nuclear era (1945-present), the nuclear fuel cycle including waste management, nuclear energy for security and modernization, nuclear catastrophes, and new possibilities in nuclear technologies, as well as international policies, national imperatives and local concerns with nuclear development. Students gain a better understanding of the complex political, environmental, cultural and economic values that inform and shape the development and implementation of, as well as resistance to, nuclear technologies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 512 or GTD 598 (Technology and Development in Global Nuclear Energy)
GTD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	501	Perspectives on Aging/Life	Uses life course perspective to appreciate age over time and examine demographics, theories and changes of aging, and gerontological issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	502	ResearchProgramEval in Aging	Focuses on critical thinking and empirical research in aging, along with program evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	503	Diversity in Aging	Examines various assumptions and parameters of diversity, autonomy, interdependence, ethical standards and communication with older individuals	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	504	CaregivingIssuesFamiliesProfes	Focuses on family communication, common health problems, and family dynamics that affect the structure of the complex caregiving experience.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	505	InterdiscCommunityCollabAging	Focuses on community collaboration with the family and older individuals to provide comprehensive care in aging.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	506	AdminSystemsMgmt/Aging	Focuses on administration and management of long-term care providers in nursing facilities; subacute and post-acute care; assisted living; senior housing; and community-based care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	507	CareCoordContinuumofCare	Focuses on care coordination of older adults across the continuum of care. Content includes an examination of the components of care coordination and the skills needed to address the needs of older adults with complex health challenges.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	508	MH Assessment & Intervention	Focuses on the aging experience and examines principles of gerontological counseling theory and practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCA	509	Interventions/Aging in Place	Focuses on creating supportive interventions to assist older adults in maintaining independence in their home environments.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	510	InnovationsProgDevelop&Policy	Focuses on creating age-friendly communities using innovative interventions and programs to promote older adult independence and quality of life. Also explores the influence of policy on care of older adults.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	100	Intro Science Health Care Del	Introduces the science of health care delivery in the United States. Presents basic concepts in health services, health care organizations, and the delivery of safe, accessible, high-quality health care. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HCD	101	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
HCD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
HCD	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300 OR Visiting University Student
HCD	302	Health Care Management	Broad concepts and skills of management; application of these techniques to health care organizations. Students appreciate the variability of management styles and personalities and begin to develop their own style. Solidifies concepts through the use of case studies and asynchronous discussion boards.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	303	Global Health Care Systems	Examines health care delivery systems internationally and explores contemporary issues affecting the institutions that provide health care and the people who seek health services. Covers the historical development of international health care systems, the organization and financing of systems of care, and the policy process and priority setting. Also covers current efforts at health care reform. Provides students with the necessary professional skills to be effective participants in efforts to evaluate and improve the delivery of health care nationally and internationally.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	G	Prerequisite(s): minimum 30 hours OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
HCD	304	Health Care Finance	Influence and effect of health care financing from an institutional and individual perspective. Examines current issues in health care financing including the Affordable Care Act, payment models, Medicaid expansion, accountable care organizations, the role of health insurance and efforts to contain health care costs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Population Health BS major or HCD 302
HCD	330	Health Care Systems in US	Presents and integrates the organization, financing, and delivery of health services in the United States from the professional, organizational, community, and systems perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	332	Population Hlth Policy & Legis	Provides a historical and current overview of the federal/state/local law and policy-making processes that are relevant to population health, including how policies are implemented in society and the impact of those policies on health outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	400	Interpreting Scientific Lit	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	401	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
HCD	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402
HCD	403	Process Engineering	Core concepts in process engineering, specifically related to systems improvement and patient safety. The Institute of Medicine (IOM) advocates for integrating process engineering within health care to optimize health care outcomes. The IOM addresses multiple dimensions of health, including efficiency, effectiveness, safety, equity, patient-centeredness and access. These domains provide the framework from which faculty approach course content.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	404	Adv Concepts Sci Health Care D	Applies the themes of science, systems and leadership across the continuum of health and health care. Application and discussion of core competencies to facilitate critical thinking.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	405	Health Technology	Develops essential skills in identifying, analyzing and evaluating information technology applications in health care. Examples include electronic health records, computerized prescriber order entry, and computerized clinical decision support. Discusses the use of health technology in a variety of care settings, including outpatient and inpatient, and facilitate access to health care in resource-poor communities through the use of efficient technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HCD	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Triple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
HCD	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
HCD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Science of Health Care Delivery BS major; minimum senior standing; minimum 2.00 GPA

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HCD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HCD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
HCD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	
HCD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HCD	501	Biostatistics &Data Management	Provides an understanding of the statistical tools and principles of research design and methods in health behavior research in health environments. Encompasses an overview of quantitative, qualitative and mixed designs and focuses on the interpretation and communication of health behavior research through published reports and presentations. Incorporates research approaches and methodologies utilized in an array of content areas. Helps students gain a strong conceptual understanding and application of the statistical tools and research methods used to answer research questions of interest to health and health behavior researchers; it does not focus on mathematical treatments of underlying assumptions and formulae and related statistical problems sets or exercises.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	502	Health Care Systems and Design	Introduces direct health care delivery structures and processes within and across health care settings, and their impact on the patient, family and community experience of the health care system and services. Examines the interaction among people, resources, delivery systems and built environments using perspectives, tools and strategies from multiple disciplines to evaluate strengths, gaps and opportunities for system improvements.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	510	High-Value Pt-Centered Care	Evidence-based strategies for clinicians and health care administrators to implement into their workplace setting to promote healthy lifestyle behaviors and ultimately promote high-value, patient-centered care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511
HCD	517	Economic Eval in Health Care	This course will provide students with an introduction to economic evaluation in health care, including its use as a tool to assist with government decision making. The course will focus on the concepts and the methods involved in cost-effectiveness/utility analysis. It will facilitate the development of skills required to critically appraise economic evaluations and illustrate how to apply the concepts involved to assess health interventions.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	520	Population Health	Presents population health within a framework of health care delivery, public health, health promotion and prevention, health policy, and community programs and resources. Emphasizes a solutions-based perspective consistent with the Triple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	521	Law and Health Promotion	Analyzes case studies which illustrate the impact of policy and law on health promotion strategies and health outcomes. Includes discussions of the theoretical foundations supporting legal, ethical and economic decision making related to health promotion and real-world examples of the impact of current policies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCD	527	Healthcare Econ & Finance Mgmt	This course combines health economics and health care financial management. There is an introduction to double entry accounting to provide a working knowledge of cash and accrual accounting, plus an analysis of balance sheets, profit and loss statements and cash flow statements. How to construct a budget in a health care environment is a core skill in this course. The health economics component of the course introduces students to important economic concepts such as opportunity cost and supplier-induced demand and illustrates how these concepts can be applied to the health care industry.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	532	Health Care Mgt & Finance	Health care organizations are very complex institutions and require sophisticated understanding of modern management techniques. Provides a comprehensive overview of health care management concepts and principles with a focus on developing individual management skills. Centered on the management function and its unique purpose for an organization. Emphasizes planning, organizing, motivating and controlling, and how to acquire competency in these functions. Also addresses health care finance, which is an essential management competency.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	537	Comparative Health Care System	The first part of this course focuses on the principles and practice of health system analysis, the sources and utilisation of information relating to the development, organisation and operation of health services, and frameworks for assessing the performance of different health systems. Then, drawing on material from the health systems of affluent and developing countries, we examine the constitutional, legal, economic, social, and political environments within which health care systems operate and the various patterns that emerge. We review patterns of health service organisation and management: health policy development and planning; characteristics of personal, community and environmental health services and their activities; health service financing arrangements, including health insurance systems; and, the health workforce. The impact of some recent attempts at health system reform in different countries is assessed and proposals for future re-structuring are critically reviewed.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	540	Process Eng Health Qual&Safety	Provides an introduction to the science of health care delivery, an exciting field that focuses on how to achieve the quality care that providers want to deliver and patients expect to receive. Too often quality care is compromised by inadequately designed systems of care. Provides an overview of the health care delivery system and then introduces the major components of the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	547	Hlth Leadership Workforce Mgmt	This course critically examines a range of theories, models and approaches to leading and managing at different levels in health service organisations. It provides tools to identify and respond to management problems in the context of major changes in priorities and services in health and its workforce. Whether you come from a clinical, public health or other disciplinary background we consider how you can draw upon that understanding and your current organisational setting to strengthen your health leadership capacity and workforce management skills. Topics include: the shifting role of managers in health services; management and leadership theories and models; influence, power and management ethics; managing in resource constrained environments; diversity in health service settings; managing teams and motivating staff; conflict management and improving health worker performance; workforce planning and capacity building.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	550	Capstone	Discusses the results from student capstone projects, done in teams, and these projects related to broad topics explored during the prior coursework in the program. Capstone projects are identified early in the master's program in conjunction with and overseen by the degree leaders and the industry partners, and often a health care organization or health agency. These projects are worked on through the year with final written and verbal reports due in the last half of the semester.	N	RSC	N	GNA	College of Health Solutions	College of Health Solutions	1-2		Prerequisite(s): HCD 502 with C or better

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HCD	557	Clinical Governance Risk Mgmt	This course provides an overview of emerging health policy with particular attention to clinical governance. The course consists of three components. The first component targets the main constituents of clinical governance, including practice design, analysis and improvement, error reporting and investigation, public accountability and open disclosure, multi-disciplinary teamwork and clinical leadership. The second component introduces the tools of clinical process redesign. These tools can help managers make practical improvements to practices in their units. The third component targets risk management by providing an overview of the kinds of risks faced by health service managers, and by outlining different views of risk (adverse effect versus opportunity capital). The course is comprised of three case studies that engage students in addressing specific but generalisable manifestations of the three components that make up the course.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	560	Systems Metabolic Physiology	Studies vertebrate energy metabolism in the context of systems physiology. With a particular focus on mammals and especially humans, discusses macronutrient storage, mobilization and utilization at the whole organism level. Presents theory and practice of several methodologies used to measure metabolic turnover, including indirect calorimetry, mass balance, isotopic tracers and doubly labeled water. Topics include metabolic rate and fuel selection during rest, locomotion and environmental stress such as energy scarcity or oversupply.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	561	Cellular Energetics/Metabolism	Focuses on the thermodynamics and kinetics of energetic processes at the cellular level. Discusses the metabolism of macronutrients by cells, principally skeletal muscle, cardiac muscle, adipose and liver. Presents membrane transport, energy storage and mobilization, non-oxidative/oxidative pathways of ATP synthesis and energy dissipation processes. Develops and uses concepts of metabolic control, energetic efficiency, metabolic scope and signaling to explore classic and current biomedical literature. Particularly emphasizes mitochondrial metabolism, including the chemiosmotic theory, proton leak, superoxide (free radical) production, interactions between the glycolytic and oxidative pathways, and the central role mitochondria play in health, disease and mortality. Describes the theory and practice of several methodologies central to the study of energy metabolism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	562	Bioeth Issues Trans Biomed Res	Discusses ethics and policy issues related to translational biomedical sciences research. Emphasizes research involving human subjects. Topics include: genomics and biospecimen research, especially related to biobanks, including confidentiality issues, genetic testing, ownership of genetic information, community advisory boards and return of results questions; regulation of research and proposals including human research oversight by the Institutional Review Board (IRB); relationship between medical research and medical treatment; and communication with patients, within and between institutions and with the general public.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	563	The Metabolic Syndrome	Provides a comprehensive understanding of the metabolic syndrome from an environmental, genetic and molecular perspective. Also discusses the treatment of this complex disease including lifestyle changes, pharmacological interventions and surgical procedures. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	564	TBS Seminar & Data Club	Combined seminar and data club related to translational biomedical sciences.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student

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HCD	567	Curr Challenges Infectious Dis	Throughout history new pathogens such as HIV, SARS and pandemic influenza have emerged to challenge human populations. This course will introduce you to the challenges of controlling or managing infectious diseases through an appreciation of key factors such as differing modes of transmission, the impact of travel and behavior on transmission, the importance of surveillance in achieving disease prevention and control, key steps in outbreak investigation and current disease control and management strategies. Dengue fever, hepatitis A virus, HIV, influenza, measles, meningococcal meningitis, rota virus, SARS and TB will be used to learn about preparing for and containing diseases with potentially catastrophic impact to the health and economic stability. This course supports you achieving a range of capabilities that you will need if you are planning to have a career in epidemiology and infectious disease control.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	570	Process Engineering	Provides an overview of process engineering and the specifics of Lean Six Sigma as it applies quality improvement/process improvement in health care. The current health care system cannot deliver the necessary quality to ensure safety or consistent outcomes in predictable and controllable ways. It is essential to understand the impact of process engineering to improve the performance of health care delivery, and to understand the steps to performing a Lean Six Sigma process improvement project. This course builds on the quality improvement techniques introduced in earlier course work. Also enables students to obtain their Green Belt Certification in Lean Six Sigma.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	575	Leadership/Professionalism	Integrates principles of leadership theory, innovation leadership, change leadership and systems thinking through didactic and experiential learning. Identifies characteristics of successful leaders in health and health care, develops competence and confidence in creativity and innovation, and identifies ways to implement meaningful change in the dynamic health care environment. Applies theories to case studies in health and health systems to promote critical analysis, discussion and reflection on topics that provide the framework for future coursework.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	577	Infection Prevention in Hlthcr	Antimicrobial resistance is an urgent global health priority. In the near future common treatable infections may become untreatable. Currently 1 out of 20 hospitalised patients contracts a health care associated infection, of which around 50% are preventable. These infections add to the functional disability and emotional stress of the patient and in some cases, lead to disabling conditions that reduce their quality of life. In addition, they contribute to increased hospital stays and added expense to the health care system. Infection prevention and control in health care settings is now of national priority endorsed by the Australian Government, Ministries of Health, the Australian Commission of Quality and Safety in Health Care, health care facility accreditation organisations, as well as internationally by the World Health Organization.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		

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HCD	587	Infectious Disease Intel	The course will provide a grounding in epidemiological pattern recognition (epidemic, endemic, sporadic) in infectious diseases for first-outbreak responders, surveillance officers, or policy makers from medicine, allied health, public health, emergency management, law enforcement, military or others from relevant backgrounds. Case studies in risk assessment, risk mitigation, response and prevention will be studied. These will cover Ebola virus disease, MERS-CoV, avian influenza and salmonellosis; distinguishing natural from unnatural epidemics, surveillance tools, rapid intelligence and analysis methods. Data quality in resource limited settings and implications for risk assessment will be examined. Understanding of modelling and forecasting of infectious diseases based on known transmission dynamics and patterns will also be explored. Preparation of first line responders to optimise usage of infectious diseases intelligence techniques will be covered, including prioritisation of data sourcing/mining, strengthening, mapping disease transmission patterns to modes of transmission, and ultimately epidemic control measures.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	602	Health Informatics Future HC	Offers an overview of the field of health informatics, designed specifically for health science students, health services students, and current and future interdisciplinary clinicians. Combines perspectives from medicine, computer science, information science, organization science, Science and Technology Studies and human-centered computing for use of computers and information in health care and the health sciences. Covers applications and general methodology in health informatics using current topics in the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	150	Intro Health Innovation	Introduces health care innovation including diffusion of innovation, technology and current health care innovative ideas and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCI	250	Health Entrep & Value Creation	Change your mindset. Focuses on recognizing and questioning your assumptions, learning how to gather and accept feedback, and designing pivots to improve innovative and entrepreneurial outcomes. Seeks value creation opportunities in health and health care settings through opportunity recognition, value creation and business modeling. Students create an innovative change idea, demonstrate proficiency in lean startup methodologies, and "pitch or ditch" a ready-to-launch idea.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		

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HCI	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	311	Health Innovation: Found Conc	Provides foundational knowledge for leading health innovation. Organized around the Seven Pillars of Innovation: innovation process, leadership structure, outcomes, evidence-based practice, finance, policy, and technology and communication. Emphasizes principles of health innovation, in addition to characteristics, skills and knowledge required for the innovator.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102,105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	313	Phil of Science in Healthcare	Philosophy of science and its application to health and healing paradigms. Employs selected schools of thought and individual philosophers within philosophy of science to closely examine health and healing paradigms. Discusses concepts such as "life" and "death". Explores questions: What is science? What is health? Examines the way in which philosophy of science informs perceptions and definitions of health and healing in individuals and populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours
HCI	412	Transforming Health Care	Investigates the essential elements of systems thinking as a framework for innovation in addressing current and future issues in health care. Demonstrates systems thinking to present and future problems in health care and utilizes the knowledge and understanding of behavioral and learning styles to facilitate innovation in diverse systems. Stresses the importance of collaboration to the systems perspective, in addition to the value of individual worldviews.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	421	Health Care Policy	Innovation perspective on policy decision making in the health care environment. This perspective views policy-making as a fluctuating, dynamic and evolving process as seen through a lens of innovation principles. Explores the relationship between politics and policy and discusses factors influencing policy development. Identifies methods to formulate and implement policy and presents models to evaluate, analyze and modify health care policy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	425	Facilitating Innovation	Principles of facilitation that promote and enable the implementation of innovation to achieve outcomes. This approach identifies facilitation as requiring collaboration, continuous evaluation, and a focus on identifying and measuring health outcomes. Discusses characteristics of effective teams, innovation leadership behaviors that impact change, and involvement of end users. Compares and contrasts traditional project management processes with innovative facilitation techniques.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 311 with C or better OR Visiting University Student
HCI	428	Technology: Health Care Innov	Explores the role of technology in achieving the Triple Aim: improved quality, improved patient experience and decreased cost. Compares and contrasts tools of technology that hold the potential to advance innovation in health care. Examines the relationship among the users, their behaviors and technology and how this interaction advances communication, automation, organization and standardization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): minimum 45 hours
HCI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student
HCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours
HCI	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student

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HCI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Prerequisite(s): minimum 45 hours
HCI	538	Innovation and the Individual	Role of the innovator, including the essential insight, leadership styles, vision, ethical wisdom, resiliency and the development of an attitude supportive of risk taking. Examines and correlates different situational challenges with types of intelligence, behaviors, learning styles.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	540	Applying Principles of EBP	Understanding how application of evidence-based practice principles assists health care professionals to provide the best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	542	Systems Thinking	Explores systems thinking theories and methodologies in the context of the complex and often chaotic environment of health care. Examines opportunities and challenges for innovation and innovative leadership in the health care system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	543	Approaches Health Care Innov	Theory-based survey course introduces approaches to lead innovation in an organization. Many change initiatives are designed by those not completing the work, leaving workers isolated, restricted and powerless. Teaches health care leaders to value collaboration with and seeking input from those who will carry out the work. Analyzes approaches to planned change: positive deviance, appreciative inquiry and creation of a learning organization. Students construct a change plan using an appropriate approach to address a health care problem.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	544	IT for Health Care Innovation	Transforming health care through the development of sound information technology strategies is critical to the success of most health care organizations today. Examines information technology trends and their strategic application in health care. Learners create a plan for engaging IT resources and capabilities, and for executing an IT-based strategy for solving a problem in health care. Topics covered include: strategic processes, digital transformation, IT assets, design thinking, value creation, IT governance and transition change management.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	545	Public Speaking for Innovation	Builds presence as a speaker and a leader. Public speaking has evolved dramatically over the last few years. Now it is about creating a public presence; e.g., on YouTube, Facebook live, TED Talks. Public speaking for innovation is a combination of finding and building one's presence as a speaker--and translating that to an ability to explain and persuade, making the case for change. Students build their presence and gain the foundational knowledge necessary to successfully explain and persuade in various modalities of media, from speaking in person to video creations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	548	Adv Princ&Concepts Innovation	Explores and analyzes the innovation in complex systems, focusing on developing specific skills for successful innovations. Specifically addresses strategies to overcome barriers and resistance to innovation in health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538 with C or better
HCI	550	Health Care Policy & Innovation	Introduces the political, organizational, and economic dimensions of health care policy, emphasizing strategies for innovative policy and practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	552	Financing for Innovation	Provides an overview of healthcare economics; develops budgeting, planning, and management skills; and culminates in financial analysis skills necessary to facilitate management decision making or writing business plans or grant proposals.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	554	Outcomes Evaluation	Outcomes measurement, management, and evaluation for health care practitioners and/or leaders.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	561	Innovation Methods	Explores methods to generate innovation for use in a health care setting. Provides tools and practice in generating ideas, exploring utilizing appreciative inquiry, and demonstrating competencies related to the theories and processes of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCI	563	Capstone: Final Project	Applies the concepts learned in MHI core courses and presents evidence of knowledge in innovation principles, applications and strategies for implementation and evaluation. Develops an innovation project in the form of a mindmap. Provides a comprehensive methodology for completing all aspects of an innovation opportunity. Student-directed demonstrations of the application of learned leadership skills and techniques for facilitating team and individual implementation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s) with C or better: HCI 538; HCI 540; HCI 542; HCI 544; HCI 548; HCI 550; HCI 552; HCI 554; HCI 561
HCI	570	Innovation Proposal	Applies concepts learned and operationalizes skills acquired throughout the Health Care Innovation certificate. Students envision emerging paths toward an outcome by first presenting a problem they have identified within a health care organization, and creating collaborative relationships and developing strategies to initiate change in their chosen setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): HCI 538; HCI 542; HCI 554; HCI 561
HCI	571	Innovation Portfolio	Examines and applies personal leadership potential. Focuses on the effective development and facilitation of human networks to advance innovation in the health care space. Challenges students to appraise and analyze personal leadership strengths, challenges and opportunities. Explores strategies to evaluate students' current networks; develops the students' emergent professional networks. Gives focus to building relationships necessary to advance innovation in the health care space. Students develop and implement an action plan to advance their personal leadership growth and network utilization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538; HCI 543; HCI 545; NLM 562
HCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	210	Ethics HealthCare Professional	Health care ethics emphasizing analysis and ethical decision making at clinical and health policy levels for health care professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	
HCR	220	Intro Health Professions U.S.	Introduces the historical, social, political, economic and interprofessional contexts in which health care professions and the United States health care system evolved.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	H	
HCR	221	Fndntl Cncpts Hlth Care Cord	Focuses on the foundational elements of health care coordination. Discusses the health care coordination process including assessment, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	230	Culture and Health	Cultures of diverse groups and health/illness. Cross-cultural communication, awareness of own cultural influences, indigenous and alternative healing practices.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	C & G	
HCR	231	Fund of Comm Health	Provides a framework for understanding community health concepts.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	240	Human Pathophysiology	Chemical, biologic, biochemical, and psychological processes used in study of structural and functional alterations in health with selected therapeutics.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better; CHM 101 or higher with C or better; MIC 205 with C or better; MIC 206 with C or better OR Visiting University Student
HCR	241	Fndtions of Integratv Health	Discusses the similarities and differences of the biomedical and integrative health care systems providing an overview of integrative health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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HCR	245	Sleep, Sleep Disorders&Behavio	Focuses on the nature, organization, function and biopsychosocial determinants of sleep and sleep disorders across the lifespan, emphasizing the social and behavioral processes that influence them.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): Credit is allowed for only HCR 245 or HCR 294 (Sleep, Sleep Disorders, and Behavior) or HCR 294 (The Science of Sleep Behavior)
HCR	259	Compliance and Health Care Ind	Introduces health care compliance as an industry and a profession. Explores the complex federal and state laws that regulate the delivery and reimbursement practices of the U.S. health care system. Also explores federally legislated mandates for formal compliance programs, program elements, and the organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Students may not enroll in HCR 259 if credit with C or better earned in both HCR 260 and HCR 261 OR Visiting University Student
HCR	260	Health Care Industry	Overview of the complex system of regulations that frame the oversight and monitoring of the U.S. health care industry. Provides a foundational understanding of federal and state regulations as well as private health care regulatory agencies' requirements as they relate to physicians and other health care professionals, hospitals and other health care institutions, and insurance companies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	261	Health Care Compliance	Introduces health care compliance as an industry and a profession. Explores federally legislated mandates for formal compliance programs, program elements and organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	262	Health Care Licensure	Introduces interprofessional practice, professional licensure, education and training, certification and scope of practice within the health care industry. Explores compliance standards and accreditation as they relate to the authority and scope of licensure boards, which are designed to safeguard the public health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	263	Intro to Medical Billing	Introduces the complex process of medical coding and billing practices and related federal regulations and programs. Provides learners with a fundamental understanding of medical coding and billing processes including terminology, stakeholders and regulatory impact.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 260 with C or better OR Visiting University Student
HCR	264	Regulatory Essentials I	Offers a comprehensive overview of the regulations that impact the health care delivery industry. These regulations include: protections against fraud and abuse, patient rights and privacy, protected health information (PHI) and electronic protected health information (ePHI), and occupational health and safety.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 261 with C or better OR Visiting University Student
HCR	265	Regulatory Essentials II	Comprehensive study of the creation, management and evaluation of all aspects of a formal health care compliance program. Learners investigate and discuss roles of the compliance officer and compliance committee, risk analysis, recommendations for and implementation of corrective action.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 264 OR Visiting University Student
HCR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	301	Rsrch Mthds for Hlth Care Prof	Explores basic concepts of qualitative and quantitative research design utilizing methods of assessment, planning, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): PSY 230, SOC 390, STP 226, or SWU 321 with C or better if completed; TWC 347 or 362 with C or better if completed OR Visiting University Student
HCR	302	Social Determinants of Health	Addresses issues of social determinants and health disparities at the local, national and global levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 301 with C or better if completed; TWC 347 or 362 with C or better if completed OR Business (Health Care) BA major or Health Care Coordination BIS emphasis or Health Care Coordination minor OR Visiting University Student
HCR	303	Assess Nds Assts Cap Hlth Ed	Assesses needs, assets and capacity for health education at the individual, family and community levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 with C or better; HCR 230 with C or better; Pre- or corequisite(s): CDE 232 with C or better if completed OR Visiting University Student

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HCR	310	Fundamentals Human Trafficking	Covers the complex problem of human trafficking including types of human trafficking, terminology, victim identification, policy implications, and the role of health providers and governmental and community agencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only HCR 310 or HCR 394 (Fundamentals of Human Trafficking) OR Visiting University Student
HCR	321	Advcd Cncpts Hlth Care Cord	Presents advanced concepts for health care coordination, including: interprofessional teamwork, medication reconciliation, patient/family engagement and other tools that facilitate best practices for health care coordination. Students also learn models for health care coordination, and concepts and practices to facilitate transitions of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 with C or better OR Visiting University Student
HCR	331	Communication Within Commun	Focuses on the integral nature of communication in health care, including the role communication plays in shaping individual, social and cultural beliefs and expectations about health. Provides skills for effective communication when working with individuals, groups and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	335	Prog Develop Mngmt Comm Hlth	Incorporates models, research and resource management to plan, strategize and evaluate community programs that promote healthy lifestyle choices in various, as well as specific, geographic communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): General Studies Literacy course; minimum 45 hours OR Visiting University Student
HCR	336	Environm Community Health	Examines the interdependent relationship between the health of the environment and the health of communities. Includes a focus on specific communities, as well as agencies and laws involved in the health of communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better OR Visiting University Student
HCR	341	Bio, Manipulv,Bdy Bsd Therap	Analyzes the principles and practices of select biological and body-based therapies and modalities and their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student
HCR	342	Mnd Bdy Enrgy Theraps Modalit	Analyzes the principles and practices of select mind-body and energy therapies and modalities and explains and distinguishes their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student
HCR	343	Hist Cltrl Fnd Integrtrv Hlt Cr	Distinguishes commonalities and differences between early healing traditions and investigates the utility for today's health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	350	Intro Clinical Research	Provides an introduction to the biomedical and clinical research field and associated operational processes. Examines clinical trial development phases, regulatory protections for human subjects, clinical research team specializations, research organizations, good clinical practice, institutional review board functions, and research funding mechanisms. Explores specialized career positions for nursing and allied health professionals.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	360	Data Security and Privacy	Focuses on administrative practices that ensure the security of computerized systems and the protection of health information. Topics include communication and reporting, as well as specific regulations and authorities such as the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Breach rules, and HIPAA Security and Meaningful Use Attestation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	361	Risk Management	Risk management practices as they relate to the oversight of operations and processes within the health care industry. Utilizes various tools to predict, analyze and mitigate practices that may lead to industry noncompliance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	362	Monitoring and Auditing	Ongoing health care compliance evaluation process critical to a successful compliance program. Provides the knowledge to utilize monitoring and auditing systems to ensure health care operations conform to established standards or comply with federal, state or local rules and regulations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	400	Evd-Bsd Prac Hlthcare Prof	Methods of clinical and scientific inquiry. Focuses on the application of an evidence-based practice approach.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 301; TWC 347 or 362, OR Applied Science (Health Innovation) BAS major OR Visiting University Student
HCR	402	Advocy for Hlth and Hlth Ed	Discusses and analyzes existing or proposed policies on health and strategies for influencing the policy-making process.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 303 with C or better

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HCR	406	Hlth Litrcy for Hlth Cr Prof	Prepares students to use best practices for health communication that promote consumer health literacy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 or MED 320 (HCD 320); HCR 230 or HSC 210 (HCD 210) OR Applied Science (Health Innovation) BAS major; Pre- or coreq(s): HCR 301 w/C or better if completed or Applied Science (Health Innov) BAS major OR Visiting University Student
HCR	420	Prof Role Dvel: Hlth Care Cord	Professional role development including role transition, leadership and project management for health care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 (or HCR 320) with C or better; HCR 321 with C or better OR Visiting University Student
HCR	422	Plcy Fincl Princpl Hlth Cr Cor	In-depth look at the history of health care policy in the United States from World War II to the present focusing on how Medicare, Medicaid and the Affordable Care Act impact health care system and patient reimbursement. Also discusses elements of insurance, managed care and universal care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 (or HCR 320) with C or better OR Visiting University Student
HCR	426	Hlth Care Coord Capstone	Applies higher-level critical thinking, teamwork, effective communication, informatics and design process required to develop a "real-world" health care coordination solution that will be a catalyst for change by improving safe patient-centered transitions, lowering readmission rates, increasing patient safety, and/or decreasing the cost of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 321 with C or better; HCR 400 with C or better; HCR 422 with C or better
HCR	430	Fndn to Hlth Care Systems	Explores the impact of the current U.S. health care system on the health of individuals, families and communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 (HCR 330) or 259 or 260 with C or better OR Visiting University Student
HCR	435	Leaders in Community Health	Prepares students to assume a leadership role in health promotion in communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better; Pre- or corequisite(s): HCR 335 with C or better if completed OR Visiting University Student
HCR	439	Community Health Capstone	Provides the opportunity to explore the health status of communities and to develop strategies for community health improvement.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s) with C or better: HCR 231, 331, 335, 336. Pre- or corequisite(s): HCR 430, 435 with C or better if completed
HCR	440	Intprof Appch Intgrtv Hth Cr	Prepares learners to develop and lead interprofessional teams with a focus on roles and responsibilities of integrative health care providers and practitioners.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	441	Lgl Eth Iss Imp Intgrv Hlthcar	Examines current laws, government regulations, ethical principles and case studies to understand issues and consumers' use of integrative modalities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 with C or better OR Visiting University Student
HCR	449	Integratv Hlth care Capstone	Provides the opportunity to design a healing environment project that reflects the philosophy, mission and values of a health care organization in relation to underlying philosophy and beliefs of integrative health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 and 341 and 342 and 343 and 400 and 440 all with C or better; Pre- or corequisite(s): HCR 441; TWC 443
HCR	460	Investigations and Disclosures	Types of disclosures required by and investigations conducted by regulatory and accrediting agencies overseeing health care entities. Introduces oversight activities, enforcement and potential penalties incurred by health care entities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 362 OR Visiting University Student
HCR	461	Corrective Action	Use of corrective and preventive actions (CAPA) in meeting the challenges of a compliant health care services operation. Covers design and implementation of CAPA to respond to deviations or errors in the health care environment. Identifies problems, implements corrective actions, evaluates consequences and employs preventive measures.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 460 OR Visiting University Student
HCR	462	Specialty Topics	Provides a comprehensive review of case studies and recent enforcement action involving litigation and enforcement of health care law, including review of landmark and contemporary cases brought by the United States Office of Inspector General, the Office of Civil Rights and state attorney generals. Applies knowledge and skills acquired from earlier coursework to real-world situations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): HCR 260; HCR 261
HCR	463	Capstone Project	Culminating course integrating all components of health care compliance core courses and demonstrating knowledge and competency in the field of health care compliance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): HCR 460; HCR 461
HCR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		

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HCR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student
HCR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7		
HCR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		
HCR	543	Food Safety and Protection	Covers food safety from the point of view of retail food safety inspectors. Addresses careers in food safety and protection, food and waterborne pathogens, food safety laws and regulations, hazard analysis, food safety inspection steps, investigations, report writing and response to food emergencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	544	AssessFoodSafetyPolicyProcedur	Provides overview for the knowledge, skills and abilities required for assessing food safety and developing food safety policies, procedures and training.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 543
HCR	545	Biospec Repos Admin	Examines the biospecimen repository industry from a business perspective. Students learn the scientific basis, collaborative nature, required personnel, timelines and processes that underlie the business environment of biospecimen repositories and their administration.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	546	Mgmt of Biospec Repos	Examines the biospecimen repository industry from an operational perspective. Students learn the process aspects of repository start-up through collection, maintenance and disbursement of specimens. Key elements include personnel training, planning, quality control, risk management, project management and safety implementation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	547	Biospec Tech Mgmt	Examines the biospecimen repository industry from a technology and resource perspective. Students learn the planning and selection of technology and resources for the support of the start-up and long-term maintenance of a biospecimen repository. Key elements include technology and resources assessment and choice, cost-benefit analysis, initial budget, long-term and short-term planning.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	548	Biospec Repos Regs and Ethics	Examines the biospecimen repository industry from an ethical and regulatory perspective. Students learn the ethical and consenting challenges of biospecimen collection, storage and disbursement. Examines relevant historical case histories to inform current policies and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	549	Science Innov & Biospec Repos	Explores the driving effects of scientific innovation on biospecimen administration management. Students learn how scientific advancements increase the demand of high-quality biospecimens and high-quality data, referred to as next-generation biorepository research. Examines tracking pre-analytical variables, adequate preservation and storage methods, controlled biospecimen and data custodianship, governance with ethical and scientific oversight of operations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	550	QA&SafetyinFoodDietSupplement	Covers current applicable regulations and the regulatory framework that ensure the safety and quality of dietary supplements for the consumer. Reviews FDA regulations including Good Manufacturing Practices (GMP), quality in the development and manufacture of dietary supplements, labeling requirements, advertising, product quality, premarket notification, marketing, and postmarketing of dietary supplements.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	551	Clinical Research Monitoring	Introduces clinical trial monitoring processes and procedures.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed

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HCR	552	Medical Device Regulation	Comprehensive examination of the regulatory framework for the design, development, approval/clearance and marketing of medical devices in the United States throughout the product lifecycle.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	553	Quality and Clinical Research	Explores basic quality assurance techniques, standards and applications in the clinical research arena.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	555	Pharma Risk Management	Comprehensive examination of regulatory, legal, and scientific factors in pharmacovigilance and risk management and risk mitigation.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	557	ClinicalResearchDesignMethods	Explores basic clinical trial biostatistical methods in concert with clinical trial design and methods.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	558	Regulatory Writing	Focuses on teaching and applying writing and presentation skills critical for regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	560	Regulatory Science Capstone	Culmination course integrating all components of regulatory core courses demonstrating knowledge and competency in the field of regulatory science.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Pre-requisite: Regulatory Science and Health Safety Master of Science student
HCR	561	Conduct of Clinical Research	Introduces concepts and policies for the responsible conduct of research (RCOR), institutional review boards, and dissemination of findings.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	562	Data Management & Technology	Orientation to database design and management, technology assessment methods, auditing procedures for continuous quality improvement (CQI), and cost-effectiveness analysis (CEA).	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	563	Regulatory Affairs	Principles of clinical research management and regulatory affairs. Overview of national/international regulatory systems and agencies, and trends in conducting clinical research.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	564	GlobalRegulatAffairsLeadership	Links students to international networks; exposes students to regulators of therapeutic products in different jurisdictions and provides networking within a global industry to enhance the confidence of students to influence global regulatory policy development. Enables students to network with senior executives and experienced regulatory affairs professionals in the global therapeutics industry. Provides skills, knowledge and global connections to discuss and develop strategies to address principles and issues facing global pharmaceutical regulatory affairs and its role in the maintenance of public health. Students develop a deep understanding of therapeutic product regulation across the world and acquire the skills to lead change management in international regulatory issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HCR 564 or HCR 598 (Global Regulatory Affairs Leadership)
HCR	565	Clinical Research Operations	Development, implementation, and operations of FDA clinical research trials, including budgeting, contract negotiations, site evaluation, marketing, project management, and reporting.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	566	Research Management Capstone	Culmination course integrating CRM degree coursework by demonstrating knowledge and competency in clinical research management planning, operations, and implementation processes.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 561 with C or better; HCR 563 with C or better; HCR 565 with C or better; HCR 574 with C or better; 15 additional hours of HCR graduate-level courses with C or better
HCR	567	Research Management	Management and leadership principles integrated with contemporary research topics will be introduced.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	568	Health Care Project Management	Designed for graduate students and managers who desire to improve their effectiveness as project managers in the health care context.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	570	International Health Systems	Introduces systems of international healthcare delivery, professions that provide healthcare delivery, and international research principles and practices.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	571	Cultural Diversity&HlthcareDel	In-depth exploration of culturally diverse aspects of population health, including culture-bound syndromes, folk practices, assessment approaches, and interactions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	572	International Health Capstone	Culminating course integrating all International Health requirements that produce culturally responsive implementation and evaluation plan for the student's clinical practice. A portion of the course will be held in Mexico.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	574	Science&Research Review Boards	The role and responsibilities of Scientific and Research Review Boards in the conduct of human research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	575	Contracting and Budgeting	Examines best practices in contracting, negotiating and budgeting for industry-sponsored clinical trials.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	576	Drug Discovery,Development&Reg	Covers the drug discovery and development process from bench to market, including bench and animal research, FDA approval for human studies (Investigational New Drug submission), Phase I-IV clinical studies, New Drug Application, marketing and post approval surveillance. Reviews applicable regulations, laws, guidance documents, good clinical practices related to drug development in the U.S. and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	577	Global Regulatory Affairs	Covers regulatory authorities, processes, procedures, International Conference on Harmonisation (ICH) guidelines and documentation for the marketing approval of new medical products in the U.S., European Union (EU), Asia and emerging countries. Reviews global regulatory submissions, focusing on the organization and requirements of the Common Technical Document (CTD) global sections. Also reviews global trends, ethical considerations, country-specific considerations and cultural considerations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	578	Legal Aspects of Clinical Rsrc	Reviews the legal implications related to conducting clinical research. Covers current topics and legal issues, standards, duty of care, informed consent, research contracts, malpractice, negligence, informed consent, liability, clinical trials and criminal law, disclosures of clinical information, and liability. Students review and discuss recent research cases and litigation on a wide range of legal issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	579	Trans Rsrch Drug Discovery&Dev	Reviews the translation of new drug research from bench to FDA approval. Provides an overview and history of the translational process in the discovery of new drugs and biologics used in the treatment of medical conditions. Topics include: addressing the gaps in drug development, new approaches to speed the process from bench to FDA approval, and the provision evidence-based medicine for sustainable pharmaceutical products utilized in medical treatment.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
HCS	501	FoundationHealthCareSimulation	Explores theoretical foundations of health care simulation education and delivery.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
HCS	502	HC Sim Ed Assess Debrief	Explores assessment and debriefing practices in health care simulation education. Provides opportunity to analyze and plan debriefing strategies that support reflective, student-centered learning.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501
HCS	503	Operations Mgmt Health Care	Engages students in the business practices and principles essential to health care simulation program operations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501; NUR 671
HCS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRO	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	101	ASU & Herbergr Inst Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university and the Herberger Institute for Design and the Arts. Explains and defines success with integrity, ASU resources and involvement, the importance of arts to society and the community, personality and learning style, and success in college and beyond.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts majors
HDA	111	Art and Society	Introduces the interplay between art and society, particularly how one influences the other.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		
HDA	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Credit is allowed for only FSH 125 or HDA 125
HDA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	210	Creativity & Innov Design Arts	Designed to get students thinking in a focused manner about creative practice and process. Many young designers and artists arrive at higher education in their discipline having taught themselves or having received a piecemeal education in the directed application of ideas. Aids students in knowing why and how they are creative. Covers types of creativity, how inspiration happens, how to take a project from idea to reality, how to work creatively in teams and how to fuse creative ideas with an understanding of environment to help realize work in socially useful ways.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Credit is allowed for only HDA 210 or 294 (Creativity & Innovation for Design and the Arts)
HDA	225	Fashion Design	Expands upon fashion design fundamentals learned earlier to encompass additional aspects of the fashion industry, which includes fashion as business, and as a sociological and cultural phenomenon.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 125 with C or better
HDA	252	Fdn Arts&Design Entrepreneurs	Develops entrepreneurial knowledge and skills supporting the self-actualization, self-efficacy and market acumen of artists and designers.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
HDA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	296	Creative Futures: Studio	Develops skills in creating fully realized design ideas and creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with the sequel course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Technological Leadership BS major OR Herberger Institute student OR Visiting University Student

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HDA	310	Socially Engaged Practice	Students gain a wide literacy in the community arts field through reading, discussion and technical practice. Examines theories and techniques of community-based project development. Pairs artists with communities to create art rooted in the needs, values, desires, triumphs and challenges of that community. Helps prepare the artist of the 21st century with skills to apply artistic practices in diverse contexts.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 42 hours; Credit is allowed for only HDA 310 or 494 (Public Practice: Engagement & Community)
HDA	311	Work:Cultural/Creative Indstry	Introduces fundamental questions in the study of work and careers in the cultural and creative industries, including an overview of historical changes in the relationship between the individual and his or her work environment; comparisons between different types of work arrangements (part-time, freelance, internships); and practical implications for contemporary workers.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): minimum 45 hours
HDA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	397	Capstone Development	Prepares students for a successful capstone project. Students develop a formal proposal and identify a mentor for the project.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): The Arts BA major; minimum 56 hours
HDA	410	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 310; Credit is allowed for only HDA 410 or HDA 510
HDA	420	Design & the Arts Business Adm	Design and the arts business seminar course that covers core business principles for design or arts businesses such as human resources, legal issues, accounting and finance. Asks with each of these areas how these disciplines uniquely work within design or arts settings. Investigates global business topics and discusses why ethics is integral to every design or arts business enterprise. Provides a broad understanding of design or arts business activities and practices, allowing more effective participation in business discussions in the future.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 45 hours; Credit is allowed for only HDA 420 or 494 (Design & the Arts Bus Admin)
HDA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		
HDA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	496	Creative Futures: Adv. Studio	Develops advanced skills in creating fully realized design ideas and leading creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with a prerequisite course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3-6		Prerequisite(s): Technological Leadership BS major or Herberger Institute student; HDA 296 completed two times with C or better OR HDA 296 with C or better; AME 240 with C or better
HDA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-7	L	
HDA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-3		
HDA	510	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HDA 410 or HDA 510
HDA	511	Leadership:Creative Industries	The creative industries construct and principles of leadership as applied within and affecting it through curated interaction with leaders in the field.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	512	Strategy:Creative Industries	Through a combination of short lectures and collaborative exercises, students learn to identify challenges and opportunities for entrepreneurial interventions in the creative industries and arts and culture sectors.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	2		Prerequisite(s): Creative Enterprise and Cultural Leadership MA student

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HDA	513	Creativity and Design Thinking	Activates abilities as a creative thinker and problem solver for the cultural and creative industries through short lectures and collaborative workshop activities.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	521	Counting Arts & Culture	Builds understanding of economic concepts as applied to the arts and culture sector, with specific attention to how art and culture enterprises work as businesses, how such enterprises function in our wider economic system, which are growing and which disappearing (and why), all toward the goal of building the student's capacity to lead arts and culture enterprise in a complex economic environment.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	522	Media Literacy, Distribution	Addresses the impact that digital distribution has had on traditional media business models and the way media and our culture are changing because of it. Also looks at the way in which industries are adapting to this change in the media landscape. Three distinct sections: content literacy, production and distribution metrics, economic and cultural implications.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HEB	101	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
HEB	102	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 101 with C or better OR Visiting University Student

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HEB	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
HEB	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
HEB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	201	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 102 with C or better OR Visiting University Student
HEB	202	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 201 with C or better
HEB	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
HEB	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
HEB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	313	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): HEB 202 with C or better OR Visiting University Student
HEB	314	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in Modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: HEB 202
HEB	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): minimum 45 hours. Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 or HEB 394 (Literary Readings of the Bible)
HEB	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
HEB	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student

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HEB	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
HEB	375	Contemporary Culture of Israel	Intense study of aspects of historical, social, political, and cultural modern life in Israel. Beginning of Zionism to present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
HEB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
HEB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
HEB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
HED	510	Intro to Higher Education	Overview of American higher education, including philosophical, political, and social aspects.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	527	Seminar: Student Affairs Admin	Organizational models, administrative competencies and skills, and emerging challenges of student affairs administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	573	Applied Inquiry in Higher Ed	Provides an overview of research, evaluation and assessment practices in higher education and strategies for utilizing these practices as professionals in higher education. Focuses on learning about and demystifying the process of scientific inquiry, with the intent of translating that knowledge to regular practice in a higher education professional career. It is not a highly technical methods course--no advanced knowledge of statistics or qualitative techniques is assumed--but instead gives practitioners a foundation in educational research design as well as the tools to be literate, thoughtful, critical and frequent consumers of research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MED Higher and PostSecondary Education major. Credit is allowed for only HED 573 or HED 591 (Applied Inquiry)
HED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HED	598	Special Topics	Typical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	603	Foundation of Data Analytics	How decisions are made in higher education and how data and analytics can support university leaders.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	604	Analytics Process & Technology	Process and technology used to facilitate data-informed decision making in higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	605	Data Management & Preparation	Data preparation and management for data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	606	Advanced Analytic Methods	Advanced analytic methods, including data mining, in support of data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	607	Visualization and Presentation	Principles of effective presentation and visualization of data for exploratory, predictive and persuasive purposes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	608	Trends Advncd Analytic Methods	Emerging advanced analytic method in use within higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	620	Diversity in Higher Education	Overview of the demographic profile of college students, faculty, and staff. Addresses issues of access, retention, and development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	634	The American Community College	Philosophy, history, curriculum, faculty, students, organization, financing, research, policy and current issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	644	Higher Educ Finance/Budgeting	Financial planning and budgeting in higher education institutions. Issues related to financing public and private colleges and universities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	649	Law & Policy in Higher Ed	Analyzes legal issues related to higher education; examines key court decisions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	679	The American College Student	Overview of American college student from demographic, background characteristics, and values/attitudes/perspectives. Includes access, persistence, and degree completion.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	688	Organizational Theory	Major views of organizations and their influence on role definition and participant behaviors in educational organization.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	689	Leadership in Higher Education	Theory and practice of leadership and administration in higher education institutions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HEP	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
HEP	102	Foundations of HEHP	Designed for students who anticipate working as a health educator in clinical, governmental, worksite/corporate, research-based, or other professional settings. Students gain an understanding of the selected historical, cultural, philosophical, professional and ethical issues in the practice of health education.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		

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HEP	241	Hlth Ed Injury Prevntn & Prep	Unintentional injuries affect people throughout the lifespan. Examining factors that influence injury helps to determine effective education and prevention efforts. Explores strategies for preventing unintentional injuries for adults and children. Examines topics in injury prevention for the development of health promotion resources and practices in the following settings: home, sports, recreational and transportation. Also includes emergency preparedness education focused on helping people prevent and mitigate the effects of emergency/unforeseen incidents at the individual, family and community levels. Specifically, explores the CDC Crisis & Emergency Risk Communication (CERC) program as a tool for developing effective communication strategies regarding emergency situations.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	251	Preventing HIV&Substance Abuse	Provides an introductory examination of Human Immunodeficiency Virus (HIV), substance abuse and addiction. Explores health education and promotion approaches to preventing both HIV and substance abuse and examines the biological, historical and societal implications of these diseases. Prepares learners to deliver HIV and substance abuse prevention education.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 351 or HEP 251 (or EXW 312) OR Visiting University Student
HEP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	303	Human Sexuality for Health Ed	Provides preprofessional primary/secondary teachers and health education specialists with knowledge of the physiological, psychological and social aspects of human sexuality for health education. Provides content knowledge and curriculum development strategies to support educators in creating human sexuality curriculum for school and community health settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	348	Methods of Health Education	Intended for the pre-professional health educator to learn how to develop sound, effective, and appropriate presentation methods to create learning experiences that facilitate voluntary changes leading to health-enhancing behaviors. Focuses on the knowledge and skills necessary to understand learning and the diverse learner; structure the learning environment; develop appropriate behavioral learning objectives; select appropriate instructional methods; and develop quality lesson, presentation, and unit plans with sound strategies for evaluating learning.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	350	Substance Abuse&Addict Behav	In depth study of the pharmacology and effects of addictive substances and the psychosocial risk factors and consequences of substance abuse.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; PSY 101 with C or better OR Visiting University Student
HEP	361	Soc Media & Market for Health	Explores social marketing practices, creates health education messages and content, and develops a social media campaign for a specific health or wellness topic. Defines and applies health literacy to the development of health education messaging for diverse audiences. Explores digital storytelling as a tool to relay health information through imagery. In order to develop competencies as an informed consumer of health-related products and services, learners analyze fads and fallacies promoted through marketing and media, evaluating these in comparison with scientific evidence and recommendations.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361) OR Visiting University Student
HEP	371	Conflict & Violence Prevention	Explores conflict mediation and violence prevention interventions. Prepares students to address conflict, deal effectively with difficult people, and incorporate effective conflict management and mediation skills in various personal and professional settings. Examines and applies principles of the public health approach of violence prevention programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)
HEP	380	Body Image and Wellness	Explores body image in American culture from physical, psychological, historical, and societal perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101 with C or better; minimum 30 hours OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
HEP	384	Preinternship for HEHP	Professional development course designed to help students prepare for their respective senior-year internships and post-graduate career fields, while developing and enhancing professional practice skills. Students engage in individual assessment and group learning with student peers through activities such as required readings and self assessments, career-related exploration assignments and networking. Utilizes on-campus resources, such as Career Services and the Writing Center, for support and assistance with coursework and assignments. Focuses on developing long-term professional and interpersonal competencies career preparation, professional self marketing, and workplace professionalism.	N	LEC	N	YGB	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions major; minimum 75 hours
HEP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	410	Obesity Persp and Prescrip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. Explores topics: the obesity epidemic; health consequences of obesity; fitness and fatness; etiology of weight gain; health implications of weight loss; psychological, cultural, social and political considerations of obesity; and a review of the application of prevention and treatment of obesity. Examines a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 202 with C or better; PSY 101 with C or better; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410) OR Visiting University Student
HEP	443	Emotional Hlth & Intrprsnl Rel	Explores factors associated with the development of emotional health and well being. Emphasizes pre-professional primary/secondary teachers and health education specialists teaching and promoting emotional health within a school or community setting. Encourages pre-professional primary/secondary teachers and health education specialists to deepen their commitment to effective curriculum principles related to emotional health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	444	Epidemiology	Introduces epidemiological concepts and prepares the student to read, comprehend, and report epidemiological research.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): any CS statistics course with C or better OR Visiting University Student
HEP	448	Foundations of School HED	Illustrates health education in K-12 and post-secondary educational settings. Explores various resources for health education specialists, including the CDC's Division of Adolescent and School Health, the School Health Index, the Health Education Curriculum Analysis Tool, and the Coordinated School Health Approach.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HEP	452	Hlth Advcy in HED	Links advocacy for individual patients/consumers (patient advocacy) with advocacy for groups of patients/consumers (policy advocacy). Identifies and explores specific skills needed by community health educators, pre-professional primary/secondary health teachers and health education specialists for developing a practice of advocacy in their work. Methods, techniques and resources used in advocating in health promotion.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	454	Health Promotion Plan and Impl	Applies theory-based concepts and methods of health promotion (HP). Covers selected topics in HP across a variety of domains of health. Program planning concepts include the use of planning frameworks, needs assessments, and the use of theory in health promotion program planning. Also covers practical issues related to health promotion program implementation such as resource management and program marketing.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 or HEP 102 (EXW 102) with C or better; EXW 340 or 342 with C or better; Credit is allowed for only EXW 554 or HEP 454 (EXW 454) OR Visiting University Student
HEP	456	Health Promotion Program Eval	Covers program evaluation concepts including how to plan an evaluation, how to analyze and interpret data, and how to report evaluation results. Students learn a basic framework for conducting a program evaluation, various research/evaluation designs, and data analysis and statistics. Topics are covered in enough detail so that the student may understand how inferences are made regarding program evaluation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre- or corequisite(s): HEP 454 (EXW 454) OR Visiting University Student

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HEP	466	Health Prom Mgmt and Admin	Uses team and individual processes to build knowledge and skills for managing and administering health education/promotion programs. Emphasizes management perspectives, professional skill development and demonstrating leadership; performing team collaboration roles; managing human and financial program resources; and developing collaborative research. Aligned with specific competencies and objectives required for Certified Health Education Specialists (CHES) offered by the National Commission for Health Education Credentialing (NCHEC).	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	476	Community Health	Applies major concepts of community health. Focuses on populations, settings and social issues related to community health. Basics of epidemiology, disease prevention, and health promotion. Explores community health concepts related to organizing and building community coalitions and health programs. Also explores school health, maternal, infant and child health, minority health, and environmental influences on community health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 or HEP 102 (EXW 102) with C or better; EXW 340 or 342 with C or better; Pre- or corequisite(s): HEP 456 (EXW 456) with C or better if completed OR Visiting University Student
HEP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HEP	486	Applied Projects in HEHP	Provides an opportunity for a structured, applied project in the field of study or major. Requires students to develop and submit an original proposal for their applied project. Students must obtain instructor approval for the project well in advance of regular registration. During the course, students independently develop and/or implement the approved project with faculty supervision.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): HEP 384 OR Visiting University Student
HEP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HEP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HEP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HHE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HHE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
HIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HON	171	The Human Event	Landmarks in the social and intellectual development of the human race, with emphasis on critical thinking and argumentative writing. Enrollment restricted to Barrett students.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; maximum 75 hours
HON	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student
HON	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; maximum 60 hours
HON	272	The Human Event	Covers the Renaissance through the modern period.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	(L or HU) & H	Prerequisite(s): HON 171 with C or better
HON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
HON	370	History of Ideas	Advanced and intensive survey of key social and intellectual currents in the development of humanity as reflected in both philosophical and creative works with an emphasis on critical thinking and discussion, as well as argumentative writing.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; Credit is allowed for only HON 171 or HON 272 or HON 370
HON	378	Culture/Soc England, Ire, Scot	Chronologically explores texts, events, and sites for historical and cultural impact on development of England, Ireland, Scotland, and their countries' relationships with each other.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & H & G	Prerequisite(s): Barrett Honors student

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HON	379	Romantics, Victorians, Moderns	Examines the development and impact of various literatures, arts, and ideas in England, Ireland, and Scotland from the Romantic through the Modern period.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & G	Prerequisite(s): Barrett Honors student
HON	380	Aesthetics and Society	Advanced, interdisciplinary seminar explores the unique roles of aesthetics in society through philosophy, cultural studies, art, music, literature, film, and/or other media forms, with themes such as the politics of beauty, art and emotion, or creative production and reception.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	HU	Prerequisite(s): Barrett Honors student; HON 171; HON 272 (or HON 273 or 274) or HON 370 or HON 394 (History of Ideas); Credit is allowed for only HON 380 or HON 394 (Aesthetics and Society)
HON	381	Science and Social Worlds	Advanced multidisciplinary seminar examining the historical, cultural and political roles of science in society, including the politics of scientific knowledge production, the ethics of new technologies, and philosophical approaches to the study of health and medicine.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 171; HON 272 (or HON 370 or 394: History of Ideas); Credit is allowed for only HON 381 or 394: Science and the Self
HON	386	Writing about Self and Place	Cultural curiosity and literary expression align in intellectually provocative ways that deepen our understanding of the interplay between self and place. Examines the ways in which conceptions of individual and national identity and cultural environments inform each other. Students read and analyze modern travel writing to learn literary strategies that they then employ when reflecting upon and documenting their experiences as individuals studying the culture of a place. Learning activities include engaging with a variety of creative nonfiction writing and creating personal narratives.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 370 OR both HON 171 and 172; Credit is allowed for only HON 386 or HON 394 (Identify and Place) or HON 394 (Writing about Self and Place)
HON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Pre-requisite: Barrett Honors student; Minimum 30 hours
HON	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 with C or better OR non-Business student with minimum ASU 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch)
HON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	0-12		Prerequisite(s): Barrett Honors student
HON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6	L	Pre-requisite: Barrett Honors student; Minimum 75 hours
HON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; minimum 45 hours
HON	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-7	L	Prerequisite(s): Barrett Honors student
HON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student
HPS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	311	Origins, Evolution, Creation	History of opposition to evolutionary thinking with special reference to American creationism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Credit is only allowed for BIO 344 or HPS 311
HPS	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
HPS	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
HPS	322	History of Science	Development and application of scientific thinking from ancient times through the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	
HPS	323	History of Science	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student

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HPS	330	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
HPS	331	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
HPS	332	The Darwinian Revolution	Origin, nature, and subsequent history of the ideas of Charles Darwin.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
HPS	336	Exploration and Science	500-year survey of exploration as a historical process and cultural activity of Western civilization, with emphasis on its links with modern science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB & H	
HPS	340	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student
HPS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
HPS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	410	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 416 or HPS 410 OR Visiting University Student
HPS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
HPS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
HPS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student
HPS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Pre-requisite: Junior or senior standing
HPS	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
HPS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
HPS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
HPS	516	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518, HPS or HST 516
HPS	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HPS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HPS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
HPS	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 620 or BIO 620
HPS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HRC	200	Intro:Social/Cultural Analysis	Introduces social and cultural analysis. Focuses on key terms and analytical categories for interdisciplinary work in social and cultural analysis and related fields such as American studies, ethnic studies, women and gender studies and Latin American studies. Examines a range of forms of oppression and privilege from a social justice perspective.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
HRC	310	Social & Cultural Stds/Theory	Covers how scholars in social and cultural studies think, argue, research and write. Traces the changing definition of fields such as American studies, ethnic studies, and women and gender studies. Studies these fields in relationship to 20th-century social movements and related theoretical categories including Marxism, cultural studies and class; feminism, gender and sexuality; and post-Colonialism, race and ethnicity. Covers basic archival and ethnographic research techniques underlying interdisciplinary research methods in these fields.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 36 hours OR Visiting University Student
HRC	480	Capstone: Practices/Approaches	Examines theoretical, methodological and epistemological issues in American studies, women and gender studies, and ethnic studies. Studies a wide variety of interdisciplinary theories, methodologies and epistemologies from an intersectional analysis of race, class, gender and sexuality in national and transnational contexts. Places special emphasis on historical definitions and debates on the relationship among theory, activism and praxis.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): AMS 201 or ETH 100 or HRC 200 or WST 100
HRC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
HRC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	
HRC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
HSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	210	Cultural Aspects Health	Examines how culture influences health, health care practices, barriers to health care, interactions with health care professionals, and health disparities in the U.S. Addresses the need for cultural competence among health practitioners.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	C	
HSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	300	Complementary Health Care	Evaluates the major components of complementary and alternative health care models and evidenced-based recommendations related to complementary health care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
HSC	310	Health Communication	Focuses on communicating topics related to health through an examination of theoretical frameworks, communication techniques, and different technologies including ehealth and mhealth. Addresses communication through channels that promote the health of individuals and communities. Topics may include clinician to client communication, peer to peer communication, health literacy, health in the media, and effective public health communication.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HSC	340	Changing Health Behaviors	Comprehensive review of the theoretical bases of health behavior change. Students gain the knowledge to identify behaviors associated with optimal health and wellness and to develop theory-based intervention strategies and techniques to effectively influence behavior change.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prereq(s): Comm Hlth or Exer & Wellness or Hlth Sci or Hlth Sci (Hlthy Lifestyles Coach) BS major or Hlth Wellness Coach cert stdnt; min 30 hrs; Credit allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
HSC	355	Eating for Lifelong Health	Examines dietary choices throughout the life span and how they impact personal health and wellness. Raises awareness of thoughts and behaviors related to food and physical activity. Recognizes potential behavioral and social factors that impact participation in wellness programs. Evaluates the accuracy of consumer materials related to nutrition and wellness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
HSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	400	Practicum in Health Sciences	Supervised experience in area of student specialization. Students are placed with an agency, organization, business, and/or facility that meets their specific academic goals.	N	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Sciences Senior student
HSC	410	Support Health Older Adults	Focuses on community and national policies and programs that affect the health of older adults, programs to improve access to health care as well as to improve overall health, issues related to family and professional caregiving, and future challenges related to caring for older adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours

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HSC	412	Health Issues in Later Life	Focuses on health issues that primarily affect adults ages 50 years and over as related to nutrition, physical activity, environmental toxins. Focuses on exploring those factors known to promote healthy aging.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HSC	420	Eval Health Sci Res	Investigates methods of inquiry in health sciences and techniques for critiquing and interpreting research within the context of evidence-based practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): POS 401 (or PSY 230 or 231 or SOC 390 or STP 226 or 231 or 420) OR Medical Studies major with HCD 300 (or HSC 320)
HSC	432	Legal Issues in Health Care	Legal doctrines provide protection of consumers, health care providers, and health care institutions with regard to health care delivery including access and cost. Provides an overview of the legal obligation and rights of private and public stakeholders in the delivery and receipt of health care services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSC	440	Health Coaching	Health coaching techniques and skills for health promotion professionals with emphasis on the practical application of brief intervention and motivational interviewing skills to promote healthy lifestyle changes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 (EXW 340), EXW 342, HSC 340, or NTR 350; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills) OR Visiting University Student
HSC	441	Health Coaching Techniques	Complements previously learned coaching theory, skills and techniques related to guiding individuals and groups through meaningful lifestyle changes by emphasizing the use of evidence-based coaching approaches. Using a mentor, self-assessment and peer feedback model, students practice, compare and contrast diverse coaching methodologies emphasizing motivational interviewing techniques and cultivating their coaching voice. Students are assigned coaching clients, schedule coaching sessions, follow-up with clients, practice professional boundaries setting, become acquainted with ethical issues and referral processes, and validate their knowledge and skills when working with people with chronic disease who require lifestyle management strategies to improve their conditions. Program faculty provide mentorship and feedback regarding student's coaching performance.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 325; HSC 440; NTR 241; Pre- or corequisite(s): EXW 344; NTR 355 OR Visiting University Student
HSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; senior standing
HSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
HSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	
HSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HSC	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
HSD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	501	Science & Technology Policy	Covers the role and nature of science and technology in democratic societies, and how policy impacts their development, use and potential risks and benefits. Addresses the history of science and technology policy in the U.S. and how science-based research and innovation are integrated into the design and implementation of government decision making. Students study the history and actions leading to the formation of a science and technology-related policy of their choice. Drawing on multiple areas of expertise, the course emphasizes the need for novel yet informed approaches to science and technology policy in today's rapidly changing world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	502	Adv Science &Technology Policy	Explores innovation systems; the relationship between science and technology policy, equity and equality; the theory and practice of policy implementation; the utility of public value mapping; and the nature of technological fixes. Begins to explore the policy challenges and opportunities presented by emerging and converging technologies, and a changing governance and geopolitical landscape. Students study the implementation of a specific previously selected science and technology policy. Brings a transdisciplinary approach to science and technology policy that is uniquely relevant to today's increasingly technologically complex world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): HSD 501 with B or better
HSD	503	Governing Emerging Technologie	Examines the governance of science and technology through a focus on emerging technologies whose potential consequences in society are apparent only in anticipation and whose manifestations are still being shaped by local, domestic, and international institutions. These emerging technologies include nanotechnologies, synthetic biology, and other technologies associated with genetic modification, and information and cognitive science and neuro-technologies.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PAF 550 or HSD 503 or POS 573
HSD	504	Socio-Technological Systems	Provide skills and methods to analyze the design and management of large-scale socio-technological systems and the societal impacts of large-scale technological systems change. Emphasizes assessing the intertwining of lives and livelihoods in large-scale technological systems and the risks and vulnerabilities associated with large-scale systems failures, including the effects of both technological failures and natural hazards.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	505	Sci &Tech Policy Workshop	Provides the capstone experience for the Professional Science Master's in Science and Technology Policy. Builds on theoretical and analytical work carried out in the program's required courses, providing an integrative experience that requires students to synthesize knowledge gained in prior coursework and apply it to real-world policy problems and settings. By blending exposure to national science and technology policy officials and nationally recognized academic experts, the workshop both advances student learning beyond that possible in the classroom while encouraging students to expand their abilities to connect theoretical and practical insights. At the same time, the workshop provides a natural transition from the student's formal classroom learning to their required applied policy internships, which commences upon the end of the workshop.	N	SEM	N	YGB	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	512	Solar Energy Policy Workshop	Successful and rapid development of solar energy requires the training of a highly skilled technical workforce that is also well versed in the socioeconomic (e.g., social, economic, behavioral, policy) and commercial aspects of solar energy. Provides practical policy experience. Explores the relationships among science, policy and societal outcomes in a place where many important decisions about these things are made: Washington, D.C. During the one-week course, students meet and interact with the people who fund, regulate, shape, critique, publicize and study solar energy and science, including congressional staffers, funding agency officers, lobbyists, regulators, journalists, academics, museum curators, and others.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): Solar Energy Engineering and Commercialization PSM student; Credit is allowed for only HSD 512 or HSD 594 (Solar Energy Policy Workshop)

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HSD	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
HSD	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
HSD	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HSD	521	WrngTrue Stories that Matter	Researchers, policy wonks, grant writers, program managers, aspiring politicians, decision makers and writers of all ages: Everyone needs to know how to find and write a strong, effective, true story. This course helps students and professionals transform research, experiences and ideas into compelling nonfiction narratives so that readers are both educated and entertained. In this semester-long workshop, the instructor proceeds, step-by-step, through the entire writing true stories process, from finding the story to recreating scenes and building a scene-by-scene structure that is informative and cogent. Participants learn how to read with a writer's eye and recognize and utilize structural patterns. Explains, illustrates and practices literary techniques like dialogue, flash descriptions, inner point of view, and the art of imbedding information in story.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSD 521 or COM 598 (Writing True Stories That Matter: Creative Nonfiction) or HSD 598 (Writing True Stories That Matter: Creative Nonfiction)
HSD	540	Responsible Innovation & Rsrch	Movements throughout Europe and increasingly the U.S. are beginning to consolidate the recognition of the profound effects that research outcomes have upon the world under the idea of responsible innovation and research. The responsible innovation and research pushes beyond the responsibilities of the individual researchers and addresses larger issues such as research agenda setting, management of large-scale research and innovation enterprises, funding priorities and innovation as a national policy priority. Explores the idea of innovation as a national policy; the practical and theoretical underpinnings of responsibility in the research world; the history, current state and future trajectories of responsible research and innovation. Focuses on the current literature in the field.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		
HSD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	601	HSD I:Human Dimension Sci Tech	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	602	HSD II:Science Power&Politics	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	610	Colloquium	Regular meeting for the entire HSDST community. Includes outside speakers, student and faculty member presentations, and community discussions.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSE	101	Human Systems Engineering	Introduces basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems. Gives particular attention to the intersection of psychology and engineering. Students learn brain anatomy and physiology, sensation and perception, cognition, social systems and research methods so that they are able to design systems consistent with human capabilities and limitations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	
HSE	223	Applied Biology Human Behavior	Introduces the biological basis of human behavior and implications for human systems engineering. Structure and function of the nervous system as well as the behavioral effects of the physiological processes outside the brain (for example, hormones secreted by glands). Biological processes involved in many aspects of our behavior such as eating, sleeping, sexual behavior, emotional responses, sensory perception, learning and memory, language and cognitive functions, mental illness and drug abuses. Introduces a wide range of techniques and methods used to investigate the biological foundations of behavior. Prepares students for advanced courses in neuroscience, psychology or related fields.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	224	Applied Social Science	Covers social behaviors, social cognition and emotion critical for engineered systems that interact with humans (artificial intelligence, robots). Students learn how human beings behave, think and feel in daily social situations and think about how that information can be used to create effective human systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	225	Human Systems Integration	Reviews human systems integration (HSI), which is basically systems engineering from a human-centered perspective. Research, theory and methodological approach as applied to a variety of systems ranging from transportation systems to medical and military systems. Discusses handbook chapters and specific examples of human systems integration.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	230	Stats Human Systems Rsrch I	Basic methods of exploratory data analysis (including graphics) and statistical computing methods, including a detailed look at hypothesis testing, effect size and power analysis, as well as some methods for dealing with categorical and discrete data. Introduces both correlation/regression and analysis of variance (ANOVA), as well as common statistical software.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 101 or PSY 101 with C or better; MAT 117 or higher with C or better OR Visiting University Student
HSE	290	Exp Method Human Systems Rsrch	Introduces the basics of research methodology as applied in human systems engineering. Quantitative and experimental design from an applied perspective. Guided study of the process of conducting research within human systems engineering. Project topics range from research question generation and literature review to reporting of results.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): HSE 101 or PSY 101 with C or better; HSE 230 or PSY 230 OR Visiting University Student
HSE	323	Perceptual Systems	In-depth exploration of methods by which humans receive and interpret information from the world by vision, audition, taste, smell, touch and movement. Emphasizes the integration of behavioral and neural research with potential applications to engineering practice. Topics cover a wide range from the biological basis of sensory information processing to the behavioral aspects of perception, and to the applications of perceptual theories to disciplines like computer vision, display technologies, graphic design and sound processing. Solid foundation for further coursework and research in neuroscience or psychology; students also gain knowledge that could be useful in various professions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing
HSE	324	Applied Cognitive Science	Human cognition and how it bears on the design of technological and social systems. Although focuses on applications, requires student to delve into the basic literature that informs these applications and produce a literature review that draws on both applied and theoretical work. Many weeks involve a hands-on experience with a method or technique, and weekly quizzes emphasize critical thinking about these examples.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	325	Human-Computer Interaction	Theories, methods, and findings concerning the usability of computer systems and the design of effective user interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student

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HSE	390	Qualitative Research Methods	Reviews basics of qualitative research with applications to human systems engineering. Covers fundamental concepts of reliability and validity, and considers best practices in survey, questionnaire, interview and observation methods. Introduces and applies content analysis and grounded theory approaches for analyzing and interpreting qualitative data (e.g., interview transcripts and open-ended survey responses). All concepts are taught with an applied focus and real-world examples.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): HSE 290 or PSY 290 with C or better OR Visiting University Student
HSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours
HSE	422	Human Factors in Sport	Examines how psychological principles can be applied to enhance the performance of athletes and coaches.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 (or PGS 101) with C or better
HSE	423	Human Factors/Transportation	Examines human performance and human-machine design issues in aviation and ground transportation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	424	Human Automation Interaction	Current perspectives and techniques for modeling human-automation interaction to improve system design and system integration. Topics discussed include basic principles in human-technology interaction, key concepts to consider when designing and assessing supervisory control automation, and promising approaches for integrating increasingly autonomous automation, such as adaptive algorithms and embodied agents, into human systems.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; Pre- or corequisite(s): HSE 290 or PSY 290 OR Visiting University Student
HSE	425	Human Factors in Med Systems	Comprehensive introduction to human factors issues related to healthcare systems, medical training, and medical device design. Topics range from psychological and physiological aspects of human behavior like perceptual and cognitive functions, motor behavior, learning, motivation, physiology, and ergonomics to applied issues in the context of medicine and healthcare like human-computer interactions in medical information systems, the ergonomic design of medical devices, evaluation of medical device usability, team training in healthcare and the organization of medical environment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; Pre- or corequisite(s): HSE 290 or PSY 290 OR Visiting University Student
HSE	426	Training and Expertise	Reviews principles and features of expertise and the acquisition of skilled performance, such as knowledge, deliberate practice, self-regulation, feedback and training. Discusses and applies methods of evaluating expert performance (e.g., cognitive task analysis) and designing effective training systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better
HSE	427	Designing for Learning	Reviews principles of learning with applications to human systems engineering. Covers fundamental cognitive, metacognitive and motivational aspects of learning, and their applications in instructional design frameworks. Applies concepts to the design of multimedia instruction, educational technologies and similar learning resources.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; Pre- or corequisite(s): HSE 290 or PSY 290
HSE	428	Judgment and Decision Making	Reviews basic principles of human judgment and decision making with applications to human systems engineering. Covers "intuitive" vs. "rational" ways of thinking, heuristics and common biases (e.g., correspondence bias, self-serving bias). Also covers examples of effective thinking such as intelligence, creativity, transfer and relational reasoning. All concepts are taught with an applied focus.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; Pre- or corequisite(s): HSE 290 or PSY 290
HSE	429	Product Design and Evaluation	Applies human systems engineering methods to product design and evaluation. Consumer behavior, consumer research methods, systems and design thinking, how to conduct interviews, observational research, contextual analysis, questionnaire design and analysis, opportunity identification, usability testing and creativity.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; Pre- or corequisite(s): HSE 290 or PSY 290 OR Visiting University Student
HSE	430	Stats Human Sys Research II	Statistical methods commonly used in human systems engineering research. Emphasizes (1) connecting research designs and statistical analysis, (2) interpreting and breaking down significant effects, (3) addressing practical problems associated with doing research in applied contexts, (4) using statistical methods to understand the connection between variables in a complex system, and (5) the use of statistical software. Primarily focuses on analysis of variance (ANOVA) but introduces other techniques (including mediation analysis, structural equation modeling and cluster analysis). Recommended for preparation for both graduate study and careers in related industry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 230 or PSY 230 or PSY 231; Credit is allowed for only HSE 430 or PSY 530 OR Visiting University Student

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HSE	477	Human Systems Engr Capstone	Applied psychology from a systems perspective. Requires a report based on research and/or applied work as a culminating experience.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): Human Systems Engineering major; senior standing; Pre- or corequisite(s): HSE 290 or PSY 290; HSE 324 or PSY 324
HSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		
HSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6		Prerequisite(s): Barrett Honors student
HSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6		Prerequisite(s): Barrett Honors student
HSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-3		
HSE	520	Methods Tools App Cognitiv Sci	Provides a hands-on approach to understanding and using advanced methodologies commonly implemented in the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	521	Methods & Tools Human Sys Engr	Specific methods and tools used in the field of human systems engineering, with computer-based experience through both writing and using human factors tools and software.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	530	Intermed Stats Human Sys Engr	One-way and factorial designs, contrasts, post-hoc tests, probing of interactions, mixed designs, power, computer applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or PSY 530
HSE	531	Data Analytics	Principles and methods of analyzing human subjects data. Improves analytical and communication skills for scientific research; acquires and develops skills in using the open-source statistical computing platform R; and builds confidence in wrangling, analyzing and visualizing human subjects data.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 531 or HSE 598 (Data Analytics)
HSE	540	Found Applied Cognitive Scienc	Provides a critical background in the theory and organization of the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	542	Foundations Human Sys Engr	A wide variety of methodologies utilized by and applications of the broad field of human systems engineering.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): User Experience MS student; minimum 24 graduate TWC hours; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
HSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	502	Business of Health Care	Acquaints students with the various organizations and actors across the value chain of health care. Assesses provider, supplier, payor and IT multiple perspectives. Exposes the major concepts needed to understand the health sector globally (key business and clinical functions). Students emerge being able to be dropped down into a conversation about a health care company or problem and understand a large proportion of what is being discussed.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	506	Managing Health Care Orgs	Examines the dynamics within health care organizations. Provides a deep-dive into the best practices and key considerations for health care managers as they seek to operate within and modify their organizations. Employing concepts from organizational behavior and systems theory, provides students with a framework to define and resolve operational challenges associated with the management of a health care organization. Asks students to think as senior manager or consultants and propose solutions that are evidence based, feasible and demonstrate knowledge of the key contingencies associated with the context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	512	Healthcare Economics	Economics of production and distribution of healthcare services, with special emphasis on the impact of regulation, competition, and economic incentives.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): HSM 502 with C or better
HSM	550	Health Care Marketing	Marketing is a set of processes, relationships and co-creations meant to create, communicate and deliver value to the customer. Takes a customer-centric approach to health care marketing. Examines the changing roles in health care, organizations' approaches to patient-centricity, patient empowerment, responsibilities and experience. In addition, considers patient metrics such as patient engagement, customer effort, net promotion and patient satisfaction measures used by the U.S. government's Centers for Medicare and Medicaid Services. Considers marketing from the patient/provider, organizational and network/system points of view, organizational buying and selling processes, and the development and navigation of health care networks/systems from a marketing organization, service provider's and customer experience perspectives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student

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HSM	552	Supply Chains in Health Care	Examines the variety of organizations that constitute the health sector value chain with an emphasis on suppliers, distributors, IT intermediaries, group purchasing organizations, regulatory bodies, and payers. Key considerations include the design of stakeholder relationships along the value chain and the extent to which business and clinical considerations drive decision making and influence outcomes. Topics include strategic sourcing and contracting, stakeholder incentives and risk across the value chain, physician/professional perspectives and the management of the value chain relationships necessary to achieve high quality, ethical behavior and safe patient care.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSM 552 or HSM 598 (Healthcare Supply Chain Management)
HSM	575	Strategy in Health Care	Problems with health care quality, access and costs bedevil all countries. Focuses on the creation of global business innovations in health care that can better meet these needs. At its end, students should understand the opportunities for different kinds of health care innovations and how to create viable strategies and business models to meet them. Enables students to craft business models that attain alignment between an entrepreneurial health care venture and the Six Factors that shape this sector: financing, structure, public policy, consumers, technology and accountability. Covers these issues in every part of the sector, including insurance, services, IT, medical devices, biotechnology, diagnostics and pharmaceuticals.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	100	Global History to 1500	Surveys human origins; early civilizations in Africa and Eurasia; the ancient Mediterranean; the pre-Columbian Americas; the rise of Islam and Muslim empires; medieval Europe; the Indian sub-continent and imperial China, to 1500.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	
HST	101	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
HST	102	Ancient Mediterranean/Europe	Origins and development of European societies and institutions from the ancient world through the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	103	Early Modern Europe	The development of European societies and institutions from the Renaissance and Reformation through the Age of Enlightenment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	104	Modern Europe: French Rev-EU	The development of European societies and institutions from the French Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	106	Asian Civilizations	Civilizations of China, Japan, and India from antiquity to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	108	Introduction to Japan	Historical survey of the people, culture, politics, and economy of Japan, supplemented by audiovisual presentations. Intended for nonmajors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	
HST	109	United States to 1865	Growth of the Republic from colonial times through the Civil War period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	110	United States Since 1865	Growth of the Republic from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST or REL 111
HST	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Credit is allowed for only HST, POS 112 or HST 194 (Foundations of Democracy)
HST	113	US and AZ Social Studies	Introduction to the United States and Arizona from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only GCU 113 or HST 113 or GCU 194 (US & AZ for Aspiring Elms Ed) OR Visiting University Student
HST	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Credit is allowed for only GCU or HST 114
HST	130	The Historian's Craft	Introduces the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
HST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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HST	203	Historical Theme Latin America	General introduction to selected themes in Latin American history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	204	Historical Themes in the US	General introduction to selected themes in United States history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
HST	210	American Social History	American society from the colonial period to the present. Ethnicity, race, age, and sex as factors in historical experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	
HST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211
HST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
HST	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
HST	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
HST	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
HST	280	Hist Science Ideas Innovation	Fast-paced introduction to the intertwined histories of science, ideas and technological innovation, as they shape the globe from the ancients to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
HST	300	Veterans, Society and Service	Be part of this new field in veteran studies to create bridges among military, veteran and civilian cultures. Who are veterans? How and why do citizens become military service members and what is the experience of recruitment, training, service and transition to civilian life? How do we "read" a military uniform and differentiate the language and cultures of the five branches? How does military service lead or follow the nation in issues of class, gender, civil rights and LGBTQ? What are society's obligations to veterans and families as they transition through health care, higher education, employment and continued service?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student
HST	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
HST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
HST	303	Studies in Asian History	Specialized topics in Asian history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
HST	305	Studies in Latin Amer History	Specialized topics in Latin American history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student

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HST	307	Studies in African History	Specialized topics in African history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	308	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
HST	309	Exploration and Empire	Surveys European discovery, exploration, and imperialism in the early modern and modern periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	310	Film as History	In-depth study of moving image media as recorder, object, and writer of history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	312	Hist of Women in Sci and Med	In-depth inquiry into the history of gender issues in Western science and medicine from Greco-Roman antiquity through the beginning of the 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	314	Am Cultural History Since 1865	Culture, including ideas, ideals, the arts, and social and economic standards, from the age of industrialism to modern U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only AMS 321 or HST 314 OR Visiting University Student
HST	315	Political History of the U. S.	American political history since independence, focusing post-1865. Evaluates major trends in issues, presidential leadership, elections, and state politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	316	20th-C U.S. Foreign Relations	U.S. relations with foreign powers from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student
HST	318	History of Engineering	The history of engineering from the earliest record to modern times, examining the social, cultural, and economic effects on society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 45 hours OR Visiting University Student
HST	319	History of Aviation	The history of aviation, focusing on technical, political, economic, social and cultural aspects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only HST 319 or HST 306 (Aviation History) OR Visiting University Student
HST	320	U.S. Urban History since 1850	History of the city in American life from the mid-19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	321	Constitutional History to 1865	Origin and development of the American constitutional system from colonial period through the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	322	Constitution Hist/US Since1865	Development of the U.S. constitutional system from Reconstruction to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	
HST	323	Hstrol Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
HST	325	Immigration & Ethnicity in US	Origins, historical development, and future of a multiethnic society, 1492 to 2050.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	326	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
HST	327	Women in US History 1600-1880	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	328	Women in US History, 1880-1980	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student

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HST	329	Women in 20th-Century US West	Nuanced exploration of how women of various cultures have contended for and shaped the U.S. West, including the West of imagination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	330	Historical Thinking	Advanced examination of the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
HST	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student
HST	333	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
HST	334	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
HST	335	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
HST	336	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student
HST	337	Amer Indian History to 1900	Cultural, economic, political, and social continuity and change of American Indian communities to 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	338	Amer Indian History since 1900	Cultural, economic, political, and social continuity and change of American Indian communities from 1900 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	339	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
HST	340	American Military History	Studies the role of the military in American life during war and peace from colonial times to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	341	U.S. West 19th Century	Social, political, and economic development of the trans-Mississippi West, beginning with the Louisiana Purchase and ending in 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 341 or HIS 320
HST	342	US West 20th Century	Role of the western states in U.S. history since 1890 emphasizing politics, the environment, industry and labor, and ethnic minorities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	343	American Southwest	Development of the region from 1848 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	344	Arizona	Emergence of the state from early times to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	345	Environmental History	Examines the interaction between humans and the natural world in the United States from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better OR Visiting University Student

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HST	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
HST	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
HST	348	Rome	History and civilization of Rome from the beginning of the Republic to the end of the Empire.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	349	Early Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 5th through 10th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	350	Later Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 11th through 15th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	351	Renaissance Europe	Culture of the Renaissance in Italy and Northern Europe from the 14th to the early 16th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	352	Europe's Reformations	Causes and implications of the major Protestant, Catholic, and Radical religious reformations in 16th- and 17th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	353	Old Regime in Europe	Society and culture of Europe during the 17th and 18th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	354	Revolutionary Europe	Political, social, economic, and intellectual currents in Europe from the French through the Russian Revolutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	355	Total War and Crisis-Modernity	Forces of change and instability in early 20th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	356	Europe since 1945	Europe in its world setting since World War II, emphasizing major political and social issues from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	357	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391
HST	358	Jewish History from Antiquity	Continuity and change in political, legal, economic and sociocultural history of the Jews from ancient through medieval times.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	359	Jewish Hist from 1492 to 1948	Jewish history from early modern through modern times, highlighting emancipation, enlightenment, and Jewish responses to modernity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	360	The Crusades	Examines the origins, the development, and the outcomes of the movement that we call "crusades" by connecting the military aspect of the crusades to broader developments. Focuses primarily, but not exclusively, on the period 1095-1453. Geographically covers chiefly the Mediterranean, and, to a lesser extent, northeastern Europe.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 360 or HST 394 (Crusades in the Middle Ages) OR Visiting University Student
HST	361	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
HST	362	Sex&Society-Classical&Med Euro	Family life, sex roles, and marriage, and their relationship to political, economic, and religious change in classical and medieval Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	363	Sex&Society-Early Mod Europe	Family life, sex roles, and marriage and their relationship to political, economic, and religious change in early modern Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	364	Sex & Society in Mod Europe	Family life, sex roles, and marriage, and their relationship to political, economic, and social changes in modern Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours

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HST	365	WW I & II: Europe's East Front	In-depth study of the history of the Eastern Front in Europe in the two world wars.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105 or ENG 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 365 or HST 394 (WWI and WWII Eastern Front)
HST	366	England to 1689	In-depth examination of the political, economic, and social development of the English people to the late 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	367	Modern Britain	In-depth examination of the political, economic, and social development in Britain from 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	368	Culture & Imagination/Eur Hist	Topics in European cultural and intellectual history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
HST	370	Eastern Europe in Transition	Democratization, privatization, and identity transformations since the fall of communism in contemporary Eastern Europe and the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
HST	372	Modern Middle East	In-depth examination of the effect of the West and modernization on Middle Eastern governments, religion, and society in the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 24 hours OR Visiting University Student
HST	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
HST	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
HST	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
HST	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
HST	377	Sports in U.S. History	Focuses on major themes in American sports history, organized topically around fall sports. Themes encourage students to think critically about relationships among sport and society, identity, community, media, capitalism and education. Lectures, discussions, readings and films explore race, gender, class and sexuality as categories of analysis, and the role of sport in constructing ideas about the body along gender and racial lines. Also highlights social justice issues in sport as well as athlete activism throughout the twentieth century. Explores the ways in which the participation of Black, Latino/a and Native American athletes has both mirrored and diverged from Black, Latino/a and Native American citizens' participation in society throughout United States history. Also studies the process through which the equal opportunity to participate in school sports became defined as a civil right and, more recently, a human right.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 377 or HST 306 (Sports in U.S. History)

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HST	379	History of College Sports	Student-controlled intercollegiate contests quickly transformed into big-time college sports by the early twentieth century, revolutionizing the sports industry in the United States as well as the landscape of higher education. The American college sports enterprise is unique; nowhere else in the world does a large, amateur, revenue-generating system of school sports exist. After an exploration of the origins of intercollegiate athletics and the creation of the modern National Collegiate Athletic Association, topics include integration, women's intercollegiate athletics, the big business of amateurism, and scandal. Video lectures, readings and films introduce students to these often controversial topics, grounding them in the historical record. Many of the current debates concerning college sports have been taking place for more than a century.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 379 or HST 306 (History of College Sports)
HST	380	Studies in History of Science	Major themes in the history of science with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	381	Studies in History of Ideas	Major themes in the history of ideas with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	382	History of Innovation Tech	Studies the development and impact of innovation processes and technology on society, culture, and environment throughout history. Specific themes and topics vary.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	383	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
HST	384	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student
HST	385	History of Chinese Medicine	Explores developments of Chinese traditions dealing with the natural world, science, and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 335 or HST 385 or SLC 335
HST	386	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
HST	387	Japan	Political, economic, social, and cultural history of the Japanese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	388	Japan	Political, economic, social, and cultural history of the Japanese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	389	Japan Society & Values/Premod	Effects of economic and social transitions on personal and social values as reflected in the dramatizations of contemporary events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
HST	391	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
HST	392	Modern India	In-depth study of modern India and its neighboring countries from the 18th century to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 392 or HST 303 (Modern South Asia) or HST 394 (Modern South Asia)
HST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours OR Visiting University Student

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HST	397	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
HST	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Alvar Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
HST	405	Colonial American Hist to 1763	Political, economic, social, and cultural history of the colonial era. Concentrates on English colonies, with some consideration of Spanish, French, and other colonial regions in North America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 55 hours
HST	406	American Revolution/1763-1789	Causes, course, and consequences of the American Revolution culminating in the ratification of the Constitution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	407	Early U.S. Republic/1789-1850	Political, social, economic, and cultural development of the United States from the Revolution to 1850.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	408	Civil War & Reconstruction	Explores the causes, conduct, and consequences of the American Civil War, concentrating on the years 1848 to 1877.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	409	Emergence Modern US 1877-1918	Triumph of modern political, social, and economic structures and values, 1877-1918; role of region, religion, race, and ethnicity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	412	Contemporary U.S., 1973-Present	End of the Cold War, political crises, and cultural transformations in the U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	413	Contemporary America	The United States from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
HST	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419
HST	423	The Tudor Monarchy	Political, cultural, and social foundations of 16th-century England.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	424	The Stuart Monarchy	Political, social, economic, and cultural developments in 17th-century England.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	426	The British Empire	British imperialism and colonialism in Africa, the Americas, Asia, and the South Pacific.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	427	French Revolut/Napoleonic Era	Conditions in Pre-Revolutionary and Revolutionary France; organization of France under Napoleon and impact of French changes upon Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	429	Modern Germany	Germany since 1871.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours

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HST	430	Ottoman Emp/Classical Period	Focuses on the largest and most powerful Islamic polity from the late Middle Ages until the early twentieth century: its formation, institutions, social and cultural life, and its multifaceted impact on Europe and the Near East.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 430 or HST 495 (The Ottoman Empire in the Classical Period) or HST 498 (The Ottoman Empire in the Classical Period)
HST	432	East Euro/ the Balkans-20 Cent	Politics and culture in Eastern Europe and the Balkans from World War I to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	435	The Russian Empire	Development of Russian imperial institutions and civil society from the 17th to the early 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	436	Rise&Fall of Soviet Communism	In-depth study of Communist revolutionaries' rule of Russia, focusing on utopian culture, Stalinist terror, heroism in war, and the breakup of the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	438	Modern Spain	Cultural, economic, political, and social development of modern Spain.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	439	Athenian Democracy	Discussion-based seminar familiarizes participants with the origins, characteristic institutions and political ideology of the Athenian democracy of the 5th and 4th centuries BCE. Engages selected topics in the study of Athenian democracy and gives participants an idea of the substance of contemporary debates within scholarship. Topics will include: The origins of the Athenian democracy; women, slaves, and other subordinate social groups within the democracy; elite critique of democratic ideology and episodes of outright civil war; leaders and masses; the role of the court system within the democracy; democracy and the Athenian empire; and violence in Athenian society. The goal of the course, in addition to a greater familiarity with the Athenian democracy, will be a research paper with a well-chosen topic and a distinctive thesis.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 439 or HST 494 (Athenian Democracy)
HST	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 441 or LAS 441
HST	443	The United States & Latin Amer	Latin American struggle for diplomatic recognition, attempts at political union, participation in international organizations since 1810, and relations between the United States and Latin America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	444	Latin American Independence	History of independence movements throughout the Western hemisphere from the late 18th century until the mid-19th century.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 55 hours
HST	445	20th-Century Cuba	History of Cuba from colonial era to formation of the early republic; political, economic, social development in late 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	447	Modern Mexico	In-depth examination of political, economic, social, and cultural developments in Mexico from 1810 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 55 hours; Credit is allowed for only HIS 423 or HST 447
HST	448	Mexican/U.S. Border	Analyzes the evolution of the Mexican/U.S. border region from the mid-19th century to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	449	Mexican Immigration to U.S.	Assesses the evolution of immigration and emigration public policy since the mid-19th century. Seeks to contextualize the relationship between immigration and other elemental nation-state issues as the economy, education, identity, and civil rights.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451

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HST	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
HST	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
HST	456	The Vietnam War	Intersection of American and Asian histories in Vietnam, viewed from as many sides as possible.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	459	Gandhi/Politics of Nonviolence	In-depth study of Gandhi and the Gandhian political philosophy and practice of nonviolence.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 55 hours. Credit is allowed for only HST 459 or HST 498, Gandhi: Politics of Non-Violence
HST	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student
HST	465	Women in Europe 1750 - Present	European women's diverse religious, ethnic, national, and economic roles in society, culture, and politics, 1750 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, 108 with C or better; minimum 55 hours
HST	480	Mthd Tch Hist: Clsrn Resources	Methods in instruction, organization, and presentation of the subject matter of history and closely allied fields.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): admission to Professional Teacher Preparation Program; ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 480 or HST 530
HST	481	Mthd Tch Hist: Comm Resources	Identify community-based resources for teaching history, work with resources, and learn how to integrate them into the secondary classroom.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 480 or SED 480 with C or better; admission to Professional Teacher Preparation Program
HST	482	Writing HST Science Ideas Tech	Writing-intensive course examines intersections between texts and major themes in the history of science and technology.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
HST	485	History in the Wild	History outside of conventional academic texts and purposes. Students craft historical narratives in ways that engage an audience beyond the professor, present information in forms other than (but not excluding) writing, and identify and use sources found outside of archives.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student; HST 300 (HIS 300) or 495 with C or better
HST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; HST 300 (HIS 300) or 495 with C or better
HST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student

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HST	495	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
HST	496	South,SE & East Asia Gbl Mtrx	In this capstone seminar, majors in Asia Studies take up broad comparative themes, integrating knowledge from the major's three tracks (East, South, and Southeast Asia) and executing a research project culminating in a major paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Asia Studies major (East Asia, South Asia, or Southeast Asia) or History major with Asia concentration; minimum 55 hours
HST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
HST	502	Public History Methodology	Introduces historical research methodologies, techniques, and strategies used by public historians. Readings, short papers, and guest speakers. Required for students in the public history concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PHD student
HST	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives--whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
HST	515	Studies in Historiography	Methods and theories of writers of history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HST	525	Historical Resource Management	Identification, documentation, and interpretation of historic period buildings, sites, and districts. Emphasizes interdisciplinary efforts among historians, architects, and anthropologists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	527	Historical Administration	Preparation of historians in administration of archives and historical sites, museums, societies, and offices in government agencies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	532	Community History	Techniques and methods of community history emphasizing local resources. Required for community history option.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 573 or HST 573
HST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	597	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and to articulate the value of the degree to potential employers or admissions committee members.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 502, 641, 642, or 643; HST 591; HST 640; 24 graduate hours
HST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	640	Historical Methods	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 640 or HST 500 (Historical Methodology)
HST	641	North American History	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 641 or HST 598 (US to 1877)
HST	643	Global History	Core readings course engages key historical monographs focused on global history. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 643 or HST 598 (World and Global History)
HST	644	Area Studies in History	Core readings course engages key historical monographs focused on a geographic or thematic area of study. Topic varies by semester. Provides core content knowledge and an understanding of debates and trends in the field. Provides an understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 644 or HST 598 (European Core I: Pre-Modern Europe) or HST 598 (Medieval and Early Modern Europe) or HST 598 (Pre-Modern Europe and the World)
HST	682	Advcd Rsrch Skill	Designed for students who are demonstrating a non-linguistic skill such as: quantitative methods of analysis, geographic information system mapping, documentary editing, training in archival management, oral history interview techniques and historic preservation, or interdisciplinary training in fields relevant to the student's research interests such as geography, anthropology, sociology, political science or public administration, literature, ethnic studies, women's studies, ecology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 682 or HST 692 (Documentary Editing Advanced Research)
HST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HUL	250	Intro Prblm-Base Intrdsc Rsrch	Introduces undergraduate students to transdisciplinary and interdisciplinary academic inquiry so that they may expand their understanding of and capacity to tackle the grand social challenges facing the world today. Equips students to engage in the interdisciplinary and intergenerational collaborative inquiry through the pedagogy of the Humanities Lab, which explores and seeks to address those grand social challenges.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
HUL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
HUL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
IAL	501	Character-Driven Leadership	Provides the core concepts of character-driven leadership defined as the commitment to do the right thing, the right way for the right reasons. Focuses on values; individual, organizational and national, along with ethics; culminating with a clear understanding of leadership. Led by a former U.S. Army, Lieutenant General with leadership experience of over 36 years in the Army and 6 years in higher education. Explores the "leader in me" by examining the values that they embrace and the causes that they believe in, along with understanding "the environment I lead in" and the criticality of comprehending where they lead and who they lead.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	502	U.S. National Security Policy	Core requirement for the McCain Institute master's degree in International Affairs and Leadership. Takes students through the realistic process of developing and implementing U.S. national security policy. Presented by a former senior national security professional, outlines the origins and current structure of America's national security architecture. Using actual policy decisions, students exercise the process of analysis, decision making and translating into action, elements of the country's national security agenda. Also include intensive analysis of the intent and outcome of such critical policy decisions and the leadership exercised by the participating decision makers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IAL	503	Applied Intl Leadership	Builds on the theoretical and practical foundation of the McCain Institute's leadership development curriculum conveyed in previous course work. During the semester, students engage with faculty and with each other in multiple in-depth applied leadership scenarios, examining various aspects of leadership in international settings. The semester culminates in individual student presentations analyzing a complex international leadership challenge.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; IAL 501
IAL	504	U.S. Diplomacy in Action	Led by a former U.S. Ambassador, students constitute a U.S. Embassy Country Team for a specific country and manage a reality-based diplomatic agenda. Students are assigned the actual roles of Embassy team members, and together with their "Ambassador," Students practice how U.S. foreign policy is developed and executed in the field. Through readings, case studies and insights of outside foreign policy experts and U.S. Foreign Service Officers, students are challenged to understand current bilateral policies and relations between the United States and the country assigned for the course. Students also develop new, creative programs for the future that promote U.S. interests and also improve the understanding between the people of the country and the United States. Case studies and class simulation exercises of policy making and program management help students understand good and bad character-driven decisions and leadership.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	505	The Modern Global Economy	Projects forward what the economic and business environment will offer to graduates of the IAL master's program as they enter the job market. "Character-driven leadership" course content prepares students for success in their chosen career field. Led by a former U.S. Ambassador with extensive experience in economic and commercial diplomacy as well as private sector international business for and over 30 years. Through readings, case studies and insights of economic and business leaders, challenges students to consider not only possible future trends that offer growth and opportunities, but also economic and business developments that threaten setbacks, insecurity and failures. Case studies and class simulation exercises of policy making inform students of good and bad character-driven decisions and leadership in the business and policy world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	508	Transatlantic Relations	Presents IAL students with a brief review of the rich history of the development of the Atlantic Alliance since the end of World War II, the end of the Cold War, and cooperation since the tragedy of the attacks on 9/11. But most importantly, this course projects forward what direction the U.S. and Europe are moving in the future. Challenges students to analyze and consider "over the horizon" trends and opportunities, but also the risks of conflict and how to mitigate and solve challenges. Case studies present "character-driven leadership" by U.S. and European leaders as they manage issues of cooperation and competition. Through readings, case studies and insights of European leaders, U.S. and European academic experts, and practitioners in government, business and Non-Governmental Organizations (NGOs), students develop their own policy proposals.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	509	Western Hemisphere	Elective course toward the MA in International Affairs and Leadership. Explores the opportunities and challenges facing the United States in its relationships with its regional neighbors, including Canada, Mexico, Central America, the Caribbean and South America. The lectures and readings consider how the region's social, cultural and economic history shapes its relations with the U.S. and the rest of the world. In a series of papers, students analyze how U.S. interests in the region can be best articulated in light of these factors.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IAL	511	Human Rights and Real Politik	Elective course for the McCain Institute master's degree in International Affairs and Leadership. With a heavily discussion-based format, explores the origins of the human rights movement, watershed moments, and contemplates what may be next. Based on the foundation that respecting human rights is not simply the right moral choice, but one that has economic and national security implications: that the world is more prosperous and more secure when freedom and rights are universally afforded. Presented by the McCain Institute's Director of Human Rights and Democracy, also addresses contemporary human rights crisis, particularly from a leadership standpoint.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	512	Countering Global Terrorism	Elective for the McCain Institute master's degree in International Affairs and Leadership. Analyzes, discusses and proposes tactics and strategies for countering global terrorism, mainly, but not exclusively from the U.S. perspective. Presented by a former senior U.S. government counter-terrorism professional, focuses on U.S. counter-terrorism strategy against Middle East terrorism since 9/11. On hand of actual policy decisions, students exercise the process of decision making and translating into action, elements of the U.S. counter-terrorism agenda in partnership with allies and even adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	514	Combatting Human Trafficking	Offers a practical, global, interdisciplinary examination of the many issues surrounding human trafficking and modern slavery. Includes an overview of the legal perspectives on human trafficking, as well as various perspectives and alternative approaches to addressing modern day slavery. Discusses the roles of government, investors and consumers in detail, providing students the opportunity to explore diverse methods in understanding the complexity of human trafficking and modern slavery. Through class discussions and writing assignments, challenges students to critically think about methods for combatting the multitude of factors that contribute to human trafficking and modern slavery.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	560	Capstone	Serves as the culminating experience for the MA in International Affairs and Leadership. Each student prepares a comprehensive presentation capturing the knowledge and insights gained during the degree program, focused on a specific international affairs leadership challenge. A 45-minute oral presentation must show analytical rigor and defend a tangible strategic plan for achieving impact and positive change. The oral presentation must be accompanied by written back-up material that fully substantiates and defends the student's policy analysis and proposal for action. The presentation is followed by a 45-minute Q&A session led by the course instructor joined by a panel of international experts, who engage the student and critique the presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAP	101	Art, Artist, and Culture	Provides an approach to art, creativity, and culture in global, historical, and contemporary contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	102	Found I: Perf Tech & Comp	Focuses on practice-based studies of contemporary presentational strategies and techniques.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	103	Found I: Interdisc Digital Med	Digital media studies and application of contemporary artists, processes, and presentation practices in interdisciplinary arts.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	104	Found I: Fund of Sound Art	Investigates late 20th- and 21st-century sound art and our relationship with it.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	105	Fndns I: Foundatns Visual Art	Focuses on contemporary aesthetic concepts and language for interdisciplinary visual arts application. Introduces core concepts of visual design: the elements and principles of design and the creative process, the basics of drawing, color theory, typography and 2D design. Engages student in the fundamental aspects of design to build an adequate foundation and prepares for the next level of the study of interdisciplinary arts practice.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	201	Intro to Interdisciplinary Art	Considers interdisciplinarity in practical terms in all art forms. Also considers antecedents and cross-cultural issues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	202	Persp Interdisc Arts & Perform	Social, cultural, and historical examination of interdisciplinary art and performance and a survey of current interdisciplinary work and approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	220	Intro to Game Studies	Examines the history, evolution, culture, aesthetics, ontology, anatomy, business and fundamentals of studying and building video games and the ways in which they interface with multiple disciplines in the humanities.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only IAP 220 or IAP 294 (Introduction to Game Studies) OR Visiting University Student
IAP	222	Games and Ethics	Involves students in the process of ethical gameplay design. Analyzes in-game challenges and mechanics with the lenses of various ethical theories. Students not only think deeply about the relationship between ethics and in-game challenges in game design, but also about real-life challenges that they might not have before realized were connected.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is allowed for only IAP 222 or IAP 294 (Games and Ethics) or IAP 294 (Game Over: Ethics and Games)
IAP	264	Music, Mind, & Culture	This interdisciplinary course explores how music and the general subjects of sound, noise, silence, hearing/listening are approached interdisciplinarily through the arts, humanities and sciences. In contemporary scholarship, the study of music crosses different academic fields and disciplines, including: musicology and music history, sociology and anthropology, cultural studies, religion, psychology, biology, ecology, neuroscience, mathematics, physics, technology and engineering, business and economics, philosophy, and aesthetics.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is only allowed for IAP 264 or IAP 294 (Music, Mind, and Culture)
IAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	301	Energetic Syst of Art: Collab	Identifies and explores the energetic systems at work in the creation, performance, and perception of art.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	302	Cross-Cultural Perspective/Art	Social and cultural perspectives of art and performance through a survey of historical and contemporary attitudes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	304	Trads/Avant-Garde Expermntl Art	Surveys 20th-century art movements and isms, including futurism, dada, surrealism, constructivism, realism, the Bauhaus, abstract expressionism, minimalism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	305	20th-21st Cent Art, Perf&Media	Surveys artists, movements, and trends in the arts with an emphasis on interdisciplinary performance, media, and technology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	307	Art and War	Global interdisciplinary survey of the range of work created by artists in response to war, through time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	310	Women in Art	Cultural, historical, and social issues relating to the seeming scarcity of women artists and changing social contexts for women artists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre- or corequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAP or IAS 310
IAP	321	Music Composition I	Study and implementation of specific compositional theories and procedures.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	322	Multitrack Digital Recording	Introduces students to theory and practice of Musical Instrument Digital Interface (MIDI) technology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	324	The Voice and Performance	Involves all aspects of the human voice, including research, creation, and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	325	Sound Perf: Exploring Alt Perf	Utilizes innovative sound ensembles to explore all aspects of sound and its place in various art forms.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisite: BA Digital Culture major or BA Interdisciplinary Arts and Performance major; Pre/Co-requisite: IAP 201 or 202

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IAP	331	Perf, Acting & the Individual	Explores the concepts of the self, the subject, and the author as each pertains to the solo artist.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	332	Technical Prod/Interdisc Arts	Develops basic technical knowledge and application of fundamental stagecraft techniques used in the creation and presentation of performance works.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	333	Directing for Performance	Explores various strategies for performance. Emphasizes nontraditional staging and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	334	Conceptual Develop in the Arts	Conceptual development processes in the arts from initial idea to formal project proposals, grants, and production plans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture or Interdisciplinary Arts and Performance or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Dm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Dm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Dm Wrk:Pg to Stg&Scrn) OR Visiting University Student
IAP	352	Seeing and Drawing	Develops drawing and seeing skills that are important not only to visual arts but also to music, dance, and theatre.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	354	Visual Representation	Explores materials, processes, and aesthetic concepts of art making through various media with readings on cultural perspectives and contemporary theory.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA major or Interdisciplinary Arts and Performance BA major; Pre- or corequisite(s): IAP 201 or 202
IAP	355	Illusion and Vision	Inquiry into 2-D surfaces for visual representation and personal expression; includes readings on color theory, visual perception, and historical/cultural patterns.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	361	Digital Editing/Media Literacy	Investigates the approaches used in digital editing with a focus on interactivity, graphics, audio, and desktop video.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	362	Games & Narratology	Focuses on design techniques for the writing of nonlinear and interactive stories in the video game development process. Compares and contrasts game writing with other creative writing such as short story, song writing, oral history, poetry, fiction and film. Examines, deconstructs and questions the game design approach commonly referred to as narratology. Inspects key texts in media and cultural studies for attitudes, ideas and thoughts on games and narrative in games. Uses materials, processes, and aesthetic concepts of level design and visual skills needed to create a video game using a game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	363	Sound, Image, and Media	Interdisciplinary arts projects for experimental approaches to relating sound and visual image, accompanied by survey of historical and contemporary material.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	364	Documentaries	Media arts projects exploring new and experimental forms of visualization based upon an interdisciplinary survey of historical and contemporary examples.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	365	Digital Interactivity	Combines graphics, video, and animation with digital authoring tools for creation of interactive multimedia Web sites.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	368	Digital Graphic Technologies	Employs technology used in contemporary graphic designs to design concepts and techniques for modeling and representation applications.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	371	Verbal Art	Examines varieties of verbal art in everyday life, literature, oral and literate cultures. Considers diverse cultural forms and values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	375	Contemporary Performance	Performance course focusing on elements of contemporary and digital performance in relationship to stage, new technologies, video, installations, and public art. Through interdisciplinary strategies, students gain tools to deepen their knowledge and range of performance. Requires students to engage in research, conceptualization, and the creation of new original work, combining classroom workshops, various readings, fieldwork, and production to emphasize interdisciplinarity, collaboration, and personal vision. Once theories and concepts are explored, students work in a conceptually based and physically rigorous environment toward producing new work, culminating in a final performance project.	N	STO	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA or Interdisciplinary Arts and Performance BA or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
IAP	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
IAP	421	Comp:Process, Techniq/Style II	Advanced study of specific compositional theories and procedures; in-depth analysis of individual work.	N	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	431	Perspectives/Performance/Actng	Focuses on the interaction of the performer with media, alternative stagings, and collaboration with other performers.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	433	Directing Workshop	Applies experimental directorial techniques to presentations and deconstruction of classical works including European and cross-cultural traditions.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is allowed for only IAP 433 or MAS 598 (Directing Workshop)
IAP	434	Production Laboratory	Develops original scripts into showcase productions. Students function as theatrical ensemble, participate in all phases of performance and production values.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	441	Movement for Performance	Explores the relationship of movement as it relates to performance, both historically and cross-culturally.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	462	Games and Play	Focuses on a study of play and game design. Discusses what play is and why humans need it as it pertains to game design. Considers and analyzes an examination of the dark side of play. Scrutinizes the concept of what critical play is and how games are working within social, political and cultural systems. Studies these concepts as the students design and execute a serious or artistic game demo using the materials, processes, aesthetic concepts of art making and scripting skills needed to create a video game using a 3D game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	463	Recording Studio Practicum	Supports advanced media students' work in the recording studio and media lab by refining skills producing recordings that enhance their academic and/or professional portfolios.	N	STO	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		Prerequisite(s): IAP 322 or 469; Credit is allowed for only IAP 463 or IAP 494 (Recording Studio Practicum)
IAP	464	Media and Diversity	Interdisciplinary art projects exploring identity, perception, and technologies from a basis of class, race, ethnicity, gender, sexuality, and ecology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	465	Media Technologies & the Arts	Practical explorations of media arts interrelated with cultures, society, and technology, addressed through readings, discussion, research, and student arts projects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	466	Digital Interactivity/Advanced	Advanced multimedia authoring skills for creation of interactive works in DVD, CD ROM, and other media formats.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students
IAP	467	Acoustic Ecology	Investigations into the relationship between audio art and ecology; covers field recording, oral histories, digital editing, and designing audio Web site and databases.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	468	Digital Graphic Applications	Targeting, planning, design, authoring, development, and presentation of professional digital media graphics for Internet and print.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students

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IAP	469	Advanced Audio Production	Engages advanced media students in the technical, logistical, and aesthetic concerns specific to audio in all forms of digital media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	471	Language, Culture/Performance	In-depth examination of language in myth, poetry, social and aesthetic performance genres.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	473	Aesthetic Research	Investigates how artists, in all disciplines and from different historical periods, conduct or participate in research.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	474	Art and Film	Focuses on film as an art form in relation to the arts through aesthetics, cinematic theory, period study.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	
IAP	480	Senior Project	Capstone course. Students develop an exit project for the IAP degree under the guidance of an advisor.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3-6		
IAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	496	Playworks Portfolio	Students devise a career plan, establish a digital portfolio, prepare artist statement, and become familiar with contracts and legal documents associated with a career as a serious independent game developer or studio artist.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Arts and Humanities in Games certificate student OR Visiting University Student
IAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	300	Career Strat & Pers Resilience	Analysis of sociological and economic factors of 21st-century work environments, integrated with a psychological understanding of resilience.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR New College Applied Science major OR Visiting University Student
IAS	305	Work and Identity	Explores the relationship between work and identity, as well as the search for meaning in work across generations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	
IAS	340	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
IAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
IAS	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
IAS	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409
IAS	410	Evolution of Ideas	Investigates ideas (paradigms) and revolutions (paradigm shifts). Examines several topics from perspectives of science, arts, humanities, social sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better OR Visiting University Student
IAS	415	Life in the Universe	Examines the search for life in extreme environments on Earth and in remote locations beyond Earth.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAS	416	Black Holes and Beyond	Explores developments in understanding nature's most basic force-gravity-from Aristotelian concepts to modern theories of curved space-time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAS	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
IAS	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits; Credit is allowed for only ENG or IAS 420 OR Visiting University Student
IAS	430	Science and Religion	Examines evolving relationships between scientific thought and Western and Eastern religious thought. Explores cosmologies, worldviews, and epistemologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 430 or MAS 510 OR Visiting University Student
IAS	480	Capstone/Practices/Approaches	Individualized projects developed by the student under the guidance of the capstone coordinator based upon the student's area of concentration. Provides an opportunity to apply the knowledge and skills developed in the course of their program to real-world situations.	N	RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		Prerequisite(s): Interdisciplinary Arts and Sciences BA or Philosophy, Religion, and Society BA or Applied Science BAS major
IAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
IAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6	L	Prerequisite(s): Barrett Honors student
IAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	
IAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	110	Intro Integrated Behav Health	Introduces major clinical concepts and practice models related to team-based medical and behavioral health care integration.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	120	Intro to Integrated Healthcare	Provides an introduction and overview of the American health care system and its driving forces, with a focus on the move to integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	415	Behav Hlth Over the Lifespan	Common issues and concerns faced throughout the different life stages and the associated behavioral health needs. Presents evidence-based strategies for primary prevention and early intervention. Provides case examples to effectively illustrate the application of the key constructs addressed in the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Triple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
IBC	425	Cognitive & Behav Counseling	Frameworks for conceptualizing health behavior change. Reviews evidence-based approaches that address patient's behavioral health needs in primary care and other medical settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours

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IBC	430	Med Pathophysiology, Terminol	Provides an overview of pathophysiology and medical treatment of common medical conditions in primary care (e.g., diabetes, coronary heart disease, hypertension, asthma, cancer). Emphasizes medical terminology, pathophysiology, common medical treatments and behavioral health issues associated with those conditions that students can expect to see in integrated medical settings, especially integrated primary care. Students learn appropriate medical terminology for symptoms, diseases, treatments and medical tests so they can communicate effectively with inter-professional medical teams. Discusses the role of the behavioral health provider as it relates to these conditions as well.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	520	Integrated Health PCMH	Covers the Patient-Centered Medical Home (PCMH), with an emphasis on alignment in primary care and other integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	530	Evid Based Integrated Health	Provides a health care manager's introduction to evidence-based guidelines for integrated health care design and delivery systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	540	Integrated Health Improvement	Team-based quality improvement evaluation, measurement and health care system transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	550	Integrated Health Care Ops	Integrated health care operations, including an in-depth exploration of health care and integrated care systems, planning, program assessment, implementation and change management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	560	Integrtd Health Care Data Anly	Data analytic tools and techniques used to plan, implement and improve integrated health care transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	570	Integrtd Health Care Fin Mgmt	Integrated health care financial management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	585	Team-Based Consultation&Ldrshp	Team-based leadership and consultation in integrated health care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
IBC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	601	Models of Integrated Primary C	Provides an overview of the primary care environment as well as current models of integrated primary behavioral health care. Reviews and critiques models of health care based on their success in impacted patient health outcomes and improving physician satisfaction, along with fiscal and care delivery systems for each.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	602	Healthcare Statistics	Provides an overview of contemporary issues in health statistics and develops student proficiency in completing hands-on statistical analyses using Microsoft Excel. Develops proficiency in using Excel to manage data analyses as an ongoing tool to collect and analyze clinical and cost-effectiveness data in primary care and related healthcare settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	603	Brief Interventions in Primary	Provides an overview of evidence-based care for the integrated primary care environment. In particular, reviews and applies the most common approaches to addressing co-morbid behavioral and medical conditions, including but not limited to brief psychotherapy, adherence enhancement, lifestyle medicine, and others, using cognitive-behavioral, acceptance and commitment therapy, solution-focused, and motivational interviewing approaches.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 603 or IBC 691 (Brief Interventions in Primary Care) or IBC 702
IBC	604	Clinical Med/Pathophysiology	Overview of each of the main systems within the human body. Addresses the major diseases (symptoms, diagnosis, and medical treatments) within each system. Students learn appropriate medical terminology for symptoms, diseases, treatments, and medical tests so they can communicate effectively with medical practitioners (nurses and physicians). Content is equivalent to pathophysiology training in an RN program. Also addresses the role of behavioral care providers in medical settings; design and implementation of psychoeducational programs in primary care; stress management techniques for use in medical settings; chronic pain management; identification and treatment of somatization disorder; increasing compliance in noncompliant patients; alternative/complementary medicine; overview of nutrition; and the effects of exercise and nutrition on prevention and treatment of diseases.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	608	Psychopharmacology Behav Care	Provides overview of psychopharmacology to equip the behavioral care provider with the understanding of psychotropic medications necessary to make prescription recommendations to primary care physicians and to participate in medication management for patients being prescribed psychotropics. Basic principles of pharmacology in general, including pharmacokinetics, pharmacodynamics, medication development and the FDA approval process, interaction effects, drug company marketing strategies, appropriate and inappropriate medication usage, over-medication, and off-label medication use. Reviews pharmacokinetics and pharmacodynamics in special populations (children, the elderly, and patients with co-morbid medical and psychological conditions).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	609	Clinical Neuropathophysiology	Presents overview of each of the basic neuroanatomy, neurophysiology, and a focus on the manifestations of neurophysiological dysfunction across the life span for Doctor of Behavioral Health (DBH) program behavioral clinicians. Covers the basic human brain anatomy, neurophysiological processes, development, and maturation. Using case studies, presents and discusses evidence-based support for theories of psychiatric disorders and neuropsychopathology. Incorporates evidence-based research findings on the role of genetics, neurophysiological adaptation, epidemiological and societal influences in order to develop understanding of disruptions in normal neurophysiological functioning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	610	Behav & Psych Assess Prim Care	Presents a comprehensive model of behavioral and psychological assessment for behavioral health clinicians in primary care and related medical settings. Provides behavioral health consultants with the necessary knowledge base and skills to develop an appropriate assessment and treatment plan for a variety of commonly seen complaints in primary care. Places attention on the assessment of both psychiatric and behavioral complaints across the lifespan. Students become familiar with both structured interview and empirically support quantitative measures consistently utilized to enhance our understanding of the presenting complaint.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	611	Population-Based Behv Hlth Mgt	Overview epidemiology for health care followed by population-based approaches to behavioral intervention. Epidemiology includes concept of populations; descriptions and definitions of health and disease; measurement of health (measures, morbidity, mortality and health); designs for studying the health of populations and standardization of population health measures. Population-based management includes definitions of medical management; planning health care for populations and population health outcomes; quality of care and economic analysis of population-based interventions; adjunctive treatments as a core component of population-based interventions. Also, advanced application of population-based behavioral interventions with a focus on design, measures, analysis, results and discussion of current approaches. Includes predictive modeling methods for defining populations; interventions focusing on stepped-care approaches; engagement strategies, interventions, measurement, and follow-up.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	612	Intro to Behav Interventions	Provides a foundational understanding of behavioral health interventions for primary care settings for those students intending to work in administrative, management or allied health positions. Provides a theoretical basis for various psychological schools of thought, as well as an overview of the empirical evidence for those approaches. Reviews models of therapy including: psychodynamic, brief strategic, cognitive-behavioral and solution-focused. Also reviews two intervention strategies typically used in integrated settings: Acceptance and Commitment Therapy (ACT) and Motivational Interviewing (MI). Explores the ways that these approaches serve as the theoretical framework of the Bidyne model.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 612 or IBC 780 (Introduction to Behavior Intervention)
IBC	614	Quality & Perf. Measure, Imprv	Overview of health care quality management, emerging models of health care performance measurement, and models of pay for performance incentives in health care designed to reward providers for attaining quality of care goals. Prepares behavioral clinicians to provide services that are consistent with best practices in quality management and performance measurement in health care and to provide care that is consistent with performance incentive programs that are present or on the horizon. A key characteristic of health care reform is increased focus on provider quality of care, accountability for quality via performance measurement, and aligning provider incentives to meet national and regional quality of care performance targets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	615	Innov. Techn. in Behav. Health	Provides a quick overview and answers to basic questions related to both online therapy and telemental health. Gives a downloadable audio recording (MP3) and access to the accompanying video clips that augment a rich sampling of pages extracted from our other coursework. As a composite, this experience introduces our multi-modal learning environment and, more importantly, gives an idea of the issues involved with establishing an online or otherwise remote practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 616 or IBC 780 (Innovative Technologies in Behav. Health Intervention)
IBC	620	Psychosomatic Illnes: Diag & T	Teaches how to successfully diagnose and treat physical illness caused by various forms of psychosocial stress (psychophysiological disorders, PPD). Because patients are often unaware of the nature or degree of stresses that are responsible for their illness, places emphasis on learning how to detect and use clues that patients provide to develop a more complete understanding of the struggles than they are able to perceive for themselves. Focuses on selecting, assessing and treating a patient known to the student who has medically unexplained physical symptoms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 620 or IBC 780 (Psychosomatic Illness: Diagnosis and Treatment)
IBC	624	Integ Behav Hlth Care Child Ad	Integrates developmental psychology with pediatric psychology in order to prepare behavioral clinicians to provide screening, assessment, and intervention for children and adolescents in primary care and other medical settings. Presents an overview of developmental stages with an emphasis on critical tasks, while contrasting normal versus abnormal development. Develops societal, familial, and cultural influences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	626	Behavioral Health Management	Presents an introduction to the roles and responsibilities of supervisor/manager in a health care organization. Provides behavioral health professionals moving into management with the necessary knowledge base and skills to be an entry-level manager and focuses on the further knowledge acquisition needed to become an experienced, effective manager and leader. In addition, discusses the larger context in which healthcare businesses operate--health care reform, regulations and technological changes. Participants take time to look at personal characteristics, interpersonal styles and presentation that affect how one is perceived and responded to in an organization. Too often we have observed individuals with high-level clinical skills moving into management without the requisite skills and understanding of issues, restricting their ability to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 626 (or IBC 724) or IBC 780 (Behavioral Health Management)
IBC	630	Financial Mgt of Health Care	Covers the fundamentals of health care finance with a concentration on health care system financing and the related operational management issues. Grounds clinical managers in finance principles and assists those students with understanding the financial issues currently faced by stakeholder organizations in the health care system. Focuses on the information and tools needed by managers to address financial issues and challenges as an organizational leader for integrated care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 630 or IBC 691 (Financial Management in Healthcare)
IBC	634	Strategies & Techn for Behv	Examines and discusses the theoretical and applied health-related research changing nutrition, smoking and physical activity behaviors in clinical practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	640	Family Couples in Primary Care	Explores the systemic dimensions of health care delivery that are relevant to working with families and couples in primary care. Students study models from family therapy and medical family therapy that address family dynamics associated with the management of health and illness, the progression of chronic diseases, and other medical conditions. Reviews strategies for adapting family systemic approaches to provide patient- and family-centered health care in a primary care setting.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 640 or IBC 691 (Family and Couples in Primary Care)
IBC	650	Veterans Health	Provides an introduction to the military and veteran culture and the integrated health care needs and management concerns related to this unique population.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 650 or IBC 691 (Veterans Health)
IBC	660	Healthcare Legal Ethcl & Prof	Integrate three key areas of healthcare ethics, law, and professional issues for the Doctor of Behavioral Health (DBH) clinician in primary care: (1) the code of ethics for psychologists; (2) legal and ethical issues in medicine; and (3) technological issues and the behavioral health provider.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	670	IBH Interv for Sub Use Disord	Focuses on the theoretical foundations, research and strategies for identifying, intervening and/or referring patients in primary care and other healthcare settings that present with substance use disorders or problem use. Provides detailed information about the clinical model of SBIRT (Screening, Brief Intervention, and Referral to Treatment), along with strategies for implementing sustainable business models for SBIRT in healthcare environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 670 or IBC 780 (Integrated Behavioral Health Interventions for Substance)
IBC	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	716	Health Care Information Mgmt	Provides a comprehensive overview of health care information technology (HIT), including the effects of the external environment and government policies on its evolution; the expanded role of the CIO; the basics of hardware, software and communication systems; the types of operational, management and clinical applications; and the value HIT brings to the enterprise. Included concepts reflect a broad vision of HIT management as a combination of technology, information and manpower leadership.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 716 or IBC 691 (Healthcare Information Management)
IBC	718	Healthcare Syst:Org, Del, Econ	Provides an overview of the U.S. healthcare system with a focus on economics and policy. Primary goals of the course are to enable students to recognize the relevance of economics to healthcare and to apply economic principles to better understand health-related issues; understand the U.S. healthcare delivery system in the context of social, policy, and economic factors; evaluate the evolving nature of healthcare reform initiatives and their implications for clinical practice, financing, research and policy; analyze public healthcare policy from an economic perspective. Students also focus on behavioral healthcare economics and policy and the economics of behavioral health services in medical settings. Students also understand the medical cost offset effect, including economic benefits of behavioral interventions for co-morbid medical and behavioral conditions, measurement of medical cost-offset, and cost-offset for psychopharmacology and specific behavioral conditions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	720	Behavioral Health Entrepreneur	Provides an introduction to the essential entrepreneurship skills for the behavioral healthcare clinician. Focuses on entrepreneurial skills designed to prepare the behavioral clinician to start a new business venture or revitalize an existing organization or business, to meet the needs of the evolving healthcare system and marketplace.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	725	Effect Consult Integrated HC	Prepares students to function as effective consultants in integrated care settings. Effective consultation includes the ability to engage, educate, inform, persuade and collaborate with diverse professionals both within the clinic or hospital setting but also in related systems of care. The hospital or clinic setting includes care providers such as PCPs, nurse, allied health administrative support staff, and managers and executives such as medical director, CEO and CFO. The hospital or clinic also includes related departments such as quality improvement, electronic health records/health information technology, billing, finance and actuary. Systems of care include the patient/family, community, health plans, disease prevention or management companies, specialty mental health and substance use disorder providers, community-based resources, large employer group and related EAP providers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 725 or IBC 691 (Effective Consultation in Behavioral Health)
IBC	728	Cultural Diver., Hlth & Illnes	Focuses on the relationship among cultural diversity, health and illness, and multicultural psychotherapy in primary care and other healthcare settings. Prepares behavioral clinicians to identify the relationship between cultural diversity and health and illness and to use effective psychotherapy informed by cultural diversity in primary care and related medical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	732	Leadership in Health Care	Leadership, management and organizational behavior in health care settings. Organizational behavior theories and concepts related to leadership. Uniqueness of structures, processes and interactions in integrated care programs and how to adapt these to medical settings. Communication skills, teamwork and collaboration. Current challenges to leadership in health care reform.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 732 or IBC 691 (Leadership in Healthcare)

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IBC	740	Cost Offset and ROI	Research has demonstrated that many integrated behavioral interventions designed to prevent or improve chronic disease outcomes result in cost savings by reducing overuse of health services and associated costs. Reviews research on conditions such as depression and anxiety co-morbid with chronic disease, somatizers, cardiovascular risk factors underlying chronic disease, substance use disorder, pain and opioid misuse, cigarette smoking and insomnia that show evidence for cost savings. The interventions are typically delivered in integrated settings such as primary care and based on the population health management model. Interventions include therapeutic lifestyle change, medication adherence, cognitive behavioral treatment and emerging eHealth and mHealth interventions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IDN	101	Elementary Indonesian I	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
IDN	102	Elementary Indonesian II	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): IDN 101 with C or better OR Visiting University Student
IDN	201	Intermediate Indonesian I	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 102 with C or better OR Visiting University Student
IDN	202	Intermediate Indonesian II	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 201 with C or better OR Visiting University Student
IDN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
IDN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
IDS	140	Nature of Knowledge Systems	Introduces students to the structure and divisions of knowledge systems in the university setting. After surveying the different types of disciplines, students learn processes for using knowledge and insights from different sources in an integrative manner.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
IDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	201	Intellectual Fusion	Introduces students to the history of interdisciplinarity. Examines major theories and methods of interdisciplinarity, and students use these methods to begin to examine complex interdisciplinary problems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
IDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	300	Theories& Applications Org Stds	Critical analysis and application of organizational theory and conceptual perspectives to identify and solve problems, emphasizing personal and organizational application.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
IDS	301	Becoming Interdisciplinary	The history of interdisciplinarity and methods of integrating knowledge and insights from multiple perspectives.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major OR Visiting University Student
IDS	302	Integration Skills	Develops integrative skills to create new understandings, models, products and ideas.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better OR Visiting University Student
IDS	310	Integration: Cultural Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand cultural diversity in contemporary U.S. society.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	311	Integration: Global Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand global issues.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
IDS	312	Integrative Perspect on Change	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine ideas, issues and institutions as they change over time.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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IDS	313	Integrvtv Persp on Chnging Wrld	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine global ideas, issues and institutions as they change over time.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	314	Integratv Persp Cultural Dynam	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine the shifting dynamics of cultural diversity in the United States.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
IDS	315	Integration: Social Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human behavior and interactions.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	316	Integration:Humanities Context	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human thought and creativity.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	321	Interdisciplinary Issues	Focuses on an interdisciplinary topic from the perspective of multiple disciplines.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	355	Peace Corps Seminar	The Peace Corps: its mission, history, concerns and application process.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	401	Integration: Experiential	Offers students the opportunity to apply their integrative skills in internships, directed projects or other experiential contexts.	Y	RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better; IDS 302 with C or better; minimum 2.00 GPA OR Visiting University Student
IDS	402	Senior Seminar	Capstone course helps integrate classroom and experiential learning. Students choose among course topics that address their interests.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Interdisciplinary Studies student; IDS 302 with C or better; minimum 2.0 GPA
IDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
IDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	OP4	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student
IDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
IDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
IED	320	Early Ed/Dev. Indigenous Child	Assists students in developing their knowledge of the development of Indigenous children and appropriate methods and strategies for effective instruction in preschool/kindergarten classrooms. Explores issues faced by Native American teachers to provide both an effective and meaningful educational experience for Native American and Alaska/Hawaiian Native children.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum junior standing; Credit is allowed for only IED 320 or IED 394 (Early Education & Development of Indigenous Children)
IED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
IED	410	History American Indian Educ	Philosophical and historical review of the development of American Indian education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Credit is allowed for only IED 410 or 510
IED	430	Lang/Literacy-Indig Peoples	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Credit is allowed for only IED 430 or 530
IED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
IED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
IED	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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IED	501	Indigenous Research Methods	Examines research, its methods and methodologies through an indigenous framework. Presents different methods, their connections to various research questions, and thoughts of ways to analyze extant educational data. Additionally, examines traditional methodologies, methodological clashes, and the insertion of critical indigenous research methodologies into the framing of the conversation. Offers an historical overview of research in indigenous communities.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student; Credit is allowed for only IED 501 or JUS 691 (Decolonizing Indigenous Research Methods)
IED	502	Indigenous Knowledges in Ed	Provides an overview of the literature on indigenous knowledge systems as they tie into education as broadly defined. Specifically focuses on indigenous knowledge systems and how it encapsulates relationships (between people and each other, humans and their environment, and humans and written and oral learning); responsibility; reciprocity; and respect. Covers both historical understandings of indigenous knowledge systems and the ways that these knowledge systems are currently being taken up by tribal peoples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only IED 502 or JUS 691 (Indigenous Knowledges in Education)
IED	503	Issues in Amer. Indian Ed.	Examines current issues facing American Indian student academic achievement and their path to higher education in the United States. Focuses on how structural and systematic dynamics influence American Indian education. Exposes students to literature and engages in discussions that allow them to analyze how policy, practice and lived-experiences shape American Indian education.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	510	History-American Indian Educ	Philosophical and historical review of the development of American Indian education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only IED 410 or 510
IED	530	Language/Literacy-Indig People	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only IED 430 or 530
IED	535	Comm-Based Action Research	Examines the basic structures of what comprises the research paradigm called Community-Based Participatory Action Research (CBPR). CBPR is research that connects "research experts" with community members with an explicit focus on sharing power, knowledge and ownership of data and its concomitant resources and products. Offers a "how-to" for students in constructing research projects utilizing this lens/framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	585	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and allows each student to explore a research area, interest, theme or question within Indigenous education. Develops final written products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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IED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	210	Intro Industrial Engineering	History of IE: IE career paths; ethical, social, and contemporary issues; introduces IE techniques, methods, and their application; case studies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 100, EGR 101, FSE 100 or SES 100 with C or better; MAT 265 or 270 with C or better OR Visiting University Student

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IEE	220	Business/Industrial Engr	Introduces business for industrial engineers, including business/financial structures, fundamentals of cost and accounting, role of business/engineering in society.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; Introduction to Engineering course with C or better OR Engineering Management student; minimum 25 hours OR Visiting University Student
IEE	300	Economic Anlys for Engineers	Economic evaluation of alternatives for engineering decisions, emphasizing the time value of money.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergrad student: MAT 265 or 270 with C or better and Introduction to Engineering course with C or better OR Engineering Management Minor/Concentration: MAT 265 or 270 with C or better OR Visiting University Student
IEE	305	Information Systems Engr	Overview of computer and information systems applications. Topics include client/server; distributed computing; networks; process modeling; e-commerce; enterprise applications; Internet.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 OR Non-Fulton Engineering undergraduate student; CSE 205; minimum 3.00 GPA OR Visiting University Student
IEE	320	Extreme Excel	Today's workplace environment for engineers demands advanced skills in using worksheet applications such as Microsoft Excel. Course addresses this important gap in the curriculum to provide support for students who are in need of training on the various capabilities of the software. In particular, students become familiar with various functionalities that are critical for performing their jobs as engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only IEE 320 or IEE 394 (Extreme Excel) OR Visiting University Student
IEE	321	Ethics&Technical Communication	Methods and tools for preparing students for work in industry including ethics, technical writing and communications; understanding how learned undergraduate skills are used in the workplace and in engineering problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; IEE 300 with C or better; IEE 380 with C or better; Pre- or corequisite(s): IEE 369 with C or better if completed OR Visiting University Student
IEE	369	Work Analysis and Design	Planning, analysis, and design of methods of accomplishing work. Emphasizes human factors, work planning, methods analysis and design, and work measurement. Applications in diverse fields.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Fulton Engineering undergraduate student or Engineering Management Minor/Concentration; FIN 300 or IEE 300 with a C or better OR Visiting University Student
IEE	376	Oper Rsrch Det Tech/Apps	Industrial systems applications with deterministic operations research techniques. Resource allocation, product mix, production, transportation, task assignment, networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s) with C or better: Indust Engr major; CSE 205; IEE 210; MAT 242, 342, or 343 OR Engr Mngmnt student or Math Concepts of Engr certificate student; CSE 205; MAT 242, 342, or 343 OR Industrial Engr grad student OR Visiting University Student
IEE	380	Prob & Stats Engr Prob Solving	Applications-oriented course with computer-based experience using statistical software for formulating and solving engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	CS	Prerequisite(s): Fulton Engineering undergraduate student, Engineering Management minor, or Mathematical Concepts of Engineering certificate student; MAT 266 or 271 w/ C or better OR Industrial Engineering graduate student OR Visiting University Student
IEE	381	Lean Six Sigma Methodology	Define, measure, analyze, improve and control (DMAIC) steps of six sigma methodology for business and quality improvement. Reviews the necessary statistical tools and illustrates their integration into the problem-solving process. Overview of lean principles and design for six sigma. Unique features of applying six sigma and DMAIC in transactional and service organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 380 with C or better; Credit is allowed for only IEE 381 or IEE 498 (Six Sigma Methodology) or IEE 498 (Six Sigma Green Belt) OR Visiting University Student
IEE	385	Engr Statistics - Probability	Conditional probability, common probability models, Goodness-of-fit tests and reliability models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate or Mathematical Concepts of Engineering certificate student; IEE 380 with C or better OR Industrial Engineering graduate student OR Visiting University Student

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IEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	412	Intro to Financial Engineering	Intensive exploration course of three phases: (1) a preparation phase for the terminology and financial lingo to be used throughout the semester, (2) introduction of more advanced financial topics such as portfolio formation, assessment and traditional portfolio theory, (3) several financial engineering topics such as the application of stochastic models to stock and derivatives pricing and financial risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 300 with C or better; IEE 380 with C or better OR Visiting University Student
IEE	421	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 376 with C or better; IEE 380 with C or better; IEE 385 with C or better; Credit is allowed for only IEE 421 or IEE 498 (Urban Operations Research) or IEE 521 or IEE 598 (Urban Operations Research) OR Visiting University Student
IEE	426	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: IEE 376 and 380 with C or better; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	431	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Fulton Engineering undergraduate student, Digital Culture (Media Processing) BA/BS major, or Engineering Mngmnt minor or concentration; min junior standing; Credit is allowed for only IEE 431 or IEE 541 OR Visiting University Student
IEE	437	Human Factors Engineering	Studies the human psychological and physiological factors that underlie the design of equipment and the interaction between people and machines.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student or minimum 3.0 GPA; Credit is allowed for only IEE 437 or IEE 547 OR Visiting University Student
IEE	454	Risk Management	Methods and tools for identifying, assessing, mitigating and controlling risk in business and engineering design activities. Decision tools include cost-benefit analysis, decision trees, value of information, Bayesian statistical decision making, fault trees, and failure modes and effects analysis (FMEA).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management Minor/Concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	456	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering student; IEE 300 with C or better; junior or senior standing OR Engineering Management minor or concentration; IEE 300 with C or better; Credit is allowed for only IEE 456 or IEE 556 OR Visiting University Student
IEE	458	Project Management	Life-cycle processes for selecting and managing large-scale projects to ensure successful completion. Topics include project phases, defining milestones, work breakdown structure, group decision making and teamwork, organizational structure, human resource management, technological and economic feasibility, configuration management, budget control, and resource allocation and scheduling. Use of modern tools for planning and controlling project performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management minor or concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	461	Production Control	Techniques for the planning, control, and evaluation of production systems. Forecasting, inventory control, scheduling, enterprise requirements planning, supply chain design, and coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; IEE 376 with C or better; IEE 380 with C or better OR Visiting University Student

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IEE	470	Stochastic Operations Research	Modeling and analysis with emphasis on stochastic operations research. Models for stochastic processes, including Markov chains, queueing and decision analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Industrial Engineering major, Engineering Management major or Computer Science major, or Mathematical Concepts of Engineering cert student; IEE 376 with C or better; IEE 385 with C or better OR Industrial Engineering graduate student OR Visiting University Student
IEE	474	Quality Control	Basic statistical process control techniques, capability analysis, design of experiments, and acceptance sampling plans.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 380 with C or better OR Visiting University Student
IEE	475	Simulating Stochastic Systems	Analyzes stochastic systems using basic queueing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 with C or better; IEE 385 with C or better OR non-Engineering major; CSE 205 with C or better; IEE 385 with C or better; minimum 3.00 GPA OR Visiting University Student
IEE	477	Syst Dyn & Thinking	Methods for the modeling and analysis of system dynamics; metrics to measure business performance; continuous simulation tools for evaluation of system performance over time.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): CSE 205 with C or better; IEE 380 with C or better; Credit is allowed for only IEE 477 or IEE 498 (System Dynamics Engineering) OR Visiting University Student
IEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		
IEE	485	Systems Design Capstone I	Senior capstone project provides students with the skills required to effectively complete a capstone project in design and development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s) with C or better: Engr Mgmt BSE major; IEE 321; IEE 369; IEE 458 OR Industrial Engr BSE major; IEE 321; IEE 369; IEE 376; Pre- or corequisite(s): Industrial Engr BSE major; IEE 475
IEE	486	Systems Design Capstone II	Project in design and development. Individual or team capstone project in creative design and synthesis.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; minimum senior standing or postbaccalaureate; IEE 485 with C or better
IEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6		Prerequisite(s): Barrett Honors student
IEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6	L	Prerequisite(s): Barrett Honors student
IEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-7		
IEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-3		
IEE	505	Information Systems Engr	Studies information systems application engineering. Topics include information technology, data modeling, data organization, process mapping, application and database engineering, and user interface development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506
IEE	506	Web-Enabled Decn Support Syst	Development and analysis of Web-enabled applications for decision support. Topics include: (1) Web application development using ASP.NET; (2) design for computing scalability, interface usability and cyber security; and (3) use of application development skills and design concepts to develop a decision support system consisting of database, analytical data processing, expert knowledge and reasoning, and user-friendly interface for enabling transitions from data to information, knowledge and decisions. Knowledge of database development is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506

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IEE	511	Analysis of Decision Processes	Methods of making decisions in complex environments and statistical decision theory; effects of risk, uncertainty, and strategy on engineering and managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 498 (Analysis of Decision Processes) or 511
IEE	512	Intro to Financial Engineering	Introductory course on financial engineering covering traditional portfolio theory, forwards, futures, financial stochastic models, option pricing, and risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	520	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515 or IEE 572 or IEE 578; Credit is allowed for only BMI 555 or IEE 520
IEE	521	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 421 or IEE 521
IEE	526	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	530	Enterprise Modeling	Focuses on social, economic, and technical models of the enterprise with emphasis on the management of technological resources. Includes organization, econometric, financial, and large-scale mathematical models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	533	Scheduling	Provides the basic theory of scheduling and introduction to the applications domain.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	534	Supply Chain Modeling&Analysis	Techniques for modeling and analysis of supply chains. Inventory management, transportation/location models, value of information, channel alignment, risk pooling, contracts. Requires knowledge of basic statistics and probability and some optimization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	535	Intro Intl Logistics Systems	Exploratory project-oriented course that addresses domestic and international logistics practices from a high-level descriptive perspective and an analytical model-based perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	541	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student; Credit is allowed for only IEE 431 or 541
IEE	545	Adv Simulating Stochastic Syst	Analyzes stochastic systems using basic queuing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
IEE	547	Human Factors Engineering	Study of people at work; designing for human performance effectiveness and productivity. Considerations of human physiological and psychological factors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 437 or 547
IEE	552	Strategic Technologic Planning	Studies concepts of strategy, strategy formulation process, and strategic planning methodologies with emphasis on engineering design and manufacturing strategy, complemented with case studies. Presents and uses an analytical executive planning decision support system throughout course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	556	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability. Graduate students are expected to have a background in and understanding of large-scale systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 456 or IEE 556 or IEE 598 (Intro to Systems Engineering)
IEE	561	Production Systems	Understanding how factories operate, how performance is measured, and how operational changes impact performance metrics. Operational philosophies, increasing production efficiency through quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student

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IEE	570	Advanced Quality Control	Process monitoring with control charts (Shewhart, cusum, EWMA), feedback adjustment and engineering process control, process capability, autocorrelation, selected topics from current literature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	571	Quality Management	Total quality concepts, quality strategies, quality and competitive position, quality costs, vendor relations, the quality manual, and quality in the services.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	572	Design Engineering Experiments	Analysis of variance and experimental design. Topics include strategy of experimentation, factorials, blocking and confounding, fractional factorials, response surfaces, nested and split-plot designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	573	Reliability Engineering	Nature of reliability, time to failure densities, series/parallel/standby systems, complex system reliability, Bayesian reliability, and sequential reliability tests.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	574	Appl Deterministic Oper Rsch	Develops advanced techniques in operations research for the solution of complex industrial systems problems. Goal programming, integer programming, heuristic methods, dynamic and nonlinear programming.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Industrial Engineering MS, MSE or PhD student
IEE	575	Appl Stochastic Oper Rsch Mdls	Formulate and solve industrial systems problems with stochastic components using analytical techniques. Convolution, continuous-time Markov chains, queues with batching, priorities, balking, open/closed queuing networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	577	Data Sci Sys Decision Analyt	Focuses on applied data science techniques for the system decision support in PYTHON. Also targets anyone who is interested in data analytics in general or plans to work with data in a future career (such as data scientist and data analytics). Highly encourages some prior knowledge about PYTHON. Focuses on the conceptual understanding of system modeling, statistical and machine learning, and optimization with some mathematical formulation. Also covers the main concept and some implementation of the latest development in data science, such as distributed computing, large-scale optimization, and deep learning. Furthermore, covers how to implement these models for different types of data, such as tabular data, images, text data. Finally, discusses how to interpret these models for decision support of complex systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	578	Regression Analysis	Regression model building oriented toward engineers and physical scientists. Topics include linear regression, diagnostics, biased and robust fitting, nonlinear regression.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	579	Time Series Analy/forecasting	Forecasting time series by regression-based, exponential smoothing, and ARIMA model techniques; uses digital computer programs to augment the theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	581	Six Sigma Methodology	The six sigma process improvement strategy of define, measure, analyze, improve, and control (DMAIC). Integrates and deploys statistical methods and other six sigma problem solving via the DMAIC framework. Requires background in undergraduate engineering statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	582	Response Surfaces/Process Opt	Classical response surface analysis and designs including steepest ascent, canonical analysis, and multiple responses. Other topics include process robustness studies, robust design, and mixture experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better
IEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	585	Six Sigma Capstone	The DMAIC (define, measure, analyze, improve, control) improvement strategy is applied in the formulation and execution of a six sigma project.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student, IEE 530, 561, 572, 573, or 578; IEE 570; IEE 581
IEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		Pre-requisite: Engineering Graduate student
IEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	605	Foundations of Information Sys	Introduces science and engineering technologies of information systems design and analysis with focus on industrial engineering applications. Topics include: design and analysis of computational algorithms; and data mining techniques for classification, clustering, feature extraction and data reduction problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): graduate Industrial Engineering student
IEE	620	Optimization I	First course of the PhD-level deterministic course series. Covers foundations of optimization and linear programming. Prior working knowledge of linear algebra and knowledge of how to formulate linear programs is required for this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	622	Optimization II	Introduces computational methods to solve optimization problems with integer variables and the mathematical theory behind them. Follows formulation of integer programming models with a survey of relaxation, decomposition and cutting-plane methods. Discusses various practical problems such as facility location, transportation and distribution problems. Assigns computational examples using the software IBM ILOG OPL.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 620; Credit is allowed for only IEE 622 or 598 (Optimization II)
IEE	640	Prob. & Stochastic Processes	Presents fundamentals of probability and stochastic processes from a non-measure theoretic point-of-view to develop (a) basic model building and probabilistic reasoning skills, and (b) an understanding of important qualitative characteristics of some basic stochastic processes used to model dynamical systems with noise. Topics include a review of probability theory with particular attention to conditional probability and expectation; Markov chains; Renewal theory and the Poisson process. Considers applications in reliability, inventory theory, queueing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 470, Graduate Industrial Engineering major; Credit is allowed for only IEE 598 (Prob & Stoch Model) or 640
IEE	670	Mathematical Statistics	Introduction to the field of mathematical statistics at a level intended for first-year PhD students in Industrial Engineering. Builds a solid background in the principles, concepts, and techniques of mathematical statistics. Prepares students for advanced study and research in statistics, and is useful for understanding statistical data analysis techniques and developing statistical thinking. Completion of at least one course in probability and statistics is required prior to taking this class.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	672	Adv Topics-Experimental Design	Multilevel and mixed-level factorials and fractions, design optimality, incomplete blocks, unbalanced designs, random effects and variance components, analysis of covariance.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better
IEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	100	Intro to Info Technology	Project-based introduction to the key concepts, tools and devices underlying today's technologies. Introduces computer hardware, software and system architecture, the Internet, the World Wide Web and information technology ethics. Forms a foundation for future courses offered in the Information Technology major and the information technology discipline.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	101	Info Tech Programming Logic	Introduces basic analysis and synthesis procedures for an understanding of information system logical structures. Topics include: identifying organizational domains for potential automation, informational descriptions (scenarios) of those domains, and program structure and logical designs for potential problem/opportunity resolution. Uses graphical and textual models to express the logic and uses Python to implement the logic.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Credit is allowed for only IFT 101 or IFT 194 (Information Technology Programming Logic) OR Visiting University Student
IFT	103	OS Architecture	Introduces Linux, Windows and Mac operating systems. Begins with an overview of the hardware of modern computer and operating systems. Also introduces user management, memory management, network and disc storage. Provides hands-on practices to introduce computer and operating system virtualization. Provides an isolated environment to practice and do labs on advanced topics in the field of memory management, different portable data file input/output. Students learn Command Line Interface (Bash/Power Shell) to interact with computers and transfer data files from one operating system to another operating system. Also introduces basic computer networking and hardware security.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	166	Intro to Internet Networking	Introduces the OSI model and the protocol layers associated with information communication technology. Describes the role and purpose of each layer. Covers various network topologies, communications protocols, transmission media, networking hardware and software, network management and troubleshooting. Students gain hands-on experience in basic network configuration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	200	Info Model, Store & Retrieval	Covers the different types of data modeling with emphasis on the relational model. Develop solutions for data modeling problems, starting with identifying user and data requirements. Fundamentals of database design going through the conceptual, logical and physical data modeling steps. Create relational databases in order to store data. Utilize Structured Query Language (SQL) to represent, retrieve, and manage a database. Students learn how applications connect to databases, and interact with them.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student

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IFT	202	Fdn of Info and Comp Sys Secur	Introduces information technology (IT) security aspects and how technology can be vulnerable to unwanted intrusions. Project-based introduction to privacy, ethics, legal, social and professional responsibilities for information technology. Principles of information security and assurance and their implications on access. Tools and methods to identify intrusion, best security practices. Securing communications and applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better; IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student
IFT	210	Intro to Java Technologies	Introduces Java as a platform for application development. Fundamental concepts of the Java language (classes, objects, conditions, loops, arrays), object-oriented programming and design (inheritance, polymorphism, interfaces), exceptions, and basics of the user interface programming.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student
IFT	220	Man Config & Active Dir	Introduces the concept of Directory Services by exploring Active Directory from design and implementation. Further explores the role Active Directory plays in managing computer policy and security, user's identity management and authentication, and configuration management of both client computers and servers. Introduces the use of PowerShell scripting. Students implement their own Active Directory domain and then use it to perform various configuration management tasks. Assumes no previous experience with Configuration Management concepts or Active Directory.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student
IFT	250	Intro to UNIX Utilities	Technical overview (introduction) to Unix-style operating systems such as Linux. Covers a broad range of features of the operating system from core system technologies such as the Filesystem Hierarchy Standard (FHS), to using the shell and common Unix/Linux utilities to accomplish day-to-day computing tasks. Includes output redirection, file manipulation, basic system and environment configuration, and system monitoring. Assumes no prior experience with the Unix operating system.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better OR Visiting University Student
IFT	266	Network Info Comm Tech	Focuses on the physical layer, data-link layer and network layer of the OSI model. Introduces data communications, including signals and transmission impairments. Also introduces network topologies and local-area networks with particular attention on the network switch. Network layer protocols (IPv4 and IPv6) are included with focus on IPv6. Subnetting (classful and classless) are explored in more detail and Variable Length Subnet Mask (VLSM) is introduced.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 166 with C or better OR Visiting University Student
IFT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	301	Web Programming for HCI	Human-computer interaction design for rich media systems. Design processes, tools and principles for applications that are highly interactive with their users and which include multiple input/output modalities and multimedia. Project-driven course. Key topics include wireframes and persona structures associated with HCI.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better OR Visiting University Student
IFT	310	Info Systems Project Dev	Intense review of information technology organizational management; project development for IT infrastructure, management and security systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200; IFT 250; IFT 259 OR Visiting University Student
IFT	320	Managing the Cloud	Provides a hands-on comprehensive study of Cloud concepts and capabilities across the various Cloud service models including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Studies the latest solutions for cloud computing developed by Google, Amazon and Microsoft.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 202 with C or better; IFT 250 with C or better OR Visiting University Student

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IFT	360	Applications in AI	Artificial Intelligence (AI) is one of the most exciting technologies, both shaping and challenging the future of our industries and workforce. AI is a multidisciplinary area comprising theoretical, experimental and applied investigations of intelligent systems. Converging technologies along with natural language processing, big data and the Internet of Things (IoT) are driving the growth of AI. An introductory course in AI is a good place to start as it gives students an overview of the components, brings students up to speed on the AI research and developments to date. Covers examples of AI in use today such as Web crawlers, how humans detect financial frauds, self-driving cars, facial recognition systems, and natural language processors. Provides hands-on experience with the AI programming of different intelligent agents.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 210 with C or better OR Visiting University Student
IFT	366	TCP/IP and Routing	In-depth study of the TCP/IP protocol suite and router technology. Covers the underlying applications, components and sub-protocols that make up the TCP/IP suite. Emphasizes the fundamentals of routing, router configuration, understanding routing protocols and setting up access control lists.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 with C or better OR Visiting University Student
IFT	372	Wireless Fundamentals	Foundational course in wireless networking includes systems-level coverage of advanced information communication technology (ICT) focusing on digital wireless communications systems used in today's ICT networks. Introduces communication techniques that allow high-speed mobile connectivity. Includes topical areas in noise, modulation techniques, signal path loss, basic antenna theory and other similar topics required to understand how a wireless network architecture is developed. Also introduces the characteristics of both Wi-Fi based systems and smart phone-based systems. Specific topics include: binary communications, QPSK, PCM, TDM, QAM, OFDM, OFDMA and the wireless environment. Lays the foundation for fully understanding how to create and develop a wireless network.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 with C or better OR Visiting University Student
IFT	381	Information System Security	Fundamental course in information systems security that focuses on various security concepts. Students learn about intrusion systems and techniques to identify and help limit incursions. Familiarizes students with the different types of firewalls and their applications in the network. Details software security, hacking techniques and operating systems security. Moreover, emphasizes the initial security and privacy issues of some new technologies such as cloud computing, fog computing, Internet of Things (IoT), and blockchain. Finally, presents the fundamental of AWS security testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 202 with C or better OR Visiting University Student
IFT	383	Shell and Script Program/UNIX	UNIX operating system programming of shells, environment and 4th-generation languages and tools, such as sed, awk, perl, grep, make.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 250 with C or better OR Visiting University Student
IFT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	401	Info Tech Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 250 with C or better; IFT 266 with C or better; IFT 301 with C or better; IFT 310 with C or better; IFT 360 with C or better; IFT 381 with C or better; minimum senior standing
IFT	402	Info Tech Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 401
IFT	410	Big Data Tools and Practices	Architecture of Hadoop clusters at both the hardware and system software levels. Applies Hadoop and related Big Data technologies such as MapReduce, Pig, Hive and Impala in developing analytics and solving the types of problems faced by enterprises today. Expects programming experience in Java or Python and a general understanding of databases, networking and distributed systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 166 with C or better; Pre- or corequisite(s): IFT 383 with C or better if completed; IFT 433 with C or better if completed OR Visiting University Student

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IFT	433	Intermediate DB Mgmt Systems	Fundamental methods in managing data-oriented systems. Relational, object and hierarchical data architectures. Query languages including SQL. Semantics of transaction processing. Database system architectures including cloud-based, client-server and embedded databases. Security and privacy issues associated with SQL-structured databases. Modern trends in data management including unstructured data type management, data mining and business analytics. Describes NoSQL data management platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 433 (or CST 433) or SER 322 OR Visiting University Student
IFT	443	Analyzing Big Data	Data mining and statistical techniques that arise in data analytic applications. Students learn and practice working with big data using data analytic techniques presented in earlier coursework. Discusses one or more applications associated with data analytic techniques. Practices using advanced techniques that build on the knowledge provided in earlier coursework and knowledge gained from a statistical methods course. Familiarity with databases and statistics are essential.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 333 with C or better
IFT	458	Middleware Prog & Database Sec	Covers the main concepts of middleware technologies. Includes the various methodologies used to integrate applications, databases and Web services. Students develop multilevel applications using programming/scripting languages (such as PHP, Java, Python, Perl) which access data stored in a database. Middleware programs typically control database access and protect database SQL programs from security breaches. Students access the data from applications and other Web technologies such as XML, as well as protecting the data from unauthorized access.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 301 with C or better; IFT 383 with C or better; Credit is allowed for only ACO 321 or IFT 458 OR Visiting University Student
IFT	475	Security Analysis	Processes used in cyber security analyses. Presents through exercises techniques to ensure confidentiality, integrity and availability. Includes vulnerability assessments based on faulty software design. Explores malicious code and computer crime, including operating system (OS) root kits. Students are instructed in how to conduct analyses in support of cyber security initiatives.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 381 with C or better OR Visiting University Student
IFT	482	Network Forensics	Use and creation of advanced network forensics tools: intrusion detection and prevention, honeynets, traffic routing and management, and data reduction and graphing tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 475 with C or better; Credit is allowed for only ACO 331 or IFT 482 OR Visiting University Student
IFT	483	Developing Security Policy	Focuses on development of security policy, risk solutions and incident response facilities. Using the information security framework, identifies strategies and processes used in governance, risk management, asset management, human resources and physical security to create, evaluate and audit security policies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 202 with C or better OR Visiting University Student
IFT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		
IFT	488	Systems Administration of UNIX	UNIX administration of system and user services using command line and GUI tools. System security and forensics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 383 with C or better OR Visiting University Student
IFT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6		Prerequisite(s): Barrett Honors student
IFT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6	L	Prerequisite(s): Barrett Honors student
IFT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-3		

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IFT	510	Princ of Comp & Info Tech Arch	A comprehensive introduction to computer and information technology architectures. Provides a detailed understanding of computer architecture, system software and network architecture, including the relationships among these IT-related entities. Forms a technical foundation for understanding current IT-related technologies and how they work as an integrated system. Begins with the historical study of computing and networks and progresses through computer and networking architecture. Topics include principles of a computer's physical and operating system architecture and its relationship to a network's architecture, including hardware and software functionalities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	520	Adv Info Systems Security	Advanced methods that can be used to make the information secure in different environments. Provides details about modern cryptographic algorithms and their applications to make the IoT, Cloud and Big data information secure. Also provides comprehensive information about how to make wireless networks secure, different case studies and application in a real environment. Finally, covers the human aspect of information security for identifying issues and developing real solutions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	530	Adv DB Management Systems	Teaches advanced concepts of database management systems, for example, further dependencies and higher normal forms, indexing, transaction and locking, concurrency control, database security, backup and recovery, accessing XML data, query optimization techniques, and databases for web applications. Students expand their SQL programming knowledge through focused database design practice with an increasingly complex problem and solution set using Microsoft SQL Server. Introduces NoSQL for SQL developers and about unstructured "big data" databases and hands-on experience with MongoDB. Project-driven course builds on the background presented in Software Development for Information Technology. Familiarity with information modeling and software development process is essential.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	540	Info Systems Development	Proven techniques and methodologies for modeling information requirements and organizational data resources with a strong focus on gleaning information from data. Students learn how to discover, document and structure functional system requirements and user interface requirements at a level appropriate for advanced information technology practitioner, and develop conceptual data models. Covers the phases of a generic systems development life cycle (SDLC), object-oriented analysis and design (OOAD) with UML modeling, and Agile methodologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	545	Advanced Security Analysis	Advanced inspection of concepts and exercises related to security analysis. Expands analysis techniques to include wireless protocols, interception techniques, man-in-the-middle attacks, forgeries, cloned and replay attacks, cyber warfare, data corruption, data leakage and peer-to-peer networks. Through a variety of exercises, students work with tools and technologies available on the commercial market. The teaching environment is designed to impart the skills required by a corporate security professional.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		
IFT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IFT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	601	Re-Thinking Global Development	Traces and analyzes the origins of international or global development as theory, concept, policy and practice. Studies the key theories that have been influential in development conceptualization and policy, within the context of the history in which they arose; evaluates the results; and considers future trends and scenarios considering the critiques of such mainstream approaches.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	602	Innovation for Inclusive Devel	Clear advances in economic, social and political development and wealth generation have been uneven, and have resulted, as well, in an increasing gap between wealth and poverty. Continuing in the same direction could exacerbate existing problems, and in this course, we imagine different future outcomes and how to make policy today for a better future.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	603	Methods-Research Global Devel	Provides a practical introduction to research methods and methodologies in global development. Through hands-on exercises, exposes students to issues around quantitative and qualitative data collection and management, analysis and interpretation of results, and research ethics and practice in development as well as application of research to policy development and its implications.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	604	Colloquium-Innovation Glob Dev	This student-centered and faculty-mentored colloquium provides critical opportunities for leadership, organization, planning and implementation of events related to global development studies. Encourages students to propose and plan their own events, focused on issues and topics of importance to them, and utilizing the resources on the ASU campus and Phoenix area.	N	SEM	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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IGD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection, analysis and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	120	Drawing for Industrial Design	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for industrial design thinking.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design BS or Industrial Design BSD major OR Visiting University Student
IND	121	Principles-Industrial Design I	Industrial design as a language and process for creative thinking and realization.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Industrial Design major. Corequisite(s): IND 122
IND	122	Prin for Industrial Design II	Continued exploration of industrial design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): IND 120 with C or better; Environmental Design or Industrial Design major. Corequisite(s): IND 121
IND	227	Visual Methods-Problem Solving	Introduces conceptual design activity based on the mind-eye-media feedback loop. Graphic language used to represent conjecture, analysis, synthesis of objects, and their contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major, IND 122 with C or better; Passed Milestone; Corequisite(s): IND 260 OR Visiting University Student
IND	228	Imaging and Visualization	Design activities stressing graphic language abstraction practiced for presentation. Discusses structure of criticism, including description, interpretation, and evaluation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 227 with C or better; Co-requisite: IND 261
IND	242	Materials and Design	Materials application in design. Introduces characteristics and properties of metals and organic materials, including plastics, and inorganic materials.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	243	Design - Ecology&Social Equity	Explores the role of design in the ecological crisis; materials, processes, strategies and methods to design more ecologically friendly and socially equitable products.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	260	Industrial Design I	Introduces the method and process of the industrial designer. Determinants necessary in small product design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; IND 122 with C or better; Passed Milestone; Corequisite(s): IND 227 OR Visiting University Student
IND	261	Industrial Design II	Issues of physical form development related to product and design; form development properties of paper, fibers, wood, metal, and plastics.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 260 with C or better; Co-requisite: IND 228
IND	316	20th-Century Design I	European and American design from 1850 to 2000 with thematic emphases on worldview, technology, transportation, economics and nature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
IND	317	20th-Century Design II	European and American design from 1850 to 2000 with thematic emphases on communication, education, material culture, politics and society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours
IND	327	Presentation Graphics	Studies methods for portfolio and professional product presentation using graphic media for information transfer. Stresses aesthetic judgment, organization, and craftsmanship .	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; Corequisite(s): IND 360 OR Visiting University Student
IND	328	Graphics for Industrial Design	Investigates and applies applications and planning to the development of an identity for a product line structured as a system.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 327 with C or better; Co-requisite: IND 361
IND	344	Human Factors in Design	Man-machine environment systems; human characteristics and behavior applied to design of products, systems, and their operating environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	354	Principles of Product Design	Influences of physical and mechanical concepts in product design; mechanisms, kinematics, and fastening systems. Concepts of analysis for product design. Influences of concepts on aesthetics.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Digital Culture (Design) BA, Industrial Design BSD, or Pre-Industrial Design major; PHY 111 with C or better
IND	360	Industrial Design III	Methods of visual thinking, conceptualization, and ideation related to building skill levels in professional design presentation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 261 with C or better; Corequisite(s): IND 327 OR Visiting University Student
IND	361	Industrial Design IV	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials, and manufacturing.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Industrial Design student; IND 360 with C or better; Co-requisite: IND 328
IND	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		

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IND	424	Packaging Design	Reviews how companies package and brand their products to attract consumers. Students examine the packaging design of their choice of product in the marketplace and create packaging design by considering user experience, sustainability aspect, materials and branding. Final-review format includes a full-scale 3D mockup of the packaging redesign, supplemented with graphical data and drawings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design, Industrial Design, or Interior Design major; minimum 60 hours; Credit is allowed for only IND 424 or IND 494 (Packaging Design) or IND 494 (Product Branding for Package Design)
IND	460	Design Project I	Complete analysis of the product unit as an element of mass production, featuring marketing, technology, human factors, and visual design. Emphasizes professional standards.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 361 with C or better; Corequisite(s): IND 484; IND 470 OR Visiting University Student
IND	461	Design Project II	Product design, with emphasis in systems interaction. Culmination of design process and technique. Encourages individual project direction.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 460 with C or better
IND	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
IND	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475
IND	470	Prof Practice-Industrial Design	Business procedures, management techniques, accounting systems, ethics, and legal responsibilities of the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Industrial Design BSD major; Corequisite(s): IND 460 or Design Studies minor student OR Visiting University Student
IND	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Industrial Design major; IND 361 with C or better; Corequisite(s): IND 460 or 464
IND	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
IND	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
IND	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IND	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
IND	504	Contemporary Issues IND Design	Survey of contemporary design issues in industrial design as defined by the faculty and students.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design student; Corequisite(s): IND 521; Credit is allowed for only IND 504 or IND 598 (Industrial Design Seminar: Contemporary Issues)
IND	510	Foundation Ind Design Studio	Fundamentals of industrial design, methodology, visualization and representation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 510 or IND 590 (Foundation Industrial Design Studio)
IND	511	Core Industrial Dgn Studio I	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials and manufacturing.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 510 with C or better; Credit is allowed for only IND 511 or IND 590 (Core Industrial Design Studio I)
IND	512	Core Industrial Dgn Studio II	Industrial design projects with an emphasis on research and visualization techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 511 with C or better; Credit is allowed for only IND 512 or IND 590 (Core Industrial Design Studio II)
IND	516	The Culture of Objects	Examines the meanings of objects from the perspectives of design, material culture, philosophy and cultural studies. Covers such concepts as form language, planned obsolescence, object fetishism, product semantics, consumer value, production labor and user needs. Explains these ideas theoretically but also with case studies of historical and contemporary objects. Looks behind the scenes and beneath the surface at some of our most familiar and iconic objects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design (Industrial Design or Interior Design or Visual Communication Design) student; Credit is allowed for only IND 516 or DSC 598 (The Culture of Objects)

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IND	521	Adv Industrial Des Studio I	Design language, motivation and inspiration, form exploration sketching, rough form study mock-ups, form development, and presentation. Product redesign. Students create new design language proposals for an existing product and redesign the product based on one of these languages. Provides instruction and opportunities to understand product design language and how to redesign existing products with different design guidelines. Results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Industrial Design major. Credit is allowed for only IND 521 or IND 590 (Advanced Industrial Design Studio I)
IND	522	Adv Industrial Des Studio II	New product development with emphasis on design research, problem solving and functional/aesthetic development. Preliminary research about human behavior and health promotion. Based on the research findings, students conduct design research in teams and work on individual design projects. Student project results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and final appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion, and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 521. Corequisite(s): DSC 501. Credit is allowed for only IND 522 or IND 590 (Advanced Industrial Design Studio II)
IND	532	Solving Problems with LCA	Teaches the method known as Life Cycle Assessment (LCA), which quantitatively estimates the environmental health and human health performance of materials, energy sources and processes. This science-based method informs design teams how to reduce or eliminate complex environmental problems caused by the production, use and disposal of physical products and related services. Teaches attributional LCA that conforms to ISO 14040-series LCA guidelines.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; IND 522 OR Master of Science in Design (Industrial Design) student; Credit is allowed for only IND 532 or IND 598 (Solving Problems with LCA)
IND	544	Human Factors Sys/Documentatn	Advanced topics associated with theory and methods of human factors in design. Individual projects stressing problem organization, evaluation, and documentation.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
IND	548	Design for Sustainable Dev	Research on designing systems that are economically viable, ecologically friendly, and socially equitable.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	550	Furniture Design	Explores furniture design and production methods for industrial design.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 550 or IND 598 (Furniture Design)
IND	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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IND	621	Adv Industrial Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to identify new design concepts that improve society and the natural environment while also delighting users and creating value for business. For approximately one week, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 522
IND	622	Adv Industrial Des Studio IV	Challenges students to create new design concepts that improve society and the natural environment while also delighting users and creating value for business. Requires some independent direction by the student; however, instructor assigns deadlines and expectations for deliverables, and requires cooperation and collaboration among students. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 621
IND	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	111	Interior Design Issues/Theories	Interiors issues, theories, and philosophies. Emphasizes unique social and cultural factors that shape 20th-century design concepts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
INT	120	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student
INT	121	Intro Cmpttr Modl-Interior Dsgn	Computers in interior design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	
INT	122	Principles of Design	Applied visual vocabulary: studio experience exploring applications, process and conceptual development of the principles of order and composition.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Interior Design major; INT 120 with C or better; Corequisite(s): INT 124
INT	123	Introduction to CAD and BIM	Introduces AutoCAD computer-aided design and Revit building information modeling principles and strategies for designers of the built environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
INT	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
INT	131	Design and Human Behavior	Applies conceptual design to issues of programming and space planning, user needs, and behavior.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	SB	
INT	223	Drafting for Interior Design	Orthographic, paraline, axonometric, and perspective projection; shades and shadows; and basic descriptive geometry for interior designers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Passed Milestone; Corequisite(s): INT 261 OR Visiting University Student
INT	253	Interior Matrls/Finishes/Spec	Survey, evaluation, and specification of materials, finishes, and performance criteria for interiors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; INT 261 with C or better
INT	261	Interior Design Studio I: Res	Studio problems in interior design related to behavioral response in personal and small-group spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisites: Interior Design BSD major; Passed Milestone; Corequisite(s): INT 223 OR Visiting University Student
INT	262	Int Dgn Studio II: Hospitality	Focuses on environments that entertain or host the public, including but not limited to nightclubs, restaurants, theaters, hotels, city and country clubs, golf facilities, cruise ships and conference facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design major; INT 261 with C or better
INT	310	History of Interior Design I	Evolution of interior design as an expression of cultural influences from the ancient periods to 1835. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student

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INT	311	History of Interior Design II	Evolution of interior design as an expression of cultural influences 1835 to present. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Pre-requisite(s): INT 310 with C or better
INT	341	Interior Codes:Public Welfare/	Codes and regulations as performance criteria for interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisite: Interior Design student; Co-Requisites: INT 253; INT 262
INT	351	Ambient Environment	Surveys environmental control systems, acoustics, and lighting issues.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; PHY 101 with C or better; Corequisite(s): INT 352; INT 362 OR Digital Culture (Design) BA major OR Visiting University Student
INT	352	Construct Methods/Inter Desig	Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 362 OR Visiting University Student
INT	354	Construction Documents	Elements of construction drawing sets, application of codes and specifications, and contract administration.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Interior Design student; Co-requisite: INT 363
INT	362	Int Dsgn Studio III: Retail	Investigates interior design issues in hospitality and retail environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 351; INT 352 OR Visiting University Student
INT	363	Interior Design Studio IV	Explores the poetics of materials and their assemblage in the design of public and private spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 362 with C or better; Corequisite(s): INT 354
INT	381	Preinternship Seminar	Preparation of internship materials that produce and enhance a successful internship experience.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite: INT 262
INT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	412	Hist Decorative Arts-Interiors	Design of decorative arts as an expression of cultural influences and as an extension of interior spaces.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): INT 311 with C or better. Credit is allowed for only INT 412 or INT 515
INT	413	Hist Textiles-Interior Design	Cultural and historical expression of textiles as related to interiors.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 412 with C or better. Credit is allowed for only INT 413 or INT 516
INT	415	Latin American Design	The impact of Latin American culture and civilization on design throughout the Americas.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum junior standing; Credit is allowed for only INT 415 or INT 494 (Design and Culture in Latin America) OR Visiting University Student
INT	446	Furniture Design & Production	Design, construction, cost estimating, and installation in interior furniture and millwork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Graphic Design BSD, Interior Architecture BSD or Industrial Design BSD student
INT	464	Int Design Studio V:Work Env	Studio problems in interior design-related issues in work environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 363 with C or better; Corequisite(s): INT 471 OR Visiting University Student
INT	465	Int Dgn Studio VI: Instnl Dgn	Advanced interior design problem solving related to institutional facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design student; INT 464 with C or better; Co-requisite(s): INT 472
INT	471	Facilities Management	Facility management process in large-scale organizations. Planning, long-range forecasting, and productivity. Project management methodologies using micro-based software programs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
INT	472	Prof Practice/Interior Design	Business procedures, project control, fee structures, and professional product liabilities.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisites: Interior Design student; Co-requisite: INT 465
INT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Interior Design BSD major; INT 363 with C or better
INT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
INT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
INT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
INT	519	Designing with Materials	A comprehensive overview of technical specifications, materiality and interior construction; emphasizes the selection and specification of interior building materials.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Architecture MIA student; Corequisite(s): INT 521; Credit is allowed for only INT 519 or INT 598 (Contemporary Issues in Interior Arch Seminar)

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INT	520	Pro Practice for Interior Arch	Business procedures, project control, fee structures and professional product liabilities.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	2		Prerequisite(s): INT 521; Credit is allowed for only INT 520 or INT 598 (Professional Practice for Interior Design)
INT	521	Adv Interior Arch Studio I	Studio problems in interior architecture related to the integration of building structure and systems with the behavioral response to personal spaces.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Interior Architecture major. Credit is allowed for only INT 521 or INT 590 (Advanced Interior Architecture Studio I)
INT	522	Adv Interior Arch Studio II	Investigates interior architecture issues, including construction, technology, programmatic and environmental determinants.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 521; Corequisite(s): INT 527; Credit is allowed for only INT 522 or INT 590 (Advanced Interior Architecture Studio II)
INT	527	Contemporary Design Theory	Aesthetic, political, economic, and social theories that have shaped modern design; theory as the basis for design philosophies.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	529	Design Criticism	Applies critical methods to design as material culture and human expression; evaluates achievement versus intention.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	541	Codes and Building Regulations	Codes and regulations as performance criteria for interior design.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): INT 521; Credit is allowed for only INT 541 or INT 598 (Codes and Building Regulations)
INT	554	Construction Docs for Int Arch	Elements of construction drawings sets, application of codes and specifications, and contract administration.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 521; Credit is allowed for only INT 554 or INT 598 (Construction Documents in Interior Architecture)
INT	558	Lighting Design	Fundamentals of lighting, which includes daylighting and artificial lighting; understanding of lighting as a design element: lighting concepts, design strategies, techniques, documentation, case studies and analysis tools.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student
INT	581	Preintern Sem for Int Arch	Preparation of internship materials, which produce and enhance a successful internship experience.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Interior Architecture student; Corequisite(s): INT 521; Credit is allowed for only INT 581 or INT 598 (Preinternship Seminar for Master of Interior Arch)
INT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	621	Adv Interior Arch Studio III	Structured around the Design School traveling-studio model, based on design problems emphasizing the global context of interior architecture as it influences interior space and architectural form.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 522
INT	622	Adv Interior Arch Studio IV	Individual, student-initiated capstone project reflecting a culminating synthesis of interior architecture ideas.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 621
INT	650	Diversity and Design	Seminar-based investigation of how different aspects of embodied identities impact how spaces are designed and how people experience spaces. Explores the history of identity politics in relation to the design professions, as well as critiques of design approaches based on a universal body. Students learn about the relationship between design and, among other aspects, gender, race, ethnicity, culture, disability, age, class, gender identity, or sexual orientation. Expects students to recognize and understand what biases impact their work as designers. Critically investigates methods to assess these biases and their impact on users, as well as solutions to avoid or mitigate them.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only INT 598 (Diversity and Design) or INT 598 (Identities and Design) or INT 650

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INT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IPI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	296	Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward the goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Students learn how to understand a complex problem through multiple steps, to approach challenging primary content, to productively critique each other's work, and to think critically. Students meet for 2 hours per week but work extensively outside of class.	Y	LEL	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		
IPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
IPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	496	Advanced Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward our goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Each student runs an independent research project using the techniques taught throughout the course. The research project requires some knowledge creation—that is, development of ideas, supported hypotheses, observations and the like, that add to the mass of human knowledge rather than just restating it.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		Prerequisite(s): IPI 296 completed two times with C or better OR IPI 296 with C or better; HUL 250 with C or better
ISS	110	Dimensions of Social Science	Introductory survey of the disciplinary components of social science, including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only ISS 110 or ISS 302
ISS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	301	Integrated Soc Sci Rsrch Meth	Overview of the methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include data collection and data management techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	302	Scope of Social Science	Surveys the disciplinary components of social science including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 110 or ISS 302 OR Visiting University Student
ISS	304	Integrated Theories Social Sci	Broad survey of the major foundational theories in the disciplines of social science, including sociological theory, economic theory, political theory, anthropological theory and philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
ISS	401	Statistics Integrated Soc Sci	Statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures and inferential statistics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): MAT 142 or higher
ISS	410	Integrative Leadership Studies	Explores the concept and practice of leadership by examining general leadership theories and personal leadership skills with a view to transcending disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours

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ISS	415	Knowledge Management	Overview of concepts in knowledge management, types of knowledge, processes of knowledge generation, codification and transfer. Role of technology and networks in knowledge management and effective leveraging of organizational intellectual capital.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	428	Religion and Global Violence	Examines the tensions and interplay of religious and secular accounts for violence globally; considers theoretical frameworks from the social sciences for understanding such violence.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	437	Integrative Ethics in Soc Sci	Investigates ethical issues across professional disciplines in the social sciences with a view to integrating the literature and innovations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ISS	441	Conflict&Conflict Resolution	Overview of peace theories and peace movements; peace and peacebuilding; the nature and sources of global conflicts; critical security studies (covering human, food and environmental security); mechanisms for peaceful resolution of conflicts; culture of peace; and the relationship between underdevelopment and conflicts, particularly in politically fragile societies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	450	Consumerism & Sustainable Dev	Analyzes the impact of the quest for more and better consumer goods as it affects sustainable development and global ecology.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	456	Culture, Conflict and War	Explores the complex relationship between culture and conflict through an analysis of past and present conflicts and the role of culture in those conflicts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	482	Globalization&Int'l Polit Econ	Surveys the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 482 or ISS 522
ISS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 87 hours
ISS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 87 hours
ISS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
ISS	501	Adv Integrated Soc Rsrch Meth	Advanced review of methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include the scientific method, theory building and hypotheses, measurement and scaling, reliability and validity, and the structure and development of research designs and applications.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	502	Adv Seminar Integrated Soc Sci	Integrative survey of the disciplinary components of social science as disparate ways of making sense of human experience, including sociology, political science, philosophy and economics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	504	Adv Integratd Theories Soc Sci	Cross-disciplinary examination of major social science theories, such as: rational choice, environmentalism, institutionalism, functionalism, sociology, world systems approach, Marxism and democratic theory. Emphasizes bridging disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	505	Adv Methodologies Social Sci	Applies advanced statistics and statistical modeling in decision making in social research, with emphasis on regression modeling techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	506	Comm Gov, Ldrshp&Civic Engagmt	Explores theory and research on community governance with an emphasis on analyzing leadership in promoting civic engagement.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	508	Knowledge,Innovation&SocChange	Surveys the sources of knowledge and knowledge generation, facilitating factors for innovations especially in the development of technologies that drive significant, universal and enduring social change.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ISS	510	Relig,Secularism&Soc Dynamics	Analyzes the role of religion and secularism in the modern social sphere, and the social processes that govern religious belief and behavior. Emphasizes reading current research, applying relevant social theories, and deriving scientifically valid explanations for observations about religion.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	512	Adv Integrative Ethics Soc Sci	Investigates ethical issues across professional disciplines in the social sciences through an overview of recent innovations, discoveries and developments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	514	Culturt Div&Gender Understndng	Reviews the epistemological, theoretical and legal premises on the concept of social justice and the cultural, racial, ethnic, gender and other bases for the agitation for social justice, including strategies in pursuit of social justice.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	516	Conflict Res, Peace Studies	Evaluates the intersection of peace, conflict and social movements through a survey of social movements that promote war or peace throughout the contemporary world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	518	Science, Tech & Social Systems	Issues, definitions and literature involved in the study of science, technology and the evolution of social systems, emphasizing contemporary issues confronting modern societies and potential solutions to resolving these issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	522	Globalization&Int'l Polit Econ	Advanced treatment of the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ISS 482 or ISS 522
ISS	562	Pol Developmn&Underdevelopmnt	Examines the various perspectives and premises associated with efforts to promote economic and political change in different parts of the world, particularly in poor countries. Topics include population growth; migration and management; food production; shelter; education; industrialization; comparative advantage; foreign aid; and corruption.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	N	RSC	N	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	SEM	N	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	101	Elementary Italian I	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	102	Elementary Italian II	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	110	Intensive Italian I	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only ITA 101 or ITA 102 or ITA 110 or ITA 111

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ITA	112	Ita Romance Lang Speakers	15-week hybrid course: 3 hours class meetings, 1 hour student self-study. Designed for students with an active competence in Spanish or another Romance language such as French, Portuguese and/or Romanian, who wish to learn the essential elements of the Italian grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension" which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities between Spanish, other Romance languages and Italian, students master the four language skills of listening, speaking, reading and writing of in Italian at a faster pace.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only ITA 112 or ITA 194 (Italian for Spanish Speakers) or ITA 194 (Italian for Romance Language Speakers)
ITA	114	Gateway to Italy	Designed for students who have no previous knowledge of Italian, but wish to attend a study abroad program in Italy or acquire novice proficiency in the Italian language along with basic notions of Italian geography, society and culture. Develops basic vocabulary that enable students to engage in simple, everyday conversations in order to enhance and support their Italian experience, minimize stress and reduce the culture shock. Offers an insight into a wide array of cultural norms and practices of Italy, which are essential for an initial contact with the country and serves as a stepping stone for further study.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed only for ITA 114 or ITA 194 (Gateway to Italy)
ITA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	201	Intermediate Italian I	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on both spoken and written genres of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	202	Intermediate Italian II	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on values of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	210	Intensive Italian II	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills. Class meets four times a week.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): ITA 102 with B or better or ITA 110 with C or better; Credit is allowed for only ITA 201 or ITA 202 or ITA 210
ITA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	311	Speak Italy: Lang,People,Cultr	Develops oral/aural proficiency through the study of diverse voices from Italian culture and the analysis of spoken multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	312	Write Italy:Lang,People,Cultr	Develops reading/writing proficiency through the study of various texts in Italian and the analysis of written multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	315	Italian Culture:Good,Bad&Ugly	Studies the rich diversity and complexity of Italian culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	319	Italian for Professions	Conversation and composition course in which students gain the linguistic skills necessary to work in Italy.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ITA 202 with C or better
ITA	321	Italian Renaissance Culture	Studies the new voices of Renaissance culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	Prerequisite(s): ITA 202 with C or better
ITA	322	Modern Italian Culture	Studies the contributions of Italian thinkers to the development of modern western culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ITA 202 or 210 with C or better
ITA	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ITA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	413	Advanced Italian	Development and assessment of advanced spoken and written Italian proficiency through activities using all four skills.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 311 or 312 with C or better
ITA	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
ITA	420	Italian Cinema	Major trends of Italian cinema from the post-war period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	
ITA	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
ITA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ITA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ITA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
ITA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ITA	550	Italian for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ITA 494 (Italian for Reading Knowledge) or ITA 550
ITA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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IVD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	525	Fund of Entrepreneurial Leader	"Experiential" course for students to practice "being" a leader at the personal, interpersonal and community levels. While typical leadership classes leave one knowing about leaders and leadership, this class leaves students being leaders as part of their natural self-expression. The program follows an ontological pedagogy, rather than epistemological one. Ontology is the study of the nature and function of being "as lived" in real time. Epistemology by contrast deals with the varieties, grounds, and validity of knowledge. Leadership skills include mastery of communication at each of the three levels, from personal relationships to large-scale messaging for media and branding, and looking beyond the personal and interpersonal sociological level of analysis to incorporate principles of social and environmental justice into their relationships and the enterprises they lead.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; Corequisite(s): IVD 560; IVD 561
IVD	560	Innovation Studio I	A prerequisite for successful innovation and venture development is a deep understanding of the multidimensional context in which the innovation will be situated, and in which the venture will compete, whether a commercial enterprise or nonprofit. This course gives students the design, business and engineering research and evaluation tools and experience to investigate and immerse themselves in industry or sector customer needs, the competitive landscape and cultural context, as well as ways to predict and mitigate the unintended consequences of their innovation on society and the environment. Teaches students where to begin, how to inquire, how to evaluate information they uncover, and how to use critical thinking and analysis to develop the insights that become the foundation of their venture-development journey.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; Corequisite(s): IVD 525
IVD	561	Innovation Studio II	Problem reframing is essential to the innovation process, and to properly diagnosing problems so they can be investigated from multiple perspectives. It entails pushing past conventional assumptions about barriers to success, to find root causes—sometimes different problems altogether—that inspire novel, diverse approaches. Problem reframing is a powerful tool that increases the options and resources available in addressing any challenge. Students learn the difference between root causes and symptoms, understand the systems affected by and affecting their challenge, and learn to see and act on problems as opportunities for breakthrough solutions.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 560; Corequisite(s): IVD 525
IVD	562	Innovation Studio III	In this iterative, creative "make-to-learn" phase of venture development, students explore prototyping and testing with audiences or end-users to develop feedback loops for real-time evaluation of their ideas, then synthesize learning from both successes and failures to progress toward a solution. Key components include mastery of ideation and creative development, framing strategic questions and success indicators for prototyping of services or products, evaluation of feedback and iteration of progressively more promising ideas, and evaluation of their innovations measured against the success indicators they developed. Students learn and practice prototyping service interactions as well as product innovations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 561; Corequisite(s): IVD 630
IVD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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IVD	630	Scaling Entrepreneurial Leader	The personal skills required to succeed in a small start-up environment are different from those required to run a successful enterprise or nonprofit. Many entrepreneurs do not have access to the learning that prepares them to both launch and successfully scale their venture. Complexities of board management, fostering a creative culture, codifying a communication system that becomes a source of energy and a north star for the organization, inculcating values of social and environmental justice into a culture and translating them into daily behavior are required capacities which cannot be learned in theory, only in practice. Students master the skills to lead an enterprise through the challenges of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; GRA 562 with C or better; Corequisite(s): IVD 562; IVD 660
IVD	660	Innovation Studio IV	Faced with the challenge of business model generation and prototyping, students need to define the starting points of value proposition, supply chain and customer segments. Later in the process, a clear description of the revenue model, customer relationship, key resources, key activities, key partners and cost structure complement the original value proposition design. The refinement of the newly created business model is made through a process of iteration. Students have an overall comprehension of the strategic innovation process made of (a) strategy, (b) execution, (c) tools and (d) metrics before moving to the stages of scaling and growth of the business. In order to develop a viable business model, students need to understand the costs of development, manufacturing and getting their goods or services to customers.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 560; IVD 561; IVD 562; Corequisite(s): IVD 630
IVD	661	Innovation Studio V	SCALE is translated as proportional growth of production and profit aiming at a larger market position. Understanding the timing to scale a business model is crucial to its success and scaling can be discussed in terms of market, process and team. Faced with scaling issues of their business models, students need to build their own framework--or tools--in order to make decisions concerning the whens (time) and hows (market, process, tools) of scaling. Topics covered also include, but not limited to, venture funding strategies, budgeting capital needs, developing e-commerce, CRM analytics, supply chain and operations. At the end of this semester, students present a fully developed venture, with clearly articulated market need, viable innovation based on end-user feedback, business model and plan for scale. Where relevant, students register their intellectual property through ASU, using the university's published guidelines and procedures.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): IVD 525; IVD 560; IVD 561; IVD 562; IVD 630; IVD 660
IVD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	100	Intro Soc Justice Human Rights	Interdisciplinary introduction to the study of social justice and human rights through examination of materialism, intersectionality and inequality, advocacy and social change, and critical trauma studies and humanitarianism in transnational and global perspective.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
JHR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
JHR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		

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JHR	305	Theory Soc Justice Human Rts	Interdisciplinary survey of theories and practices of social justice and human rights in transnational and global perspective. Explores various theories of social justice and human rights and examines in-depth case studies of social injustice and human rights challenges. Also explores the future of social justice and human rights in light of global climatic and environmental change. Social sciences theories and methods combine with humanistic philosophy to understand the foundations of social justice and human rights.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours
JHR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours
JHR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
JHR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
JHR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): minimum 45 hours
JHR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Social Justice & Human Rights MA student
JHR	501	PS Social Justice&Human Rights	Classical and contemporary theories of social justice and human rights in the context of current local, national, and international issues. Special reference made to the roles of both governmental and nongovernmental organizations in addressing social justice and human rights issues.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	506	Grant Writing	Seminar in grant writing and fund raising for social justice and human rights. Provide an introduction to the grassroots grant writing and fund raising process, with a particular focus on justice-oriented nonprofit and international nongovernmental organizations.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	510	Problem-Based Sem Social JHR	Interdisciplinary seminar examines current problems in social justice and human rights from several different theoretical and analytical viewpoints. May be repeated once for credit.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	511	Community-Embedded Seminar	Interdisciplinary seminar requiring students to be placed in community organizations dealing with the course issue during the semester. Emphasizes developing effective strategies for partnerships with relevant community organizations and evaluating institutional settings, policies, and procedures from the perspective of social justice and human rights.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	525	Action Research	Advanced practicum in engaged, community-embedded research and interpretive analysis. Gives students experience in the practice of engaged fieldwork as well as the writing it generates.	N	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	549	Capstone Social Just Human Rt	Culminating experience for students in the MA in Social Justice and Human Rights program. Analyzes and evaluates literature in the field and recommends practices of social justice and human rights through written and/or media projects. Includes practices of social justice and human rights within and across various organizations and local, global or transnational contexts.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Social Justice and Human Rights MA online student
JHR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JHR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Social Justice and Human Rights MA student
JHR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JMC	101	Grammar for Journalists	Grammar course specifically designed to help journalism majors master the essentials of grammar. All majors must achieve an 80 percent in the course, indicating a mastery of grammar, before they can move on to any other journalism course.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student
JMC	102	Coding for Journalists	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
JMC	110	Principles & Hist of Journalism	Fundamental principles of journalism and the evolution of those principles through the history of the U.S. news media. By understanding the history of journalism, students learn about the most critical values of the profession. This is the first of four "values" courses Cronkite students take during the four-year curriculum.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 110 or MCO 120 OR Visiting University Student
JMC	120	Studio Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major; Credit is allowed for only JMC 120 or 194 (Studio Production) OR Visiting University Student

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JMC	121	Sports Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Sports Journalism major; Credit is allowed for only JMC 121 or JMC 194 (Sports Production) OR Visiting University Student
JMC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major OR Visiting University Student
JMC	201	News Reporting and Writing	Introductory news writing course required for all Cronkite majors. Students learn the basic reporting and writing skills needed for further study in print, broadcasting, online or public relations. Students practice reporting and writing news stories with an emphasis on accuracy, newsworthiness, deadlines, objectivity and fairness.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; ENG 101, 105, or 107 with C or better; JMC 101; JMC 110 or MCO 120 with C or better OR Visiting University Student
JMC	220	Broadcast Voice and Delivery	Builds vocal skills both for everyday life, and for on-air performance. Focuses on breathing, voice control and pitch, articulation, stress and intonation, resonance, sounding conversational, anchoring, and on-camera body language.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; Credit is allowed for only JMC 220 or JMC 294 (Broadcast Performance Skills) or JMC 294 (Broadcast Voice and Delivery) OR Visiting University Student
JMC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major
JMC	301	Intermediate Reporting&Writing	Students produce a wide range of news and enterprise stories that take them into the community to report on police, courts, business, government and diverse communities, among other topics. Students hone their interviewing, reporting and writing skills and pitch their stories to professional and student media outlets. They gain a deeper and more sophisticated understanding of newsworthiness, journalism ethics, and law.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	302	Sports Reporting	Students learn how to cover a sports beat in this hands-on class. They develop story ideas and sources and report and write multiple stories on deadline. Expects students to pitch stories to professional outlets with the goal of publication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	305	Multimedia Journalism	Software and digital tools commonly used by multimedia journalists, including shooting and editing photos and video, social media, Web analytics, basic HTML, blogging, and design for the Web.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; ENG 101, 105, or 107 with C or better; JMC 101; JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student
JMC	306	Sports Multimedia Journalism	Students learn and employ a range of software and digital tools commonly used by multimedia sports journalists. They shoot and edit photos and video, create social media, analyze and understand audience analytics, and learn basic design for the Web, with a focus on creating content for sports audiences.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 101, 105, or 107 with C or better; JMC 101 or 194 (Grammar for Journalists); JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student
JMC	310	Principles of Strategic Comm	Introduces students interested in careers in public relations, strategic media and related areas to the practices and principles of public relations in corporate, nonprofit, agency, government and other settings. Covers the role of public relations professionals, how the field is changing and career opportunities.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	313	Introduction to Editing	Hands-on training in editing copy, photos and graphics and writing headlines and other display text for print and digital platforms. Emphasizes editing for accuracy, clarity, brevity, grammar and tone. Students practice AP style, develop news judgment and consider the ethical implications of their work.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 101 with B or better; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student

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JMC	315	Intermed Rept & Writ (Brdcast)	Intermediate broadcast news reporting and writing techniques with emphasis on audio.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA
JMC	320	Newscast Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience and assignments based on editorial judgment, technical skills and industry awareness. Students emerge with strategies for total newsroom management, confidence in producing news content and newscasts under deadline pressure and prepared for a variety of producer-related roles in professional newsroom environments.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302 or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	325	Breaking News Multimedia Reprt	Students cover breaking news for azcentral.com, gaining practical experience in an online, multimedia environment. Students are selected by The Arizona Republic and work with professional editors in the Republic Media newsroom. Their work appears on azcentral.com and may appear in the print edition of the newspaper. Students must commit to two full days a week, and they earn pay in addition to class credit.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	330	Television Reporting	Hands-on experience reporting and producing television news packages. Teaches visual storytelling skills including writing, reporting, videography and editing for broadcast and other platforms.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301 or 315 with C or better; JMC 345 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	331	Television Sports Reporting	Hands-on experience reporting and producing television sports packages. Skills taught include sports writing, reporting and editing for broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 302 with C or better; JMC 346 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	333	Adv Bilingual Brdcst Reporting	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Students develop advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish, preparing them for entry-level positions in a small/medium market local television newsroom.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 or 315 with C or better; JMC 345 with C or better; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 or JMC 494 (Advanced Bilingual Broadcast Reporting)
JMC	345	Videography	Students conceive, plan, shoot, write and edit television news packages in this hands-on class. Skills taught include sequencing, framing, lighting, sound, story structure, news judgment, storytelling and editing. Students may use school-supplied cameras and editing facilities but must provide a Flash Memory card and portable external FireWire Hard Drive.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student
JMC	346	Sports Videography	Develops an understanding of visual sports storytelling and craft compelling sports stories using video and sound.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 102, 105, or 108 with C or better; JMC 302 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student
JMC	351	Photojournalism I	Teaches basic skills required to compose, shoot and prepare still photos for publication. Hands-on, with students shooting a range of assignments from news events to environmental portraits, and producing a portfolio of their work. Students may share a school-supplied Canon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with Flash (built-in or external) for this class.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student

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JMC	352	Sports Photojournalism	Students learn photojournalism skills, including composition, shooting and preparing still photos for publication in a sports context. Hands-on, with students shooting a range of sports assignments and producing a portfolio of their work. Students may share a school-supplied Cannon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with flash (built-in or external) for this class.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student
JMC	366	Journalism Ethics & Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journ & Mass Comm major; JMC 101 or 194 (Gramr for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	367	Ethics Diversity Sports Journ	Explores ethical problems related to sports media in a seminar setting. Discussion-based course applies journalistic values and principles to contemporary ethical dilemmas in sports media and helps prepare students for work in the profession.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Sports Journ BA major; JMC 101 or 194 (Gram for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; minimum 2.50 GPA OR Visiting University Student
JMC	402	Mass Communication Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Journ & Mass Com or Sport Journ major; ENG 102, 105, or 108 w C or better; JMC 101 or 194 (Gram Journ); JMC 201 w C or better; min 2.50 GPA; min 56 hours; Credit allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
JMC	406	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)
JMC	410	Turning Points in TV History	Uses historic television footage to talk about the evolution of news coverage and the ethical decisions journalists face.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 101 or MCO 101; minimum 2.50 GPA; Credit is allowed for only JMC 410 or JMC 494 (Turning Points in TV History) OR Visiting University Student
JMC	412	Opinion Writing	Traces the evolution of a new form of writing that blends the traditions of magazine features and classic newspaper opinion. Students pitch and write features in consultation with editors for Slate, the popular online magazine. Emphasizes curiosity-driven, smart and witty writing that advances an argument with strong voice and intellectual integrity.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 with C or better; minimum 2.50 cumulative GPA
JMC	413	Advanced Editing	Builds on skills learned earlier. Students master editing skills that include AP style, grammar, headline writing and page layout as well as editing graphics and other visuals, editing Web content and uses of social media. Students hone their news judgment and learn to work quickly and accurately on deadline.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 313 with C or better; minimum 2.50 GPA

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JMC	414	Digital Graphic Design	Theory, organization, and practice of layout, typography, and design in traditional and multimedia publishing.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	415	Writing for Public Relations	Develops the professional-level writing and strategic skills expected of public relations practitioners. Students learn how to design and produce strategic plans, news releases, media kits and executive communications. They are exposed to communications approaches required for different audiences and media and learn about public relations theory as well as audience research and analysis.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 with C or better; JMC 310 with C or better; minimum 2.50 GPA OR graduate Mass Communication student OR Visiting University Student
JMC	417	Public Relations Campaigns	Students work with professional clients in an agency setting to research, plan and create comprehensive public relations campaign that address clients' needs. Concepts, theories and techniques relevant to public relations campaigns as well as strategic planning, campaign components and technology resources and tools. Analyzes, discusses and responds to current public relations issues and case studies.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 cumulative GPA OR graduate Mass Communication student
JMC	419	Strat Comm Leadership & Ethics	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 419 or MCO 519 OR Visiting University Student
JMC	421	Advanced Digital Storytelling	Explores and practices the art of storytelling for digital audiences. Each student produces a digital project consisting of images, sound and text using various storytelling forms. Projects may consist of narrative multimedia features, news coverage, enterprise or investigative reporting. Emphasizes creating quality journalism, visual impact and creative use of multimedia tools and techniques. The best work is entered in national and regional contests. It is recommended that students have taken other classes or can demonstrate skills in visual journalism (photography, videography or graphics).	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 421 or JMC 494 (Advanced Digital Storytelling)
JMC	430	Sports Marketing and Campaigns	Creates a professional campaign engaging viewers and fans in new and meaningful ways solidifying Fox Sports Network's (FSN) position as a leader in sports programming. Students work within FSN's "Creative University" program to execute the campaign; FSN selects a campaign to implement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 430 or JMC 494 (Sports Marketing and Campaigns) OR Visiting University Student
JMC	434	Advanced Bilingual Reporting	In this project-based class, students work together to cover various angles of a topic related to Latinos in the U.S. Their digital and video stories, photographs and graphics often result in publication. Students need some ability to report in Spanish, although they do not have to be proficient. Prepares students for work in the Borderlands Bureau of Cronkite News or Cronkite Noticias, the school's Spanish-language news site.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s) w/ C or better: Journ & Mass Comm or Sprt Journ mjr; JMC 201; JMC 301, 302, or 315; JMC 305; min 2.50 GPA; Credit allowed for only JMC 434 or JMC 494 (Adv Biling Report) or MCO 534 or MCO 598 (Adv Biling Report) OR Visiting University Student
JMC	435	Latino and Transnational Issue	This fall-only seminar gives students a nuanced understanding of topics such as immigration, trade, health care, politics and cross-border conflict and cooperation, preparing them to report on some of today's most important issues. Students who complete the course are considered for a spring in-depth reporting course, which includes a reporting trip to another country.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 101 or MCO 101 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	436	Public Relations Research	Students learn about the importance of research in communications, conduct research using qualitative and quantitative methods, and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research and are exposed to types of research and their application in the field of public relations.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; JMC 301 with C or better; JMC 310 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 436 or JMC 494 (Public Relations Research) OR Visiting University Student

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JMC	437	Documentary Production	Students learn the fundamentals of producing documentaries, including research, script writing, production and shooting and editing video. Students produce a long-form documentary. Students become familiar with television documentary history in order to identify trends and learn about legal and ethical issues relevant to video documentary production.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 345, 346, or 448 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	440	Magazine Writing	Students report and write stories suitable for magazine outlets. They develop and pitch stories, learn new reporting techniques and employ literary techniques such as description and scene setting in their writing. See class notes for additional information.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 with C or better; minimum 2.50 GPA OR Sports Journalism MA student OR Master of Mass Communication MMC student OR Visiting University Student
JMC	441	Narrative Writing & Reporting	Covers the elements of narrative journalism--structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing--and applies them to a long-form story students report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journalism&Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 w/C or better; min 2.50 GPA; Credit allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing) OR Visiting University Student
JMC	444	Accountability Journalism	Accountability journalism in the digital age – its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; min 45 hours; min 2.50 GPA; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism) OR Visiting University Student
JMC	446	News 21	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 201 with C or better; JMC 301, 302, or 315 with C or better; min 2.50 GPA; Credit is allowed for only JMC 446 or JMC 494 (News21) or MCO 546 or MCO 598 (News 21 Seminar)
JMC	448	Non-Narr Video Storytelling	Teaches students how to create video pieces that effectively communicate a story, information or concept to an audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Jm & Mass Com or Spts Jour maj; JMC 305 w/ C or btr; min 2.50 GPA; Crdt for only JMC 448 or JMC 494 (DSLR Vid Strytell or Non-Nar Vid Strytell) or MCO 548 or MCO 598 (DSLR Vid Strytell or Non-Nar Vid Strytell) OR Visiting University Student
JMC	450	Issues in Coverage of Bus&Econ	Basics of business and economic reporting, one of the fastest-growing areas of journalism. Students learn what skills are needed to cover business and economic stories as well as the basics of how private companies operate and the factors that drive the economy. Students learn about opportunities in the field and hear from leaders in business journalism.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major or Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	451	Photojournalism II	Develops photojournalism and visual storytelling skills through extensive hands-on practice shooting and editing for online and print media. Introduces shooting video with DSLR cameras and becoming proficient at image cropping, writing cutlines and editing using Adobe Photoshop.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; JMC 351 or 352 with C or better; minimum 2.50 GPA OR Visiting University Student

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JMC	452	Visual Storytelling	Develops visual storytelling skills, working closely with a professional visual journalist to tell multimedia documentary stories that utilize video, still photos and text. In addition to the basics of storytelling, covers non-traditional techniques, including time-lapse, panos, HDR and star trails. Students should have basic skills in both still photography and videography and are expected to provide their own DSLR camera that can accommodate external mics and that have video capability.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; minimum 2.50 GPA; JMC 345 or JMC 351 with C or better
JMC	453	Reporting on Business and Econ	Trains in the basics of reporting about business and the economy. Helps students tell the stories behind companies, people and money, while improving competence in using numbers in stories. Offers the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 453 or JMC 494 (Reporting on Business/Economy)
JMC	455	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; JMC 305 with C or better; Credit is allowed for only JMC 455, JMC 494 (Digital Media Entrepreneurship), MCO 555, or MCO 598 (Digital Media Entrepreneurship)
JMC	457	Advanced Radio Reporting	Develops planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news, business, as well as hard and soft news feature reporting. Emphasizes pre- and post-production planning, development and execution.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism & Mass Communication BA major; JMC 301, 302 or 315 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting) OR Visiting University Student
JMC	460	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave the course with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content; and the requisite storytelling skills to produce work of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 460 or MCO 515 OR Visiting University Student
JMC	465	Telling Stories with Data	Techniques and tools of reporting using data and public records as well as how to use the Internet and other online sources to find information and sources for stories. Students get experience with computer spreadsheets, database software and statistical techniques as they develop their advanced reporting skills.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	470	Depth Reporting	Students learn to conceptualize, report and write or produce long-form, in-depth stories for publication or broadcast. Students learn techniques of investigative reporting, including use of public records and data, as well as advanced interviewing techniques, and discover compelling ways to tell complex stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	473	Business&Future of Journalism	Exposes advanced journalism students to broad media management problems; helps students understand how essential the bottom-line and quality journalism are to the entire journalistic enterprise; helps students think about how to balance those two concerns.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journ & Mass Comm BA major; JMC 101 or 194 (Grammar for Journ); JMC 201 with C or better; min 2.50 GPA; Credit for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journ) OR Visiting University Student
JMC	474	Advanced Issues Sports & Media	Exposes challenges facing sports and media in the 21st century, including changing content models, revenue streams, and the evolving relationship between teams and media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or 194 (Grammar for Journalists); JMC 201 with C or better; min 2.50 GPA; Credit allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Explor the Bus of Journalism) OR Visiting University Student

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JMC	475	Cronkite News: Broadcast	Students increase their knowledge of the television and multimedia news industry and receive a realistic experience in field and studio newscast production.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 330 or 331 with C or better; minimum 2.50 GPA
JMC	476	Public Relations Laboratory	Synthesizes and applies the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. Students: (1) analyze, discuss, then respond to public relations case studies; (2) develop an in-depth understanding of a client's needs; (3) conduct primary and secondary research; (4) work with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; (5) design and develop media products for client; (6) formally present the proposal to the client and the class.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	477	InnovationEntrepreneurship Lab	Research and development program designed to help media companies create new and exciting multimedia products and to help students create digital media startups. Brings together students from disciplines across campus, including journalism, business, computer engineering and design. Journalism students conduct research into developing new products and creating prototypes for those products. Students learn by doing, interacting with clients or investors, the director and the lead Web developer. Students schedule meeting times with the director to discuss projects.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/C or better; min 2.50 GPA; Credit allowed for only JMC 477 or JMC 498 (Innov & Entrepreneurship Lab) OR Visiting University Student
JMC	478	Cronkite News: Phoenix Bureau	Applies and enhances reporting, writing and multimedia skills.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	479	Cronkite News: Washington	Students participate in a full-time regional reporting bureau that gives them the opportunity to work as a Washington correspondent.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 478 (Cronkite News - Washington Bureau) or JMC 479 OR Visiting University Student
JMC	480	Cronkite News: Phoenix Sports	Students gain valuable experience in sports reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/ C or better; min 2.50 GPA; Credit allowed for only JMC 480 or JMC 478 (Cronkite News- PHX Sports Bureau) OR Visiting university Student
JMC	481	Cronkite News: LA Sports	Students gain valuable experience in sports journalism reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journ & Mass Comm BA or Sports Journ BA major; JMC 330 or 331 w/ C or better; min 2.50 GPA; Credit is allowed for only JMC 481 or JMC 478 (Cronkite News - L.A. Sports) or JMC 478 (Sports Journ Santa Monica) OR Visiting University Student

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JMC	482	Sports Knowledge Lab	The Sports Knowledge Lab is part of the Global Sport Institute, an international sports research and knowledge lab based at Arizona State that connects people to the power of sport by translating and amplifying complex sports research to broad, global audiences. Under the guidance of the executive editor of the Sports Knowledge Lab, students are responsible for the production and presentation of a variety of curated and original content from across the globe that examines the impact of sport on society and provides context for top sports headlines from around the world. Content includes long-form writing, documentaries, articles, newsletters, data visualization and podcasts. Global Sport Matters provides compelling angles that not only deepen people's understanding of issues that fit within the framework of the Global Sport Matters mission, but provides unique context, knowledge and tools that can lead to change.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301, 302, or 315 with C or better; JMC 305 with C or better; Credit is allowed for only JMC 482 or JMC 498 (Sports Knowledge Lab)
JMC	483	CronkiteNews-DigitalProduction	Students produce stories and multimedia across platforms for Cronkite News and professional news outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 483 or JMC 478 (Cronkite News Digital Production)
JMC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA
JMC	485	TV Magazine	Produce a 13-week television magazine program for Arizona PBS focusing on science research at Arizona State University, using long form DSLR video storytelling skills. Opportunity to field produce, research, report, use videography, writing and graphic skills under the direction of instructors.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prereq(s) C or better: Journ & Mass Comm or Sprts Journ BA mjr; JMC 301 or 315; JMC 345 or 494 (DSLRLR Vid Story); min 2.50 GPA; Credit allowed for only JMC 478 (TV Special Prj) or 485 or 494 (Pub Insight Net) or 498 (TV Mag) OR Visiting University Student
JMC	486	Digital Audiences Lab	Students participate in an immersive professional program experience to grow and engage digital audiences for real clients in an agency-like setting. Conduct audience and competitive research; analyze site and social content performance; create and measure paid and organic social media campaigns; execute SEM campaigns; create and optimize digital content; and make strategic recommendations to clients.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 315 with C or better; JMC 305 with C or better; MCO 307 with C or better; Credit is only allowed for JMC 486 or JMC 498 (Digital Audiences Lab) OR Visiting University Student
JMC	487	Howard Ctr Investigative Journ	Develops the next generation of watchdog reporters through hands-on investigative journalism projects. Students produce in-depth digital and documentary-style journalism that illuminates problems or wrongdoing and holds public officials accountable. The Center partners with national and regional news organizations to disseminate and publish student work. Completion of one Advanced Skills course with C or better (from Journalism and Mass Communication major map) is recommended to succeed in this course.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; Credit is allowed for only JMC 487 or JMC 498 (Howard Center for Investigative Reporting) OR Visiting University Student
JMC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 cumulative GPA OR graduate Mass Communication student OR Visiting University Student
JMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		Prerequisite(s): Journalism and Mass Communication BA major; minimum 2.25 GPA; successful completion of English proficiency exam OR Master of Mass Communication student
JMC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-3		
JPN	101	First-Year Japanese I	Basic speaking, listening, reading, writing, computer skills, and culture. Hiragana, katakana, 75 kanji. For students without previous Japanese instruction.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	

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JPN	102	First-Year Japanese II	Continued development of JPN 101 skills. 99 additional kanji. Communication skills goal: ACTFL Guideline Novice-Mid to Novice-High.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Pre- or corequisite(s): JPN 101 with C or better if completed; Students may not take JPN 102 if they have received credit for JPN 201, 202, 309, 310, 311, 312, 313, 314, or 321 OR Visiting University Student
JPN	110	Intensive Japanese I	First semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only JPN 101 or JPN 102 or JPN 110
JPN	115	Japanese Popular Culture	Examines different media of Japanese popular culture such as comics (manga), animation (anime) and film for evidence of how the Japanese express their self identity in Japanese society. By separating the media into themes such as technology and the future, war/apocalypse/disaster, violence in society, gender and sexuality, and human relations, understands the Japanese culture (and social consciousness) more intimately. Students view films, read scholarly articles on the subject matter, and actively participate in the course through written papers and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed for only JPN 115 or 194 (Japanese Popular Culture: Anime, Manga, and Film)
JPN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	201	Second-Year Japanese I	Continued development in speaking, listening, reading, writing, culture, and computer skills. 74 additional kanji. Introduction to kanji dictionary.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 102 with C or better; Students with credit for JPN 202, 309, 310, 311, 312, 313, 314, or 321 may not enroll in JPN 201 OR Visiting University Student
JPN	202	Second-Year Japanese II	Continued development of JPN 201 skills. 116 additional kanji. Communication skills goal: ACTFL Guideline Intermediate-Low to Intermediate-Mid.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 201 with C or better OR Visiting University Student
JPN	206	Japanese Calligraphy	Introduces Japanese calligraphy using traditional implements, starting with basic brush strokes and stroke order for kanji and kana.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
JPN	210	Intensive Japanese II	Second semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): JPN 102 with B or better or JPN 110 with C or better; Credit is allowed for only JPN 201 or JPN 202 or JPN 210
JPN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	301	Third-Year Japanese I	Development of reading skills, using authentic materials to comprehend structure, grammar, idioms, and culture. Expansion of kanji and vocabulary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	302	Third-Year Japanese II	Continued development of reading skills, as in JPN 301. Reading proficiency goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 301 with C or better OR Visiting University Student
JPN	309	Japanese Oral Communication I	Development of interpersonal, interpretive, and presentational oral/aural skills in familiar topics with sociolinguistic skills and understanding of Japanese culture. JPN 309 and 310 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	310	Japanese Oral Communication II	Continued development of oral/aural skills, with increased emphasis on honorifics. Speaking proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 309 with C or better
JPN	311	Japanese Composition I	Learning structural guidelines for narrative writing, developing organization skills to support ideas. Writing proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better

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JPN	315	Lang of Japanese Pop Culture	Develops reading and listening skills using Japanese popular culture materials of various genres, including narratives, comics, anime, film and music. Introduces linguistic elements that are not found in regular language textbooks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or JPN 210 with C or better; Credit is allowed for only JPN 315 or JPN 394 (The Language of Japanese Popular Culture I)
JPN	316	Lang Japanese Popul Culture II	Understands Japanese popular culture materials such as anime, music, movies, manga and narratives through their target language of Japanese. Emphasized language areas are honorifics, formal expressions, dialects and slang and vulgar expressions that are tolerable in the classroom environment. Introduces elements of the history, geography and culture of Japan to further students' understanding of the materials. Students improve their receptive skills, i.e., listening and reading, by engaging with these materials, and through the technique of shadowing, also improve their pronunciation, intonation and grammatical accuracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre- or corequisite(s): JPN 301 with C or better if completed; Credit is allowed for only JPN 316 or JPN 394 (The Language of Japanese Popular Culture II)
JPN	333	Japanese Civilization	Provides an overview of the entire sweep of Japanese history and culture from the earliest inhabitants of the Japanese archipelago, circa 30,000 BCE, to the earthquake and tsunami of March 2011 and beyond. Covers the main events, narratives, and individuals of Japanese history through documentary sources and literary works such as plays, novels, poetry and manga.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only JPN 333 or JPN 394 (Japanese Civilization) or SLC 394 (Japanese Civilization)
JPN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	401	Reading Modern Japanese Texts	Readings in modern literary and expository texts. Focus varies from year to year.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): JPN 302 with C or better; SLC 202 with C or better OR Visiting University Student
JPN	414	Intro to Classical Japanese	Readings from various genres of pre-20th-century literature, with analysis of the structure of the classical language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better OR Visiting University Student
JPN	415	Advanced Classical Japanese	Close readings of selected premodern texts, with focus on grammatical and stylistic features.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 414 with C or better
JPN	445	Readings in Modern Japanese	Advanced study of selected facets of modern Japanese letters and culture, including literature, material and visual culture, film, and other media.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 401 with C or better; SLC 202 with C or better; Credit is allowed for only JPN 445 or JPN 535
JPN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
JPN	485	Japanese Lit & Art of Translat	Examines the theory and practice of literary translation with two-fold aims: first, to analyze the ways in which translation has been theorized and practiced in a variety of historical contexts; second, to provide a space in which to discuss, experiment with, and polish original translations of Japanese-language texts in a wide range of written and visual forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better; Credit is allowed for only JPN 485 or JPN 585 OR Visiting University Student
JPN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
JPN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
JPN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
JPN	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
JPN	585	Adv Problems of Translation	Theories and practice of translation; strategies for handling a variety of Japanese texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only JPN 485 or 585
JPN	586	History of Japanology	Provides students at the MA level with a deep understanding of the history of Japanese studies in the United States, Japan and Europe; the key issues and debates that have characterized the study of Japan from the eighteenth century to the present; and the methodological approaches employed in the professional study of Japanese literature and culture. Centers on the close reading and discussion of a range of primary and secondary sources (in English and Japanese) dealing with central issues in the development of Japan studies. In addition to pursuing independent research, students are expected to make regular presentations summarizing the main points in each week's readings. The course presumes that participants have the equivalent of 3+ years of college-level Japanese language study and a B.A. (or equivalent) in Japanese literature, language and/or culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JST	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
JST	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
JST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
JST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211

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JST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
JST	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
JST	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
JST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
JST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
JST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student
JST	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
JST	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST or REL 315 OR Visiting University Student
JST	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): minimum 45 hours. Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 or HEB 394 (Literary Readings of the Bible)
JST	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375

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JST	346	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
JST	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
JST	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
JST	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
JST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
JST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
JST	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student

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JST	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
JST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
JST	490	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
JST	491	History of Antisemitism	Antisemitism means hostility, negative perceptions and persecution of Jews. Examines the evolution of antisemitism in the West from antiquity to modern times. Explains the history of antisemitism by looking at the interplay of religious, economic, cultural and political factors. Gives special attention to the origins of Christianity, the place of Judaism in Christian self-understanding, the power struggle between popes and emperors during the Middle Ages, the involvement of Jews in money lending, the alliance between the Jews and the secular princes, the rise of modern nationalism, and the place of racism in the politics of modern nation states. With a better understanding of the history of antisemitism, ponders the differences and similarities between premodern anti-Judaism and modern antisemitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
JST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
JST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student
JST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	495	Judaism, Science & World Rel	Studies the correlation between science and religion as an interdisciplinary study from a historical perspective. Session topics fall into three distinct units. The first correlates the physical sciences with Western religious theology; the second explores the consequences of the life sciences on religious psychology; and the third examines the impact of the interconnection between sciences and religions in society. Each unit is studied through specific readings, film, lectures, and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours
JST	496	Biblical Narratives	Presents different trends in synchronic approaches applied to the Bible such as narrative criticism, semiotics, reader-response criticism, and situates them both in the postmodern cultural context and in the history of biblical exegesis. Explores various literary devices in biblical narratives, such as repetition, type-scenes, characterization, the change of points of view, the use of metaphors. Studies each technique on particular biblical texts, literally translated into English, with a special emphasis on how these techniques guide the interpretation and create meaning. Questions the significance of literary approaches for religious or ideological texts, such as the Hebrew Bible. Also considers criticisms raised against these approaches, assesses their limits, and envisions their future.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours

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JST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		
JST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JUS	105	Intro to Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for freshmen and sophomores.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 105 or 305 OR Visiting University Student
JUS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisites: Must have less than or equal to 25 earned hours
JUS	200	Topics/Concepts/Issues/Justice	Uses critical thinking skills to analyze and comprehend controversial social issues (e.g., abortion, affirmative action, capital punishment, the flat tax, and immigration).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	207	Homicide and Serial Killers	Explores the scholarship, research and rational analysis of the mass, spree and serial killer. It will examine some of the causes and underpinnings of these killers within the U.S. as well as the major theories and understandings of this phenomenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
JUS	214	The Pursuit of Justice	Introduces a wide variety of institutions and organizations—locally, nationally and internationally—that seek justice. Provides an understanding of the many ways justice is institutionalized in modern societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
JUS	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
JUS	222	Drugs and Justice	Provides an historical overview of the development and circulation of certain drugs; explores the more specific effects of drug use and abuse in everyday life; and examines the efforts by governments to both restrict/end and facilitate/expand the drug trade.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 200 (Drugs and Justice) or 222
JUS	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 or SST 294 (Disability Justice and Advocacy) OR Visiting University Student
JUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
JUS	300	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
JUS	301	Research in Justice Studies	Focuses on developing and evaluating research designs, data collection, and the relationship between validity and reliability. Stresses methods for conducting research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	302	Statistical AnalysisJusStd	Concepts and application of descriptive and inferential statistics, including linear regression, for justice studies research..	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170, or approved MA General Studies course with C or better; minimum 24 hours OR Visiting University Student
JUS	303	Justice Theory	Examines classic and contemporary philosophies and theories of justice, including legal, social, and criminal justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student

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JUS	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304
JUS	305	Principles of Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for juniors and seniors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 105 or JUS 305 OR Visiting University Student
JUS	308	Courts and Society	History and development of courts. Relationship between dispute resolution mechanisms and cultural/social structure/processes in which they are embedded.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
JUS	320	Community and Social Justice	Discusses and analyzes definitions of community; impact of environment on behavior; promises of community organization for local empowerment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	321	Wealth Distribution & Poverty	Examines wealth and income distribution in the United States and analyzes ideological and political forces producing an increasingly unequal society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	323	Justice&Develop, Welfare State	Provides a comprehensive overview of the development of social welfare and relevant issues pertaining to social justice. Introduces upper-division students to different ideas about the meaning of social welfare in the context of the development of the U.S. welfare state.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
JUS	326	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
JUS	329	Domestic Violence	Critical inquiry into the legal, historical, theoretical, comparative, and treatment literatures on domestic violence; application of contemporary justice and social change theories to research how society defines and organizes against domestic violence. May include consideration of intimate partner abuse, child abuse and neglect, and gender violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student
JUS	332	Politics Energy Policy&Justice	Examines the social and political dimensions that shape energy and environmental policy. Focuses primarily on the U.S. Introduces elements of regional or global policy where they influence or shape domestic politics and policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours

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JUS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334
JUS	335	Organized Crime	Critical inquiry into organized crime and its illegal activities; analysis and application of contemporary theories; analysis of strategies for reducing the prevalence and power of organized crime in the U.S. and other nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345
JUS	347	Immigration Education & Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
JUS	350	Immigration and Justice	Examines immigration policy, history of immigration, refugee issues, labor force participation, gender, family, children, social networks, and transnationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	352	Global Politics of HumanRights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
JUS	353	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
JUS	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
JUS	360	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	365	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
JUS	370	Cultural Diversity and Justice	Analyzes how cultural diversity challenges and broadens conventional understanding of justice. Examines how cultural beliefs and practices come into conflicts with public law and policy. Assesses the U.S.'s performance on incorporating cultural diversity in its social institutions including education, media, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student

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JUS	371	Sexuality and Social Justice	Theoretical and case-study based examination of how people, either alone, in groups, as members of an organization or participants in a social movement, seek to change the meaning, representation and regulation of sexuality. Analysis and practice of skills, strategies and tactics associated with the pursuit of "sexuality justice" by advocates within social movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 371 or JUS 394 (Sexuality and Social Justice)
JUS	374	Holocaust,Genocide&HumanRights	Explores the psychological, social, historical, and political dimensions of the Holocaust and the phenomenon of genocide. Also examines the more recent international cases of genocide along with a discussion and analysis of the Universal Declaration of Human Rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	375	Justice and the Mass Media	Analysis of the impact of mass media and popular culture on social justice issues, including criminal justice. Critical inquiry into portrayals of gender, race, culture and class in mass media and other forms of popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	377	AZ Immigration,Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
JUS	382	Justice and Pop Culture	Explores the connections between the production, reproduction, and consumption of popular culture and the resultant impact on issues of justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	385	Justice and Everyday Life	Justice and injustice in everyday life and how small things can become legal issues. Role of language and interaction in social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	405	Inequality, Economy & Justice	Addresses economic issues and justice implications, including the interplay among economic conditions, race-ethnicity, class, and gender worldwide.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	408	Comparative Develop of Welfare	Embodies a multidisciplinary perspective on welfare issues and exposes students to different ideas about justice beyond the United States. Allows them to better understand how and why states organize and deliver justice in different ways. Exposes students to cross-national variation in how history, culture, politics, and economics have shaped the development and content of different types of welfare states. Engages theoretical perspectives from political sociology and political economy concerning the emergence and future fate of these welfare states. Analyzes comparative analysis of three distinctive types of welfare states; Liberal, Conservative, and Social Democratic Welfare States, with particular emphasis on their varying capacity to combine economic efficiency with social justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	410	Punishment: Logic and Approach	Analyzes forms of punishment, how and why they have changed. Areas include philosophy, history, and social structure of punishment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	420	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
JUS	421	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
JUS	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422

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JUS	424	Ethics and Alternative Tourism	Cultural processes related to alternative tourism and their impact on both the tourist and local. Travel, tourism, globalization, development, human rights and the commodification of people and places. Topics include issues pertaining to Western tourism, commodification, race/class/gender and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 424 or JUS 494 (Sex, Drugs and Death)
JUS	425	Race, Gender, and Justice	Critically examines major theories, research findings, policies, and controversies concerning race, ethnicity, gender, and crime.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	427	Identity and Justice	Theory of symbolic interaction which provides a vocabulary, observational methodology (i.e., dramaturgy) and a set of grounding concepts that allow students to explore identity in its everyday practices. Explores the transformation and emergence of identities in public discursive spaces and the political impact of identity as it is deployed (invoked) and interpreted (imputed) among interactants in the social world. Establishes the position that identity operates as a central constitutive function in the construction of meaning and, subsequently, our ideas and attitudes about justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 36 hours; Credit is allowed for only JUS 427 or JUS 494 (Identity & Justice)
JUS	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
JUS	430	Soc Protest/Conflict & Change	Analyzes historical and contemporary protest movements advocating equality based on race, gender, and sexual orientation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
JUS	435	Cinema and Justice	Tracks the conceptualizations of justice that have been and are currently conveyed in film, including but not limited to the relationship between crime and various notions of justice. Other depictions include social issues such as gender, race, or economics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	437	Disability and Justice	Examines the construction of disability as a social, cultural and political phenomenon. Dominant understandings of disability typically use narrow medical and therapeutic explanations and thus disabled individuals often are defined as deviant, stigmatized, incompetent and marginal. Disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, this class examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 437 or JUS 494 (The Social Construction of Disability)
JUS	438	Human Diff.Dilemmas of Justice	General examination of democracy and human differences that expands into in-depth investigations of (1) racial difference and identity politics; (2) gender and sexual difference in democracy; and (3) cultural difference and the multiculturalism debate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	440	PrisonsPower&Punishment	Examines the history and logics of a "U.S. Penal Democracy," tracing how prisons became the preferred and accepted choice for punishment. Traces how the practices, policies and rationalizations of punishment (physical, psychological and social) have been at the center of U.S. politics beginning in the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 440 or JUS 494 (Prisons, Power and the Punishments of History)
JUS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
JUS	445	Surveillance and Society	Explore how surveillance technologies alter social life; the complex ways that they interact to produce security, fear, control, and/or vulnerability.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours

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JUS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
JUS	460	Feminism and Justice	Explores feminist thought and critiques traditional political theories. Examines issues of racism, sexuality, and the law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	463	Discretionary Justice	Use/abuse, key issues/manifestations of discretion in legal system and other societal institutions. Theoretical/empirical linkages between discretion and discrimination, based on race, ethnicity, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	465	Death Penalty in the U. S.	Focuses on capital punishment in the United States; explores negotiation of law, politics, morality, public policy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	467	Terrorism, War, and Justice	Examines the relationship among terrorism, war, and justice. Analyzes terrorism within the larger study of deviance and social control, comparative politics, hegemony, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	468	Protest, Justice, Law & Media	Examines research on protests, political deviance, trials/law and justice, and critiques some of the media representations of related ideas. Investigates global social movements, political protests and nascent political trials. Analyzes varied justifications for defining action as diversity, deviance or crime and the reasons for using criminal, civil or alternative (positive) sanctions (especially via indigenous peoples). Explores the encompassing meaning of a political trial. Many people throughout the world find everyday life to be a trial, especially those placed on the margins of globalization. Expands the research on media and trials that usually have been examined narrowly by legal institutions in North America and reinforced by hegemony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 468 or JUS 494 (Protest, Justice and the Media)
JUS	469	Political Deviance and the Law	Examines the controversies created by political and deviant behavior, including a critical view of law as an agent of social control.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	470	Alternative Dispute Resolution	Critical examination of the tenets of alternative dispute resolution movement; exposure to the programs of ADR, including community and court based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	475	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
JUS	477	Youth and Justice	Critical examination of youth-related justice issues, including economic justice, violence against youth, delinquency, and the juvenile justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
JUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student

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JUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
JUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
JUS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Social and Cultural Pedagogy MA student, Justice Studies MS or PHD student
JUS	501	Justice Theory	Theories and philosophies of social, economic, political, and criminal justice. Applies theories to contemporary justice issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	509	Stat Problems/Justice Research	Methodological problems of research design and statistical methods specific to justice studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	521	Qualitative Data Anlys & Eval	Analyzes qualitative data, e.g., field notes, in-depth interview transcripts, document analysis, coding, and retrieval with a microcomputer; qualitative evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	530	Policy, Advocacy & Disability	Graduate seminar focuses on social policy and critical advocacy as it relates to disability culture and rights. Focuses on state, national and international discourses around disability-related policies, rights, social movements and advocacy/activism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only JUS 530 or JUS 598 (Policy, Advocacy and Disability) or JUS 598 (Social Policy and Critical Advocacy)
JUS	542	American Indian Justice	Provides a broad overview of American Indian and Alaskan Native issues of justice and injustice in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	550	Gender, Race, & Economic Justice	Provides a critical social scientific perspective on economic issues particularly as they relate to gender, race, and class equality. Examines issues of economic inequalities as they are distributed along the lines of gender and race. Components converge to identify the social justice ramifications of economic policy and economic conditions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	555	Migration/Immigration & Justice	Explores the causes and consequences of immigration to the United States and the incorporation of immigrants into the American economy and society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	560	Women, Law, and Social Control	Gender issues in the exercise of formal and informal mechanisms of social control, including economic, social, legal factors, both violent and nonviolent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	565	Crit./Comp. Issues: Disability	Examines the construction of disability as a social, cultural and political phenomenon. Focuses on how disability is defined and represented in society as well as the implications/consequences of such definitions. Hegemonic understandings of disability typically have employed narrow medical and therapeutic explanations. From such deterministic perspectives, the disabled individual often has been defined as deviant, stigmatized, incompetent and marginal. This class rejects the perception of disability as a functional impairment that limits a person's activities. Instead, disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 565 or JUS 598 (The Social Construction of Disability)
JUS	575	Race, Gender, and the Law	Explores the law and social sciences literature on race, ethnicity, gender, and the legal order. Critically assesses the major contemporary theoretical and policy debates and controversies in the field from a variety of disciplinary and interdisciplinary lenses, setting these debates in their historical contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JUS	588	Justice and the Mass Media	Analyzes the nature and impact of mass media messages about justice concerns for social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	610	Law and the Social Sciences	Analyzes the theoretical grounds underlying diverse studies of law and society; creation and administration of law; and jurisprudence and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	620	Justice Research Methodology	Covers the epistemology of knowledge and method in justice research, history, and philosophy of social science and critical inquiry, as well as perspectives that link these concerns to research strategies. Explores the strengths and weaknesses of introduced methodologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 500 with C or better
JUS	630	Data Analysis for Justice Rsch	Bivariate and multivariate techniques of data analysis and hypothesis testing for justice-related research and use of information and statistical programs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 509 with C or better
JUS	633	Community Research	Focuses on epistemology, methodology, and the production of knowledge about community and seeks to link theory, methodology, specific research strategies, and social criticism about the conduct of community research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	640	Theoretical Perspect/Justice	Analyzes philosophical perspectives of justice; linkages between social science theory and justice constructs; application of justice to social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 501 with C or better
JUS	650	Adv Qualitative Data Analysis	Advanced qualitative data collection and analysis techniques, including ethnography, in-depth interviews, field notes, coding, transcribing, content analysis, textual analysis.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	651	Theorizing Sexuality&Soc Just	Examines the intellectual development of "sexuality" knowledge across disciplines; analyzes the regulation of sexuality through social policy and cultural norms; case studies of how social movements counter normative definitions of sexuality and work toward their vision of "sexuality justice."	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 591 (Sexuality and Social Justice) or JUS 651 or JUS 691 (Sexuality and Social Justice)

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JUS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
JUS	660	Globalization&Economic Justice	Explores the political economy of globalization from a theoretical as well as practical standpoint. Sources used come from a variety of disciplines--sociology, political science, international relations, geography, and economics--all of which contribute unique theoretical and normative tools for analyzing the effect of global forces on economic justice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Graduate student
JUS	669	Political Trials/Indigenous Ju	Focuses upon research on political trials, deviance, and conceptions of indigenous and contemporary justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
KIN	101	Introduction to Kinesiology	Introduces the disciplines and professions associated with kinesiology, including an overview of historical and philosophical foundations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
KIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	290	Intro Evidence-Based Practice	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the health and health care professions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): College of Health Solutions major; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321 with C or better; Credit is allowed for only KIN 290 or NTR 290 OR Visiting University Student
KIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	310	Collegiate Sports	Participation in men's or women's intercollegiate competition. May be repeated for 4 hours 1 per year. Y/E grade.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		

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KIN	334	Functional Anatomy/Kinesiology	Muscles, bones, joints, and nerves and how they produce movement. Emphasizes muscle origins, insertions, actions, and innervations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR Visiting University Student
KIN	335	Biomechanics	Basic anatomical and mechanical principles applied to human movement. Emphasizes kinematic and kinetic concepts.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; PHY 111 with C or better; MAT 170, 210, 251, 270, 271, or 272 with C or better OR Visiting University Student
KIN	340	Physiology of Exercise	Physiological mechanisms of acute responses and chronic adaptations to exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; CHM 101, 113, 114, 115, 116, 117, or 118 with C or better OR Visiting University Student
KIN	345	Motor & Developmental Learning	Principles of motor skill acquisition across the life span, focusing on the learner and the learning environment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better; BIO 201 with C or better OR Visiting University Student
KIN	348	Psych Skills for Optimal Perf	Applies psychological techniques and their use to improve effectiveness and performance in sport and related areas.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 101; PSY 101 OR Visiting University Student
KIN	352	Psychosocial Aspects/Phys Act	Interrelationships between physical activity and psychosocial variables, including socialization, cultural values, aggression, and motivation. Includes the psychological benefits of physical activity and exercise adherence.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C	Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better OR Visiting University Student
KIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
KIN	412	Biomechanics/Skeletal System	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discussion of injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 with C or better; Credit is allowed for only KIN 412 or KIN 512 OR Visiting University Student
KIN	413	Qualitative Analy/Sport Biomec	Develops systematic approach for detecting and correcting errors in human performance using anatomical and mechanical principles.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 (EPE 335) with C or better
KIN	414	Electromyographic Kinesiology	Muscular contributions to human movement, muscle mechanics, electrophysiological basis, and practical application of electromyography.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 335 (EPE 335 or PED 335) with C or better; KIN 340 (EPE 340 or PED 340) with C or better
KIN	415	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 330 or KIN 334; Credit is allowed for only KIN 415 or KIN 515 or KIN 494 (Theory of Corrective Exercise) OR Visiting University Student
KIN	418	Experimental Neuromechanics	Students experience different quantitative techniques to analyze human movement from a motor control and biomechanical perspective.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 290; KIN 335; KIN 345; Credit is allowed for only KIN 418 or KIN 494 (Experimental Neuromechanics)
KIN	421	Human Motor Control	Focuses on understanding how the human central nervous system controls, regulates, and learns movements.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 345 (EPE 345) with C or better
KIN	422	Motor Control/Spcl Populations	Discusses principles of motor control theories and related practical applications for certain special developmental populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 345 (EPE 345) with C or better OR Visiting University Student
KIN	423	Motor Control and Aging	Functional and behavioral changes to the motor control system as humans age, how specifically it impacts motor control and learning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 345 (EPE 345) with C or better
KIN	424	Neural Aspects Move & Rehab	Provides an in-depth understanding of how the nervous system controls movement. Students gain insight into how the enormous repertoire of human movements (e.g., gait, posture, voluntary hand movements) is controlled by a distributed motor system (e.g., spinal cord, basal ganglia, motor cortex); how pathology to the system alters movements; and how rehabilitative approaches address these pathologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 345; Credit is allowed for only KIN 424 or KIN 494 (Neural Aspects of Movement and Rehabilitation) OR Visiting University Student

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KIN	437	Biomechanics and Motor Control	Guides students to critically evaluate how the physical and mechanical properties of organisms and their environment affect biological tissues, structures, and motor control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 181 with C or better; MAT 170 with C or better; PHY 111 with C or better; Credit is allowed for only BIO 537 or KIN 437 or KIN 537 or KIN 494/598 (Comparative Biomechanics and Motor Control)
KIN	440	Exercise Biochemistry	Study of bioenergetics and metabolism of cellular (skeletal muscle, heart, and liver) organelles and proteins during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 440 or 532
KIN	441	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 340 with C or better; Credit is allowed for only KIN 441 or 531 OR Visiting University Student
KIN	442	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 442 or KIN 536 OR Visiting University Student
KIN	443	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 340 with C or better; Credit is allowed for only KIN 443 or KIN 533
KIN	444	Metabolic Adaptations/Exercise	Examines physiologic adaptations to exercise training as they relate to metabolism and tissue functions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Visiting University Student
KIN	446	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)
KIN	447	ECG Interpretation	Using ECG data, this course comprehensively investigates cardiac arrhythmias and interactions with therapeutic drugs and exercise.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 447 or KIN 547 OR Visiting University Student
KIN	450	Biopsychosocial Perspectives	Uses a biopsychosocial perspective to examine the interrelationships on physical activity and health (physical and mental).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 352 (EPE 352) with C or better
KIN	452	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 352 (EPE 352 or PED 352) with C or better; Credit is allowed for only KIN 452 or 522
KIN	454	Motivational Theory Exe/Health	Assesses motivational theories relevant to the field of exercise and health psychology. Evaluates research and utilizes the findings to create applied public service announcements targeted toward a specific health issue (e.g., exercise, nutrition, smoking) and a specific population. Assesses students on four group public service announcements and "mini exams" for each unit. Taught in class, online and in a hybrid format.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 352 with C or better; Credit is allowed for only KIN 454 or KIN 494 (Motivational Theory in Exercise & Health)
KIN	460	Theory of Strength Training	Research and theories on developing muscular strength; programs for developing muscular strength.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 340 (EPE 340 or PED 340) with C or better OR Visiting University Student
KIN	465	Muscle Physiology	Discusses the cellular and systems physiology of the skeletal and cardiac muscle systems, as well as presents research on the effects of exercise on skeletal muscle function and adaptation. Describes and recognizes the detailed structure, composition and biochemical properties of skeletal muscle. Applies knowledge of ultrastructure, microanatomy and biochemical properties of skeletal muscle to factors influencing its form and function. Describes the factors that affect muscle adaptation. Applies knowledge of muscle gene expression to the heterogeneity of metabolic and molecular responses to skeletal muscle. Compares and contrasts differences among skeletal, smooth and cardiac muscle fiber types. Interprets and analyzes current research findings and applies these concepts to endurance and strength training adaptations. Develops an understanding of many of the molecular signaling pathways regulating muscle adaptation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340 with C or better; Credit is allowed for only KIN 465 or KIN 494 (Muscle Physiology) or KIN 598 (Muscle Physiology) OR Visiting University Student

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KIN	466	Cardiovascular Exercise Phys	Examines varying concepts related to cardiovascular exercise physiology. Covers the basics of the cardiovascular system, how the system works both at rest and during exercise, and how it responds to exercise training. Evaluates research and utilizes the findings to enhance learning of course topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 466 or KIN 494 (Cardiovascular Exercise Physiology) OR Visiting University Student
KIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; Corequisite(s): junior or senior standing
KIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
KIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
KIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): minimum 25 hours OR Visiting University Student
KIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
KIN	512	Biomechanics/the Skeletal Syst	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discusses injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 412 or 512
KIN	515	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only KIN 415 or KIN 515
KIN	520	Applied Sport Psychology	Psychological theories and techniques applied to a sport to enhance the performance and personal growth of athletes and coaches.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 448 or 520
KIN	522	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 452 or 522
KIN	523	Motor Control and Aging	Focuses on the functional and behavioral changes to the motor system as humans age and how specifically it impacts motor control and learning.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	530	Exercise Physiology	Immediate and long-term adaptations to exercise with special reference to training and the role of exercise in cardiovascular health.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	531	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 441 or 531
KIN	532	Exercise Biochemistry	Understanding the basic biochemical principles and enzyme pathways involved in energy transduction during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 440 or 532
KIN	533	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 443 or 533
KIN	536	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 442 or 536

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KIN	540	Adv Biomch of Human Motion	Describes human movement using biomechanical principles. Uses and combines prerequisite knowledge describing the structure and function of the musculoskeletal system to solve kinematic and kinetic problems in both static and dynamic conditions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 512
KIN	545	Movement Assessment and Eval	Students perform different laboratory and clinical techniques to analyze human movement for biomechanical applications. Delivered as two components: lecture and laboratory. The lecture component serves to discuss the theory behind quantitative analysis techniques, proper equipment usage, data processing techniques and the connection to biomechanical principles. During the laboratory component students gain hands-on experience with the equipment by performing assigned experiments and clinical assessments. Follows with practice in analyzing, reporting, interpreting and presenting data. Additionally, students make recommendations and assign exercises to correct impaired movement when appropriate.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515
KIN	547	ECG Interpretation	Comprehensive investigation of the heart rhythm disturbances that occur within the chambers and conducting tissue of the heart. Partitioned into three sections allowing the systematic review of arrhythmias that occur in the atria, AV junction and ventricles of the heart. The material is designed to maximize understanding by analyzing electrocardiogram rhythm strips to reinforce applying the theoretical component of the course. Also uses the application of these theories through laboratory experiences allowing hands-on experience with electrode placement and 12 lead ECG interpretations.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Clinical Exercise Physiology MS or Exercise and Wellness MS student; Credit is allowed for only KIN 447 or KIN 547 or KIN 598 (ECG Interpretation)
KIN	550	Clinical Appl in Biomch	Hands-on experience utilizing clinical techniques and equipment to analyze human movement for biomechanical applications. Uses the student biomechanics laboratory as a simulated clinic environment where volunteers may participate as clients for students to gain experience with clinically relevant biomechanical assessments. Additionally, requires students to showcase successful interpersonal skills to be able to work with a variety of individuals (clients, peers and supervisors) and show an ability to think critically and pay attention to details.	N	LAB	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515; KIN 540; KIN 545
KIN	552	Appl Research Methods Biomch	Develops research skills and gains further experience working in a biomechanics research environment. Assigns a variety of projects to facilitate the student's skill development for biomechanics research such as utilizing modeling applications with related computer processes, inverse kinematics calculations and motion tracking techniques.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500; EXW 501; KIN 540; KIN 545
KIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KOR	101	First-Year Korean I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills, including Han'gul. Lecture, recitation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
KOR	102	First-Year Korean II	Continuation of KOR 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): KOR 101 with C or better OR Visiting University Student
KOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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KOR	201	Second-Year Korean I	Continual development of communication skills. Increased emphasis on reading and writing, vocabulary building, and review of fundamentals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 102 with C or better OR Visiting University Student
KOR	202	Second-Year Korean II	Continuation of KOR 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 201 with C or better
KOR	250	Korean Culture and Society	Surveys Korean culture and society, covering history, religious traditions, gender, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
KOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	313	Third-Year Korean I	Continued development of ability to communicate orally and in writing. Exposure to a variety of Korean written styles.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): KOR 202 OR Visiting University Student
KOR	314	Third-Year Korean II	Continuation of KOR 313.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: KOR 313
KOR	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321
KOR	347	Korean Film and Literature	Introduces aspects of Korean history, culture, and society through Korean film and literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
KOR	350	Women of Korea	Examines the changing role and status of women in modern Korea in relation to political and cultural changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	
KOR	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieus. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
KOR	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)
KOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	401	Advanced Korean I	Offers students the opportunity to acquire advanced levels of vocabulary, reading proficiency and writing ability for an academic or professional purpose. Also helps students prepare for the TOPIK (Test of Proficiency in Korean). Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean. Students can take this course in conjunction with other Korean three-hundred level language courses upon instructor approval.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 314 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes I)
KOR	402	Advanced Korean II	Constitutes the second of two semesters of study of fourth-year Korean. Offers the opportunity to acquire advanced levels of vocabulary, reading proficiency, and writing ability for an academic or professional purpose. Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 401 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes II)

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KOR	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 491 (Asian Popular Culture) OR SLC 494 (Asian Popular Culture) OR Visiting University Student
KOR	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student
KOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
KOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
KOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
KOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
KOR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LAA	345	Professional Practice Seminar	Landscape architecture practice including contracts, project and office management, liability, licensing, and professional development.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Pre-requisites: Landscape Architecture student; Co-requisite: LDE 362
LAP	231	Intro to Apps for Designers	Fundamentals of professional computer operation for designers including basic system usage, introduction of software packages focused on the design of sustainable environments, and utilizing computers to assist in environmental analysis and analytic decision making. Software packages include Microsoft Office, Adobe multimedia and creativity products, Esri ArcGIS geographic information systems (GIS), Autodesk AutoCAD computer aided design/drafting (CAD), and Trimble SketchUp 3D modeling software.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BS major; Corequisite(s): LDE 261 OR non-Landscape Architecture major with sophomore standing OR Visiting University Student
LAP	254	Plant Materials	Plants as landscape architectural elements. Emphasizes plant identification and the uses of particular plants in landscape architecture.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Design Studies minor; ALA 102 OR Environmental Design BS major; EDS 223 OR Landscape Studies minor; ALA 102 OR Corequisite(s): Landscape Architecture BSLA major; LDE 262
LAP	332	GIS Application in Environ Dgn	Addresses fundamentals of geographic information systems (GIS), especially as they relate to applications by environmental planners and designers (including architects, landscape architects, urban designers and related professionals). Focuses on using GIS as tools. Explores the techniques and procedures for acquiring, displaying, editing, analyzing and modeling spatial information.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; ALA 235 or LAP 231; minimum junior standing OR Visiting University Student
LAP	352	Ecosystems&Sustainable Design	Increases awareness and understanding of the biotic and abiotic systems, processes and factors of our biosphere in order to facilitate sustainable landscape architectural design and applications.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design major; LAP 254 OR Landscape Studies minor; LAP 254 OR Design Studies minor; LAP 254 OR Corequisite(s): Landscape Architecture major; LDE 361 OR Visiting University Student

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LAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Landscape Architecture BS/BA major; Pre- or corequisite(s): LDE 361
LAP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
LAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
LAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student
LAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		Prerequisite(s): Landscape Architecture BS/BA major or Landscape Studies minor; minimum junior standing
LAP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	585	International Field Studies	Organized field study in specified international locations.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only GCU 485 or 586 or GPH 485 or 585 or LAP 485 or 585 or POR 485 or PUP 485 or 585
LAP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	205	Deep Roots: Latin America	Introduces the diversity of Latin-American traditions through its cultural production. The approach is interdisciplinary (art, architecture, literature, film, theater, business and anthropology). Studies the history and culture of Latin America and its concept of identity and nation through a variety of genres. Focuses on aspects that reveal the complexity of Latin America and in turn provides insights into Latin American culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
LAS	206	Locating Lat America/Methods	Methodologies course designed to provide exposure to academic fields and research approaches that intersect in Latin American studies	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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LAS	330	From the Inside/Lat Am Journey	Journeys through a wide variety of genres and critical scholarship in Spanish. Provides a broad exposure to different types of reading and writing. Because the Latin American Studies program is flexible, students must be able to engage with many different types of texts across disciplines. Covers Latin American cultural history from pre-Colombian to the post-modern by exploring different formats and genres around major central themes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): SPA 313 and 314 with C or better OR SPA 315 and 316 with C or better OR SPA 325 with C or better OR Visiting University Student
LAS	340	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341
LAS	350	Construction of a Nation:Chile	Examines Chilean history, politics and cultural production through its historical development and explores a multiplicity of cultural issues. Develops knowledge and appreciation of cultural and visual production of Chile and Latin America as well as acquired skills for critically analyzing texts in their applicability to modern-day society. Considers the variety of cultural and artistic productions (novel, poetry, short story, film, music, pop culture, presidential speeches) as sources of social commentary in which observations of national identities are constructed.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; Credit is allowed for only LAS 350, ENG 494 (Construction/Nation:Chile in the 20th/21st Cen) or SPA 494 (Construction/Nation:Chile in the 20th/21st Cen)
LAS	351	Cityscapes: Urban Mexican Lit	Examines major developments in contemporary Mexican literature. Begins at mid-20th century as the novel turns away from the rural novel of the Revolution, toward a more urban setting. Mexico City serves as a cultural and political center, and the novels mark social and political changes across different literary currents.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	355	Contemporary Mexican Cinema	Examines major themes and auteurs in contemporary film as their work intersects with larger cultural phenomena, expanding students' cultural knowledge as well as critical communication skills.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
LAS	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
LAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Álvaro Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
LAS	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419

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LAS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest)
LAS	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
LAS	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 441 or LAS 441
LAS	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
LAS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
LAS	471	Treaties/Cultural Production	Emphasizes sociocultural values associated with national, transborder and transatlantic identities providing a panoramic view of treaties, agreements, constitutions and cultural production by Americans and Spaniards from 1812 to 2012 with particular focus on the themes of nations, borders, citizenship and identity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
LAS	480	New Media/Theatre:Lat Am/Spain	Overview of the transatlantic cultural interrelationships between Latin American and Spanish theatre and performance in the 20th and 21st centuries. Explores topics such as cyber-theatre, Internet theatre and multimedia theatre.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
LAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
LAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student

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LAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	
LAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
LAT	101	Elementary Latin	Basic Latin grammar with an emphasis on developing reading skills. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
LAT	102	Elementary Latin	Continuation of LAT 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: LAT 101
LAT	140	Grk&Lat Roots Bioscfc Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
LAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	201	Intermediate Latin I	Final semester of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisite(s): LAT 102 OR Visiting University Student
LAT	202	Intermediate Latin II	Beginning reading of Latin authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisites: LAT 201
LAT	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)
LAT	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
LAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	301	Roman Authors	Intermediate Latin reading class that introduces Roman prose authors such as Livy, Cicero and Pliny and explores the variety of genres within Latin prose, such as historical accounts, personal letters and political oratory.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better; Credit is allowed for only LAT 301 or LAT 394 (Introduction to Latin Authors)
LAT	322	Medieval Latin	Surveys Late Antique and medieval Latin authors and texts, both prose and poetry. Some review of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better
LAT	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
LAT	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
LAT	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
LAT	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373

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LAT	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
LAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	421	Roman Literature	Readings in the Latin masterpieces. Authors read change each year in accordance with needs of the class. May be repeated for credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): LAT 202 OR Visiting University Student
LAT	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
LAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
LAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
LAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
LAT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	210	Intro to American Legal System	Introduces the American legal system and an overview of laws that impact business in the United States. Initially examines the questions: What is law? What is the source, nature, and scope of laws; and how is law shaped by our culture and political institutions? How is the American legal system structured and operated? The majority of substantive content examines the role of law in business.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum sophomore standing OR Visiting University Student
LAW	310	The Global Legal Community	Introduces the building blocks of the developing "global legal community," global governance institutions, both public and private, international law and transnational legal regimes. Examines how dynamic area of law is influenced by, and influences the conduct of the international and domestic relations.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only LAW 310 or 394 (The Global Legal Community)
LAW	315	American Business Law	Explores the foundations of American business law. Topics covered include: the structure and processes of the U.S. legal system, a comparison of transactional law and business litigation concepts and processes, and the role of regulation in the free market. Students read law cases and other legal texts such as legislation, professional and academic legal writing.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum 45 hours
LAW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	480	The Law of Business Orgs	Describes how companies can be organized in various ways to achieve different goals. Studies the forms in which business enterprises can be organized, and the pros and cons of each form. Examines sole proprietorships, agency, partnerships, corporations and the increasingly popular new form of enterprise called the limited liability company ("LLC"). Focuses on corporations, the most popular form of business organization used in capital raising to drive growth strategies.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Business (Law) BA major; LAW 210; LES 305; minimum senior standing OR Visiting University Student
LAW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	515	Contracts	Explores common law legal method and the structure of Article 2 of the U.C.C. in the context of issues of contract formation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	516	Criminal Law	Substantive law of crimes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		
LAW	517	Torts	Legal protections of personality, property, and relational interests against physical, economic, and emotional harms.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		

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LAW	518	Civil Procedure	Explores the structure of a lawsuit and techniques of alternative dispute resolution. Specific topics include commencement of suit, joinder of parties, discovery, pretrial motions, subject matter and personal jurisdiction, res judicata, collateral estoppel, and choice of law under the Erie doctrine.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	519	Legal Method and Writing	Examines methods used to analyze legal problems. Reviews precedent statutory construction and basic res judicata problems. Use of basic legal writing formats.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	522	Constitutional Law	Role of courts in the federal system, distribution of powers between state and federal governments, and the role of procedure in litigation of constitutional questions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		
LAW	523	Property	Indicia of ownership, found property, estates in land, landlord tenant, nonpossessory interests in property, nuisance, land use planning, and transfers of interests in property.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	524	Legal Advocacy	Continuation of LAW 519.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2		
LAW	530	Fundamentals of Contract Law	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Master of Legal Studies major; Credit is allowed for only LAW 530 or LAW 598, Fundamentals of Contract Law
LAW	581	US Law & Legal Analysis	Introduces non-JD students to the U.S. legal system and to the types of legal reasoning used by U.S. lawyers and judges. Provides the necessary instruction to use legal reasoning in work, including reading and understanding cases and statutes and applying existing law to the issue presented. Extensive written legal analysis exercises.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Laws (Global Legal Studies) or Legal Studies or Master of Sports Law and Business student
LAW	582	Patent Drafting	Prepares students to draft patent applications on behalf of clients. Additionally, students learn the techniques and language necessary to reply to Offices Actions issued by the United States Patent and Trademark Office (USPTO). Provides significant drafting experience, requiring three separate writing submissions and revisions based on instructor feedback throughout the course. Students create work product examples that can be shared with potential employers and/or prospective clients.	N	LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Master of Legal Studies major
LAW	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	585	Comprehensive Patent Practice	Prepares students for the patent prosecution process, as administered by the United States Patent and Trademark Office (USPTO). Uses a "cradle to grave" approach, beginning with the earliest steps taken when preparing to draft a patent application for a client and ending with post-decision options and activities available to those awarded with an issued patent or denied an issued patent.	N	LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	5		Prerequisite(s): Master of Legal Studies major
LAW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	596	Professional Legal Writing	Teaches non-JD students how to organize a legal research project by analyzing the facts and identifying the issues involved, determining the research tools needed to correctly investigate the legal problem, and systematically using these tools to strengthen and support the desired legal argument.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: Laws (USLaw&Global Legal Pract) or Legal Studies students
LAW	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	601	Antitrust Law	Legislation and its implementation to prevent monopoly and business practices in restraint of trade, including restrictive agreements involving price-fixing, trade association activities, and resale price maintenance.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: College of Law student

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LAW	602	Civil Procedure II	Focuses on the Rules of Civil Procedure and how lawyers use the Rules in litigating civil cases from initiation through the pre-trial stages.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		
LAW	603	Conflict of Laws	Problems arising when the operative facts of a case are connected with more than one state or nation. Choice of law, bases of jurisdiction, effect of foreign judgments, and underlying federal and constitutional issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	604	Criminal Procedure	Nature of the criminal procedural system with special focus on constitutional protections for the accused.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisites: College of Law student
LAW	605	Evidence	Principles and practice governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge, and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student
LAW	606	Federal Income Taxation	Federal income tax in relation to concepts of income, property arrangement, business activity, and current tax problems, with focus on the process of tax legislation and administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student
LAW	607	Nanotechnology	Provides an overview of the legal and policy issues relating to nanotechnology, including risk management, national and international regulations, intellectual property, privacy issues, and liability issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	608	Taxation of Business Entities	Key concepts and issues in the taxation of business entities, including C corporations, S corporations, LL.C.s and partnerships. Considers the tax issues that arise when forming a business entity, how to treat income earned by the entity and distributions from the entity to its owners, and consequences of dissolving or selling business entities. Coursework includes review of specific code provisions, administrative materials and important cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 606; Credit is allowed for only LAW 608 or LAW 691 (Tax Business Entities)
LAW	609	Administrative Law	A large portion of federal law comes from administrative agencies such as the Environmental Protection Agency, the National Labor Relations Board and the Department of Defense. Examines the institutional role and legitimacy of these federal administrative agencies. Topics include the source of administrative authority; the rationale for delegation of authority to administrative agencies; constitutional constraints on agency power; the different forms of agency rulemaking; agency adjudication of facts and law; the scope and purpose of judicial review of agency action; and the degree to which administrative agencies exercise executive, legislative and judicial powers.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 609 or LAW 600 (Administrative Law)
LAW	610	Advanced Criminal Procedure	Topics in criminal procedure, with emphasis on legal constraints on grand jury investigations, police practices, pretrial release, preliminary hearings, prosecutorial discretion, and plea bargaining.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	611	Estate and Gift Tax	Tax laws relating to transfer of wealth both at death and during lifetime, including federal estate tax, gift tax, and income taxation of estates and trusts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student; LAW 606
LAW	612	Family Law	Legal and nonlegal problems that an individual may encounter because of a situation as a family member.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	613	Federal Courts	Federal judicial system; relationship of federal and state law; jurisdiction of federal courts and their relation to state courts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	614	International Contracts	Explores the laws applicable to international contractual relations, focusing heavily on the United Nations Convention on Contracts for the International Sale of Goods. One of several offerings in the field of International Business Transactions, touches on choice of law rules and a comparison of selected UCC with CISG provisions; a comparison of the contract law of selected foreign nations with the UCC; and the law of contracts in the United States. The casebook is heavily oriented toward a problem method of study.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	615	Public International Law	Role of law in international disputes. Considers drafting and interpretation of treaties and multilateral conventions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	616	Jurisprudence	Introduces legal philosophy, with readings on the nature of law and legal reasoning, the relationship between law and morality and equality and social justice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617

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LAW	618	Decedent's Estates	Substantive concepts involved in transmitting wealth, including interstate succession, wills and will substitutes, the modern trust as a family protective device, creation of future interests in a planned estate, social restrictions of a nontax nature, and methods of devoting property to charitable purposes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	619	Energy Law & Policy	Examines laws relating to the ownership, consumption and conservation of energy resources, including coal, petroleum, natural gas, sunlight and wind. Explores and analyzes laws that allocate interests in energy resources and that regulate energy production and delivery strategies so as to promote economic efficiency and to mitigate adverse impacts on the natural environment.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for LAW 619 or LAW 691 (Energy Law & Policy)
LAW	620	Civil Rights Legislation	Coverage of the rights and remedies provided by federal civil rights legislation, principally, the key provisions of the Reconstruction Era Civil Rights Acts, portions of the employment discrimination legislation, and voting rights legislation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	621	Sales	Advanced issues involving the formation and interpretation of sales and lease contracts. Focuses primarily on Articles 2 and 2A of the Uniform Commercial Code.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	622	Secured Transactions	Secured transactions under Article 9 of the Uniform Commercial Code and other relevant sections. Overview of the creation, perfection, and priority effects of security interests. Financing of business enterprise and consumer credit.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	624	Community Property	Property rights of husband and wife; the Arizona community property system; homestead.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-2		Pre-requisite: College of Law student
LAW	625	Individual Rights in Con Law	Fundamental protection for person, property, political, and social rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Prerequisite(s): College of Law student
LAW	626	Writing for Law Practice	Helps students attain an advanced level of writing proficiency by exposing them to a broad range of legal documents.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: Juris Doctor Candidate; Credit is allowed for only LAW 626 or 665
LAW	627	Corporate Taxation	Problems in taxability of the corporation, corporate distributions, and corporate reorganizations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 606 with C or better
LAW	629	Employment Law	Employment law topics including testing, privacy, OSHA, FLSA, benefits, worker's compensation, rights to compensation, workplace emotional injuries, termination, and sexual harassment.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	630	Employment Discrimination	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	631	Environmental Law	Litigation, administrative law, and legislation relating to problems of environmental quality. Topics covered may include air and water pollution, toxic substances, pesticides, and radiation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	632	Federal Indian Law I	Inquiry into legal problems special to American Indians and tribes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	633	Law, Litigation, and Science	Fills a gap in the education of most lawyers, namely, how to effectively think about and use empirical evidence.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	634	Election Law	Explores the law governing politics and elections in the United States. Examines a variety of topics, including: the Constitution and its protection of the right to vote; reapportionment; the Voting Rights Act; gerrymandering; the constitutional rights of political parties; campaign finance regulation; and election administration (e.g., the use of electronic voting equipment, provisional and early voting). Also considers the relationship between these topics and partisanship.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 634 or LAW 691 (Election Law)
LAW	635	Juvenile Law	Special problems in the juvenile system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	636	Land Use Regulation	Legal problems in the regulation and control of land development by state and local governments. Administration of zoning, subdivision, and other planning controls; issues of fairness and procedure in the utilization of such controls.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	637	The Litigation Experience	Offers the opportunity to serve as trial lawyers in a simulated case. Using a "learning by doing" format, students take a hypothetical civil lawsuit from the pleading stage through discovery, pretrial motion practice, ADR and trial.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; Pre- or corequisite(s): LAW 605
LAW	638	Professional Responsibility	Emphasizes the Model Rules and Model Code that govern the professional responsibility of lawyers and their interpretation and application.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student

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LAW	639	Natural Resource Law	Examines the constitutional basis for federal land management and the different kinds of public lands management schemes (e.g., parks, forests, wildlife refuges), emphasizing acquisition of right to, and regulation of, the different uses of public lands and resources (e.g., mining, grazing, timber, wildlife habitat, recreation).	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	640	Securities Regulation	Selected problems arising under the major statutes concerned with regulating the securities market.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 654
LAW	642	White Collar Crime	Examines the ways in which white collar crime is prosecuted, principally in the federal system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	643	Water Law	Acquisition of water rights; water use controls; interstate conflicts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	644	Trademark Law	In-depth examination of substantive trademark and unfair competition law with focus on both policy and practical considerations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 644 or LAW 691 (Trademark and Unfair Competition Law)
LAW	645	Patent Law	In-depth examination of substantive patent law as it applies to the commercialization and enforcement of patent rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	646	Copyright Law	Legal rights in original forms of human expression.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	647	Mass Tort Litigation	Examines unique procedural and substantive issues that arise in mass tort litigation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	649	Scientific Evidence	Examines the use of scientists and scientific tests or studies in criminal and civil litigation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	650	Health Law	Introduces health law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	651	Public Health Law	Addresses the relationship between the state and the population's health.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	652	Bioethics and the Law	Covers a range of issues relating primarily to human reproduction and life and death decisions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	653	Bankruptcy	Covers basic bankruptcy law and practices.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	654	Business Organizations	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies, and corporations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisite: College of Law student
LAW	655	Chapter 11	Covers the law and practice of reorganizing business entities under Chapter 11 of the United States Bankruptcy Code.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	656	Value Real Est/Close-Held Bus	Focuses on the valuation of interests in real property and closely-held businesses.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	657	Private Property Rights	Explores the conflict between property rights and the right of the government to acquire private property for public use.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	658	Arizona Constitutional Law	Examines the basic provisions of the Arizona Constitution and the judicial decisions interpreting those provisions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	660	Advanced Estate Planning	Covers advanced estate planning and estate administration issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	662	ADR and Employment Law	The use of alternative dispute resolution has been most extensive in the area of employment law. Mediation and arbitration are widely used not only in the collective bargaining setting, but also in virtually every aspect of the employment relationship. Offers a comprehensive review of the subject with special emphasis on the extensive body of law that has developed in regulating employer-imposed arbitration. Discussion of mediation includes use of simulations to enable the students to understand how mediation can effectively resolve employment disputes. Opportunities to observe real mediations of employment disputes. Experienced attorneys discuss the "real world" use of employment ADR from a plaintiff's and a defendant's perspective.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	664	Intellectual Property	Surveys the laws conventionally grouped as intellectual property, with a focus on patents, copyrights, and trademarks. Explores the policy rationales for each body of law. Particularly relevant for two types of students: (a) those who are unsure they want to specialize in IP and want a general introduction, and (b) those who do not have room in the schedules to take all of the upper-level offerings here at ASU. Not appropriate for students who have already taken the upper-level courses in copyright, trademark, and patents; students who have taken these offerings may be withdrawn.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		

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LAW	666	Corporate Governance	Explores current issues in the corporate governance of publicly traded business corporations under both state and federal law. Also addresses the ethical dilemmas with respect to governance issues that lawyers face when advising corporate clients.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 654; Credit is allowed for only LAW 666 or LAW 691 (Corp Governance)
LAW	667	FDA Regulation	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate
LAW	668	Trade Secrets	Considers the law of trade secrets, focusing on the principles set forth in the Uniform Trade Secrets Act, the Restatement of Torts, the Restatement (Third) of Unfair Competition, and the Defend Trade Secrets Act. The second portion of the class focuses on the law of restrictive covenants, with an emphasis on Arizona case law and principles. Students learn principles of drafting effective restrictive covenants, non-disclosure and confidentiality agreements, as well as an overview of litigation strategies and techniques.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 668 or LAW 691 (Trade Secrets and Restrictive Covenants)
LAW	669	Bar Exam Prep	This two-credit course prepares students to take (and pass) the bar exam. The principal focuses of this course are: (1) writing and analysis for bar exam essays, (2) the MBE (multiple choice section of the bar exam), and (3) the MPT (Multi-state Performance Test) as they pertain to the Arizona bar exam. Although this course primarily focuses on the Arizona bar exam, the skills and strategies learned are applicable for any state's bar exam.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 669 or LAW 791 (Bar Prep)
LAW	670	Pro Sport Team Ops/Legal Issue	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 670 or LAW 691 (Business Operations for Team Sports) or SLB 519
LAW	671	Sports Venue Construction	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 671 or SLB 520
LAW	672	MLB's Impact on Law/Society	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 672 or SLB 523
LAW	673	Risk Management for Venues	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 673 or SLB 521
LAW	674	NCAA Compliance, Infractions	Studies law, revenue, branding/institutional reputation and problem solving in the area of infractions and compliance (enforcement of the NCAA and other athletic association rules, penalizing institutions, personnel and student-athletes). Students argue an appeal before the Infractions Appeals Committee and also write and present a paper dealing with a problem in the infractions and compliance area.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 674 or SLB 522 or LAW 791 (Infractions/Compliance - Intercollegiate Athletics) or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
LAW	675	Professional Sports Law	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
LAW	676	Amateur Sports Law	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)

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LAW	677	Law of Sports Branding	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 677 or SLB 524
LAW	681	Construction Law	The construction of an actual project serves as the "laboratory" for the course. Many of the problems presented in class each week are based on "real time" events occurring on that project and the class visits the actual construction site during one of the classes. Focuses on practical construction law issues taught by an experienced practicing lawyer. Topics include: types of construction contracts; the basic relationships among the owners, architects/engineers, general contractors, subcontractors and material suppliers on a project; express and implied warranties; the role of the schedule and claims related to scheduling; change orders and concealed site condition claims; the Economic Loss Doctrine; mechanics' liens, stop notices and other payment remedies; proving damages; and the trial of a construction case and the use of expert witnesses. Expects extensive student participation during class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 681 or LAW 691 (Construction Law)
LAW	682	Persuasive Speech	This performance-based course focuses on persuasive communication skills. Borrowing proficiencies typically developed for the theatre and applying them in a legal context, students gain increased confidence in communicating and advocating in the courtroom or ADR setting by developing such skills as: pacing, use of gestures, voice projection, voice modulation, and body positioning. Students are on their feet speaking to an audience (the class) each day of class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Juris Doctor of Law student; Credit is allowed for only LAW 682 or LAW 791 (Persuasive Speech)
LAW	685	Separation of Powers	Studies the separation of powers in our federal government by examining the impact of key historical events on constitutional law. Topics include the election of 1800, the Civil War, the Great Depression and World War II, presidential impeachments, and the war on terror.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 685 or LAW 691 (Separation of Powers)
LAW	686	Victims in Criminal Procedure	Considers the emerging field of crime victims' rights and the tensions victims' rights create with traditional prosecution and defense interests.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 686 or LAW 791 (Victims in Criminal Proceed)
LAW	687	Civil Pretrial Practice	Identifies the skills needed for civil pretrial practice and to appreciate what is involved in developing and applying these skills. In addition to discussion of the rules and their application, class focuses on custom and practice with the goal of preparing students for the practice of law in Arizona. There is insufficient time in this class, or frankly any class, to develop the skills to a point where students can feel comfortable that they have sufficient expertise to competently apply these skills. However, by participating in class activities that involve implementing these skills in the context of a specific case, students should leave with sufficient understanding of these skills that they can move quickly into and through the learning process that comes with practice experience.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 687 or LAW 691 (Civil Pretrial Practice)
LAW	688	Jury Selection	Provides a firm foundation for selecting juries in both civil and criminal cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 688 or LAW 791 (Jury Selection)
LAW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	701	Arbitration	Examines the Federal Arbitration Act and the Uniform Arbitration Act as it has been adopted in Arizona.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	702	Alternative Dispute Resolution	Broad exposure to methods of settling disputes in our society such as mediation, arbitration/conciliation, and negotiation, including examination of the current litigation model.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student

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LAW	703	Law, Science, and Technology	Legal mechanisms used in dealing with various issues raised by contemporary science and technology. Explores current legal responses to science and technology.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	704	Federal Indian Law II	Surveys the federal legal doctrines surrounding Indian ownership and exploration of resources.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	705	Media Law	Examines First Amendment principles and statutory and regulatory requirements with respect to the conventional print and broadcast media, as well as recent technologies such as cable.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	706	Immigration Law	Explores political, economic, social, and legal issues concerning immigration. Specific topics covered include citizenship and naturalization, denaturalization, deportation, and refugee rights and asylum.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	707	Elder Law	Looks at legal and policy questions related to aging individuals and an older society.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	709	International Human Rights	International rules and procedures governing the protection of human rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	713	Tribal Law and Government	Analyzes particular problems in tribal law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	714	Biotechnology	Examines the legal, regulatory, scientific, policy and ethical aspects of biotechnology, focusing on genetically engineered plants, animals, foods, drugs, vaccines and other products. Covers issues such as regulation, labeling, liability issues, intellectual property issues, antitrust, the role of the public in biotechnology decisions, international regulation, international trade, bioprospecting/biopiracy, xenotransplantation, animal cloning, synthetic biology, and bioterrorism.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 714 or LAW 691 (Biotechnology)
LAW	715	Sports Law	Unique legal problems relating to professional sports, including their relationship to antitrust laws, the nature of player contracts, and associated tax problems.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	716	Contract Drafting	Provides the opportunity to learn the basic principles of contract drafting, interpretation and negotiation, including drafting contracts that: (1) effectuate the clients' needs; (2) anticipate, and hopefully avoid, potential legal disputes; and (3) are written in plain language. Students represent a particular client throughout the course, and are required to work independently and collaboratively to draft a series of written contracts on behalf of the client. Students also learn about the role of transactional lawyers, ethical considerations, and effective client communications.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; LAW 515; Credit is allowed for only LAW 716 or LAW 691 (Contract Drafting)
LAW	717	Reproduction and the Law	When it comes to the creation of human life, yesterday's science fiction has become today's reality. Stories about baby sellers, egg freezing, runaway surrogate mothers, genetic enhancement and ootomoms have exposed the lack of meaningful legal regulation of assisted reproductive technologies and have spurred calls for reform. But the extent to which the State should regulate who can reproduce and under what circumstances raises a host of difficult questions. This course searches for answers to those questions by considering the role the Constitution, tort, contract, property and criminal law have traditionally played in advancing the State's interest in reproduction and discussing how those doctrines should adapt to new technologies and family configurations. Topics covered include abortion, gamete donation, In Vitro Fertilization, surrogacy, genetic screening and enhancement, eugenics, medical ethics, and alternative family formation.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 717 or LAW 791 (Reproduction and the Law)
LAW	718	Econ Dev in Indian Country	Focuses on the unique legal, economic, and political issues confronting tribal governments in developing diversified reservation economies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: Law major; Credit is allowed for only LAW 718 or PUP 718
LAW	719	Intl Indigenous Rights	Examines the developments in recognizing indigenous rights in people's systems of international law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	720	Indian Gaming Law	Surveys the law surrounding the Indian gaming industry.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	721	Education and the Law	Current legal problems affecting institutions of higher education, faculty, students, and governing boards.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	723	Cultural Resources Law	Focuses on the protection of Native American cultural resources and religions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	724	Privacy	Traces the development of privacy law with special attention to contemporary challenges.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		

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LAW	725	Critical Race Theory	Focuses on the idea of "race" as a social/political construct and examines the impact of American law on the construction of race. Provide historical and legal background necessary to understand the significance of race within American law and policy. Evaluate a number of legal frameworks that address issues of race and ethnicity in various contexts (e.g. segregation laws, civil rights law, federal Indian law, international human rights law). Assesses various jurisprudential accounts evaluating the ethical and moral underpinnings of the law. Critical race theory is known as a jurisprudential framework that is often critical of standard liberal approaches. Evaluates the critiques of liberalism and the scholarship of both liberal and critical theorists.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	726	Indian Legal Research	Teaches students how to research Federal Indian law and tribal law issues. In addition to providing instruction about how to use particular research tools and sources, this course teaches students how to analyze research problems and how and why to use particular types of sources in their legal analysis.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 726 or LAW 691 (Indian Legal Research)
LAW	727	Int'l Legal Research	Teaches students how to research international and foreign law. As a course project, students prepare a bibliography on an international law topic of their choice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 727 or LAW 691 (Research & International Law)
LAW	728	The State Attorneys General	The legal jurisdiction of attorneys general varies significantly from state to state. Course represents the instructor's best judgment as to how to teach in a way that gets to the realities of the operations of attorneys general.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 728 or LAW 691 (The State Attorneys General)
LAW	730	Appellate Advocacy	Covers the conventions of appellate practice while further developing analytical, drafting and oral communication skills. Tasks students both with drafting an appellate brief and with presenting a formal appellate oral argument.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 730 or LAW 691 (Appellate Advocacy)
LAW	731	High-Tech Licensing	Dedicated to learning the law, skills and strategies for licensing intellectual property rights relating to technology. Familiarizes students with licensing parties' objectives, intellectual property rights to be licensed, and writing contracts to achieve the client's goals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 731 or LAW 791 (High Tech Licensing)
LAW	732	Patent Prep and Prosecution	Dedicated to learning the mechanics and strategies for preparing, filing and prosecuting patent applications. Familiarize students with guiding an invention from conception to patent, both domestically and abroad. Considers strategies of patent drafting to provide broad patent scope and enforceable patent claims. Knowledge of intellectual property or patent law recommended prior to taking this course.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Credit is allowed for only LAW 732 or LAW 691 (Patent Preparation)
LAW	733	Negotiation	Explores alternative models of negotiated dispute resolution, as well as the roles of lawyer and client in the negotiation process. Extensive use of simulation exercises.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	734	Products Liability	Traces the development of products liability law; analyzes the major issues currently confronting the courts in this area.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	735	Teaching Assistant	Legal writing teaching assistants assist a writing professor with various tasks throughout the semester.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	736	Adv Legal Research Seminar	Focuses on a rigorous review of basic print and electronic resources and strategies for conducting legal research, federal/state.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	737	Cults & Alternative Religions	Provides opportunity to study laws and policies governing cults. While the definition of a "cult" will be a topic of initial study in the seminar, it may be conceived of loosely as a group with a charismatic leader whose members are persuaded to relinquish their self-identities and material possessions in furtherance of the group's goals. In addition to analyzing the definition of a cult, the first part of the seminar discusses the various types of cults, studying particular cults, and learning about cultic activities. The remainder covers domestic and foreign legal and policy issues generated by cults, including the legal rights of cultic organizations, anti-cult organizations, cult members, and cult members' families. Covers conventional religions that are conceptually similar to cults, to the degree that religious movements fall outside the mainstream.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	738	Trial Advocacy	Confronts issues of trial advocacy through simulation of a variety of aspects of trial practice in a mock court setting.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 605

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LAW	745	The Supreme Court	Intensive examination of selected current decisions of the U.S. Supreme Court.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	751	Death Penalty	Surveys the major constitutional and operational issues relating to the death penalty in the United States.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 751 or LAW 691 (Death Penalty)
LAW	768	Intl Business Transactions	Introduction to U.S., foreign, and international law regulating cross-border business transactions and to the structure of cross-border business deals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 515 and 654
LAW	770	Law Journal	Academic credit for successful completion of editorial work by a member of the staff of Arizona State Law Journal.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	771	Jurimetrics Journal	Academic credit for successful completion of editorial work by a member of the staff of the Jurimetrics Journal of Law, Science, and Technology.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	772	Defender Clinic	Placement in the Public Defender Clinic and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	773	Civil Litigation Clinic	Student attorneys in the Civil Litigation Clinic are certified by the Arizona Supreme Court to represent people who do not have adequate resources to hire an attorney in cases such as consumer fraud, employment discrimination and wage claims, benefits eligibility for people with disabilities, and tenant's rights. Student attorneys are involved in all aspects of civil and administrative practice including interviewing and counseling clients, fact investigation, drafting pleadings, motions and appellate briefs, conducting discovery such as taking depositions and propounding interrogatories, and representing clients in trials, arbitrations and mediation. Student attorneys may also present oral argument in appellate courts.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student
LAW	774	Prosecution Clinic	Placement with various prosecutor offices in the Phoenix area and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; LAW 605
LAW	775	Mediation Clinic	Study of the mediation process and experience as mediators in cases pending before the justice courts and administrative agencies.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	776	Indian Legal Clinic	Provides law students the opportunity to participate in cases dealing with native peoples and Indian issues.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	777	Innovation Advancement Clinic	Allows students to gain real-world experience in legal areas such as patentability of inventions, patent drafting, and technology valuation.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	778	Immigration Clinic	The Immigration Clinic collaborates with local nonprofits, governmental agencies and community advocates to identify foster children in need of immigration services. The clinic also provides legal advice and referral at events organized by community agencies, nonprofits and elected officials.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	779	Patent Law Clinic	Trains students to perform the legal skills necessary to practice transactional patent and trademark law.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 779 or LAW 791 (Patent Litigation Clinic)
LAW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	781	Independent Study	With the approval of a faculty member, a student may research a legal subject of special interest and prepare a paper suitable for publication.	Y	IND	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	785	Externship	Supervised, practical lawyering in an external placement proposed by the student or established by a sponsoring agency and approved by the Sandra Day O'Connor College of Law. In addition, an associated academic component is established by the student with a member of the faculty.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		

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LAW	786	Post-Conviction Clinic	Investigates claims of wrongful conviction and manifest injustice from prisoners convicted of crimes in Arizona. Post-conviction work is a specialized practice area that delves into both fundamental and nuanced aspects of criminal law and criminal procedure—one that is becoming increasingly vital as over 400 prisoners nationwide have been exonerated either in full or in part by DNA testing, and over 1,500 people have been exonerated by other means. Arizona is home to more than 40,000 prisoners and more than 5,000 on community supervision. Arizona incarcerates more people per capita than any other state in the west and ranks sixth in the country. The clinic works in conjunction with the Arizona Justice Project and some of the case profiles.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; Pre- or corequisite(s): LAW 516; LAW 518; LAW 605; LAW 636; Credit is allowed for only LAW 786 or LAW 791 (Post Conviction Clinic)
LAW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-15		Prerequisite(s): College of Law student
LAW	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		
LAW	797	Visiting Student Program	-	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	0-1		Prerequisite(s): College of Law student
LDE	261	Landscape Arch Design Fund III	Applies design fundamentals with an emphasis on landscape architectural issues.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture BS/BA major; passed milestone; ALA 122 with C or better; Corequisite(s): ALA 235 or LAP 231 OR Visiting University Student
LDE	262	Landscape Arch Design Fund IV	Applies design fundamentals to landscape architectural design with emphasis given to human factors.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture major; LDE 261 with C or better
LDE	361	Landscape Architecture I	Site planning: analysis of natural and cultural features; site systems and implications for plan making and design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 262 with C or better; Corequisite(s): LAP 352; LDE 363; LTC 343 OR Visiting University Student
LDE	362	Landscape Architecture II	Site design: site-specific design of configured space by the creative development of form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 361 with C or better; Corequisite(s): LAA 345; LAP 352
LDE	363	Landscape Planting Design	Functional and aesthetic use of plants in arid-region landscape design. Explores design philosophies through planting design problems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture major; Corequisite(s): LDE 361; LTC 343 OR Visiting University Student
LDE	461	Landscape Architecture III	Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 362 with C or better; Corequisite(s): LPH 411 OR Visiting University Student
LDE	462	Landscape Arch IV	Advanced landscape architecture: integrative capstone studio with multifaceted design problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 461 with C or better; Corequisite(s): LTC 446
LDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LDE	521	Adv Landscape Arch Studio I	Explores landscape architecture and design with emphasis on the urban landscape and the significance ecology plays in the design process. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Landscape Architecture student; Credit is allowed for only LDE 521 or LDE 590 (Advanced Landscape Architecture Studio I) or LDE 590 (Applied Landscape Architecture)

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LDE	522	Adv Landscape Arch Studio II	Explores landscape architecture and design with emphasis on urban landscapes and human health. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 521 with C or better; Credit is allowed for only LDE 522 or LDE 590 (Advanced Landscape Architecture Studio II) or LDE 590 (Advanced Landscape Studio II)
LDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	621	Adv Landscape Arch Studio III	Structured around the Design School's "traveling studio" model and provides an opportunity for graduate-level students to refine their talents while also contributing to a better future. Challenges students to work in a multidisciplinary environment to identify new design concepts that improve society and the natural environment. For approximately one week during the semester, students travel to an off-campus location (either in the U.S. or abroad) to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 522 with C or better; Credit is allowed for only LDE 621 or LDE 690 (Advanced Landscape Architecture Studio III)
LDE	622	Adv Landscape Arch Studio IV	Capstone course. Students complete a design project that demonstrates mastery of landscape architecture skills and knowledge. Requires some independent direction. The instructor determines deadlines and expectations for deliverables. Requires cooperation and collaboration between students. Design performance is the themed topic and focus. Students develop a complex design project that addresses a significant professional issue. The project explores and demonstrates how advanced design resolves that issue in a performative manner using evidence-based practices and performance-based metrics. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 621 with C or better; Credit is allowed for only LDE 622 or LDE 593 (Advanced Landscape Architectural Studio IV)

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LDE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	305	Business Law&Ethics for Mgrs	Legal theories, ethical issues, and regulatory climate affecting business policies and decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey student OR non-business student; minimum 2.50 GPA; minimum 56 hours OR non-degree student; minimum 2.50 GPA OR graduate student OR Visiting University Student
LES	380	Consumer Perspective Bus Law	Role of law as it affects society. Uses case studies to present principles that govern business and consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.00 GPA ; minimum 56 hours, OR non-degree student with minimum 2.0 GPA, OR graduate student OR Visiting University Student
LES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Pre-requisites: Minimum 2.00 GPA; Minimum 56 hours OR Non-degree seeking student
LES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	582	Ethical Issues for Managers	Studies ethical decisions; the role of business in society.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LES	586	Basic Ethical Issues for Mgrs	Studies ethical decisions, the role of business in society. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
LIA	101	Student Success in The College	Introduces students to resources that help them succeed in The College of Liberal Arts and Sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Credit is allowed for only LIA 101 or LIA 194 (Introduction to Liberal Arts and Sciences)
LIA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
LIA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIN	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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LIN	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Also serves as an introduction to the profession.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 501 or LIN 501
LIN	510	Linguistics	Overview of linguistics, its subfields, and some of its applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510
LIN	511	Phonetics and Phonology	Current trends in phonological theory and its basis in acoustic and articulatory phonetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	513	Semantics	Current approaches to linguistic meaning with particular attention to English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	514	Syntax	Analyzes syntactic structures using a generative theoretical model with a focus on English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	515	American English	Development of the English language in America, including regional and social varieties, and its relationship to other immigrant and native languages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	516	Pragmatics/Discourse Analysis	Studies language use in context and language structures in spoken and written texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517
LIN	520	Second-Lang Acquisition Theory	Theories of second-language acquisition, including the linguistic, cognitive, and sociocultural aspects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	521	Mthds Teachng Engl as Sec Lang	Methods of teaching English as a second language, language teaching trends, practical applications, and the teaching of different skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	522	Grammar for TESL	Surveys major grammatical structures in English and how they can be taught to ESL speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	523	Language Testing and Assessmnt	Introduces the theory and practice of language test construction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	524	Curriculum Design/Material Dev	Practical guide to curriculum and materials development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
LIN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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LIN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	597	MTESOL Capstone	Provides MTESOL students with a culminating experience in which they bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that the students carry out to demonstrate their ability to apply scholarly and professional knowledge in TESOL practice. Provides opportunities to engage in some professional activities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Teaching English to Speakers of Other Languages MTESOL student; Credit is allowed for only ENG 597 or LIN 597
LIN	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	610	Advanced Studies Linguistics	Different topics such as morphology, semantics, typology, history of linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	614	Advanced Studies in Syntax	Focuses on morphosyntactic feature checking, movement, phrase structure, and their crosslinguistic differences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	615	Adv Studies Sociolinguistics	Language in its social setting, e.g., social variation among native speakers, sociolinguistics aspects of second-language acquisition, and language policy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	616	Adv Studies Discourse Analysis	Advanced analysis of spoken and written discourse emphasizing different methodological and theoretical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	617	Adv Study Historical Linguistic	Overview of theories on language change, the history of languages, and of methods in historical linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	620	Adv Study Second-Lang Acquistn	Selected topics in second-language acquisition, such as phonetics and phonology, morphology, syntax, and discourse.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing—an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
LIN	655	Adv Disciplinary Discourses	Advanced investigation of professional and disciplinary issues related to linguistics and applied linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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LIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	310	History Landscape Architecture	Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): Landscape Architecture majors; ALA 100 or 102; passed degree milestone review OR non-majors with sophomore standing OR Visiting University Student
LPH	311	20th-Century Landscape Arch	Explores concerns, projects, and movements in landscape architecture of late 20th-century understanding; social, ecological, regional, and historical influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): Landscape Architecture majors; ALA 100 or 102; passed the degree milestone review OR non-Landscape Architecture major; minimum junior standing OR Visiting University Student
LPH	411	Landscape ArchTheory/Criticism	Critically analyzes landscape architecture theories and projects to evaluate validity of design and contribution to society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Landscape Architecture BS/BA major; LDE 362 with C or better; Corequisite(s): LDE 461 OR Environmental Design BS major OR Landscape Studies minor OR Design Studies minor; LPH 310; LPH 311 OR Visiting University Student
LPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LPH	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	322	Fundamentals of Ecology Lab	Investigational field course on fundamental concepts in ecology.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 320 or BIO 320 with C or better if completed OR Visiting University Student
LSC	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
LSC	347	Fundamentals of Genetics	Science of genetics, gene flow, and genetic engineering in humans and other organisms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 or 188 with C or better; BIO 182 or 187 with C or better; CHM 116 with C or better OR Visiting University Student
LSC	348	Fundamentals of Genetics Lab	Investigational lab using modern molecular techniques to analyze various genetic phenomena.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 347 with C or better if completed OR Visiting University Student
LSC	359	Animal Physiology Laboratory	Investigative lab experience using animals (including humans) and models.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 358 or BIO 360 with C or better if completed
LSC	362	The Human Environment	Evolution of humans' physiological, ecological, and behavioral interaction with their environment.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182
LSC	363	Genes, Race, Gender & Society	Examines biological events and theories on race and gender and their interface with societal views.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 340 or LSC 347

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LSC	365	The Human Organism	Analyzes human anatomy, physiology, and behavior in an ecological and evolutionary context with the methods of comparative biology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	
LSC	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
LSC	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347; Credit is allowed for only FOR 380 or LSC 380
LSC	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
LSC	388	Research for Natural Sciences	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; Credit is allowed for only LSC 388 or LSC 498 (Research Fundamentals for the Natural Sciences) or ENV 388 or FOR 388 or PLB 388 or PTX 388 OR Visiting University Student
LSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
LSC	426	Analytical Chemistry Lab	Provides hands-on experience with sample extraction, sample clean-up, and instrumental analysis of common chemicals. Largely focuses on the application of analytical chemistry methods to the fields of forensics and the life sciences. Mainly uses the solvent and solid-phase analyte extraction methods; gas chromatography-mass spectrometry, FTIR and NMR, generally determines analyte identification.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
LSC	430	Environmental/Human Toxicology	Lecture/fieldwork course investigating toxic substances in the environment and their effect on the health of organisms, including humans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; CHM 116 with C or better
LSC	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347; BIO 353; CHM 231 or 234; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student
LSC	434	Marine Ecology	Examines ecological processes in oceans, seas, and estuaries that emphasizes species- and community-level phenomena.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; LSC 320 or BIO 320 with C or better
LSC	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
LSC	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475

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LSC	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; LSC 347; Credit is allowed for only FOR 480 or FOR 494 (Advanced Topics in Human Forensic DNA Typing) or LSC 480 or LSC 494 (Advanced Topics in Human Forensic DNA Typing)
LSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
LSC	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
LSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
LSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student
LSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	
LSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
LSC	519	Applied Learning Lab	Workshop-style course where students develop and peer review graduate-level project proposals. Topics may include integrative writing skills for an interdisciplinary thesis, presentation skills and topics tailored to the appropriate lay or technical audience, writing for a wide range of journals.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	547	Wet Laboratory Experience	Balances the need for bench work and in silico experience for students interested in pursuing a career with learning important statistical and computational tools to analyze biological data. Under the direct supervision of the PI and/or Laboratory Manager, students receive instruction and perform all experiments as specified in the performance objectives for the course.	N	LAB	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	555	Integrative Biology I	Provides a comprehensive understanding of the human genome, recent developments, next generation sequencing techniques including the preparation of DNA samples as well as principles of the new generation sequencing assay formats. Describes, critically evaluates and applies theoretical perspectives within genetic/genomic studies, develops and uses computational and mathematical tools and of the invaluable lines of inquiry these biomedical investigations may portend.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	556	Integrative Biology II	Provides a survey of fundamental issues in organismal biology. Covers biological diversity, relationships between form and function, processes of growth and development in individuals and populations, biomes and organism-environment relationships, populations and ecosystem function. Weaves components of previous course work throughout this course where possible.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	562	Applied Math Tech in Biology	Population dynamics, molecular interactions, population genetics, and other biological applications motivate the discrete and continuous mathematics. Studies mathematical techniques and applications representative of a range of applied mathematics topics. Incorporates computer software to help with visualization and numerical solutions of some of the problems.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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LSC	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
LSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LAB	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LAB	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	303	Human Dev Learner Capabilities	Surveys major themes and recent findings in the area of human development across the lifespan, with emphasis on the physical, cognitive, social and emotional domains. Examines the impact of ethnic, gender and cultural factors on development. Applies theories of human development to various educational environments and learning activities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	305	Conceptualizing Learning	Explores a variety of learning theories. Covers the role of the educator, the role of the student, and how tools and systems can help facilitate teaching and learning opportunities. Students design learning experiences for a specific need or opportunity using current research-based learning theories.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	401	Designing LrnEnv for Inclusion	Analyzes current education systems for their ability to meet the needs of diverse populations. Designs sustainable solutions to promote inclusivity in learning environments. Applies current research-based learning theories through a design process. Students advocate for education that changes communities and lives by developing educational solutions that address social concerns.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
LSE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	540	Theoretical Views Lrng in LS	Theoretical perspectives that inform learning scientists. Examines affordances and limitations of theories for designing productive learning environments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDP 540 or LSE 540
LSE	542	Research Methods Learning Sci	Develops a strong methodological toolkit for building, testing and advancing learning theory through innovations that achieve meaningful impact. The field of the learning sciences is interdisciplinary, drawing on multiple theoretical perspectives and research paradigms to build understandings of the nature and conditions of learning, cognition and development.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	570	Case Exemplars Learning Systms	Examines in-depth cases of learning systems in order to examine different ways of explaining learning, knowing and teaching and attendant strategies for generating data about these systems.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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LSE	571	History of Learning Sciences	Examines the history of the interdisciplinary field of the learning sciences in relation to the various disciplinary traditions from which it derives.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		
LSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		

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LSE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	370	Dimensions of Liberal Studies	Critical analysis and application of concepts of liberal studies and its modes of inquiry. Prerequisite: BLS student; sophomore status; completion of first-year composition.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): Liberal Studies BLS major; ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
LST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	470	Liberal Studies Seminar	Advanced analysis and application of theories and methods of human and social inquiry.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): Liberal Studies BLS major; ENG 102, 105, or 108 with C or better; LST 370 (BIS 370) with C or better; minimum senior standing OR Visiting University Student
LST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
LST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		
LST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	
LST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
LST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
LTC	343	Landscape Construction I	Landscape constructions focusing on landform transformations. Topics include landform analysis, grading, and earthwork.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): LDE 361 OR Visiting University Student

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LTC	344	Landscape Construction II	Characteristics of materials and methods used in landscape architectural construction.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture major; LTC 343 with C or better; Corequisite(s): LDE 362
LTC	446	Landscape Construction III	Landscape construction focusing on low-technology, biotechnical, regional, and experimental techniques or systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture major; LTC 344 with C or better; Corequisite(s): LDE 462
LTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAE	201	Mech. Particles/Rigid Bodies I	Force vectors and force system resultants, equilibrium of particles and rigid bodies, friction, centroid and moments of inertia of an area. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Credit is allowed for only MAE 201 or MAE 212 OR Visiting University Student
MAE	202	Mech.Particles/Rigid Bodies II	Kinematics and kinetics of particles. Work, energy, and momentum principles for particles. Planar kinematics and kinetics of rigid bodies. Conservation of energy and momentum for rigid bodies. Equations of motion for particles and rigid bodies. Vibrations. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Aerospace or Mech Engr BSE major; MAE 201 OR non-Aerospace or non-Mech Engr major; CEE 210, CNE 210, or MAE 201; Pre- or coreq(s): MAT 274 or 275; Credit is allowed for only MAE 202 or 212 OR Visiting University Student
MAE	213	Mechanics of Materials	Equilibrium, strain-displacement relations, and stress-strain-temperature relations. Applications to force transmission and deformations in axial, torsional, and bending of bars. Combined loadings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 201 with C or better; MAT 274 or 275 with C or better; PHY 122 with C or better OR Visiting University Student
MAE	214	Computer-Aided Engineering I	Introduces geometry and construction techniques in CAD, technical drawing conventions, generating drawings from CAD models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical & Aerospace Engineering major; Pre- or corequisite(s): MAE 201 or 212 with C or better if completed OR Visiting University Student
MAE	215	Intro to Programming in MATLAB	Introduces basic topics and concepts of computer programming in MATLAB.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace or Mechanical Engineering BSE major or Biomedical Engineering BSE major; MAT 265 or 270 with C or better OR Visiting University Student
MAE	241	Intro to Thermodynamics	Concepts of equilibrium, properties, states, systems, energy and entropy; 1st and 2nd thermodynamic laws, analysis of open and closed systems, power and refrigeration cycles.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Aerospace or Mech Engr BSE major; CHM 114 or 116; MAT 267 or 272; PHY 121 OR non-Aerospace or non-Mech Engr major; MAT 267 or 272; PHY 121; Credit is allowed for only MAE 240 or MAE 241 OR Visiting University Student
MAE	242	Intro to Fluid Mechanics	Introductory survey course covering fundamental concepts relating to engineering fluids. Fluid statics. Integral methods. Differential methods. Dimensional analysis and similarity. Incompressible internal and external flow. Potential flow. Required for Aerospace Engineering and Mechanical Engineering majors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereqs w/C: MAT 267, 272; MAT 274, 275; MAE maj: MAE 201 OR non-MAE maj; CEE 210, CNE 210, MAE 201; Pre- or coreqs w/min C: MAE maj; MAE 202, 212 OR non-MAE maj; CEE 212, MAE 202, MAE 212; Credit allowed for MAE 240 or 242 OR Visiting University Student
MAE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MAE	301	Applied Experimental Statistic	Introduces key concepts in probability and statistics with engineering applications. Emphasizes modeling variation in observations, characterizing its distribution, and making inferences with regard to quality assurance and control. Develops critical skills such as fitting multivariate models, experimental design, and hypothesis testing, utilizing data from engineering projects, simulations, and laboratory experiences.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s): Aerospace or Mech Engr major; With C or better: CSE 100, CSE 110 or MAE 215; MAE 384; MAT 242, 342 or 343; MAT 274 or 275; MAT 267 or 272; Credit allowed for MAE 301 or MAE 394 (Applied Experimental Statistics) OR Visiting University Student

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MAE	318	System Dynamics and Control I	Dynamics of physical systems, models of mechanical, electrical and electromechanical systems, Laplace transform, transfer functions, time response and frequency response, poles and zeros, block diagrams, stability, introduction to feedback control: closed-loop response, PID compensation, steady-state characteristics, root-locus design and analysis of systems, frequency-domain design concepts, Bode-plots and analysis of systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s) with C or better: EEE 202; MAE 202 or 212; MAE 384; MAT 267 or 272; PHY 131; PHY 132; Aerospace or Mechanical Engineering BSE major; Pre- or corequisite(s): MAE 301 with C or better if completed OR Visiting University Student
MAE	341	Mechanism Analysis and Design	Positions, velocities, and accelerations of machine parts: cams, gears, flexible connectors, and rolling contact; introduces synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 212 with C or better, or both MAE 201 and 202 with C or better
MAE	384	Adv Math Methods for Engineers	Methods for numerical solutions to engineering problems. Nonlinear equations, quadrature, ordinary differential equations. Analytical and numerical solutions to partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	CS	Prerequisite(s) with C or better: FSE major; MAT 274 or 275; MAT 242 or 343 (or 342 if not MAE); MAE 215 (or CSE 100 or 110); Pre- or corequisite(s): MAT 267 or 272 with C or better; Credit for only CEE or MAE 384 OR Visiting University Student
MAE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	400	Engineering Profession	Impact of mechanical and aerospace engineering in a global and societal context; effects of and on globalization, environment, sustainability, economy, politics; engineering ethics and business practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Aerospace Engineering or Mechanical Engineering BSE majors; MEE 322, MAE 322, AEE 325, MAE 325, or MAE 394 (Aerospace Structures and Materials) with C or better OR Visiting University Student
MAE	404	Finite Elements in Engineering	Formulation and application of the finite element method through integration of theory, code development and application to problems in heat transport and solid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 or MAE 213 with C or better; CEE 384 or MAE 384 with C or better
MAE	417	System Dynamics and Control II	Fundamentals of feedback control using linear transfer function system models. Analysis in time and frequency domains. Design in the s-plane (root locus) and in the frequency domain (loop shaping). State-space representation and state-feedback control, multivariable control with observers, discrete systems and z-transform, nonlinear systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE or Aerospace Engineering BSE major; MAE 318 with C or better OR Visiting University Student
MAE	436	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 with C or better; Credit is allowed for only MAE 436 or MAE 536 OR Visiting University Student
MAE	455	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Fult Engrn undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student
MAE	460	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering Undergrad student; AEE 360 or MEE 340 w/ C or better; Credit allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dyn) or MAE 560 or MAE 598 (Applied Computational Fluid Dyn) OR Visiting University Student
MAE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		
MAE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MAE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student

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MAE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
MAE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-3		
MAE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MAE	502	Partial Diff Equations Engr	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; credit is allowed for only MSE 502 or MAE 502
MAE	503	Finite Elements in Engineering	Ideas and methodology of finite element analysis. Applications to solid mechanics, heat transfer, fluid mechanics and vibrations. Knowledge of free-body diagrams and vector calculus operations is recommended.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 404 or MAE 503 or MAE 598 (Finite Elements in Engineering)
MAE	504	Exper Mthds Thermal/Fluid Proc	Theory of analog and digital signal analysis as applied to fluid and thermal measurements; optical diagnostics and micro sensors for measuring fluid velocity, pressure and temperature in unsteady flows; particle image velocimetry and thermal anemometry. Applies experimental in a weekly laboratory. Students should have completed an intermediate-level course in fluid dynamics, familiarity with Matlab or some programming language, prior exposure to Fourier series and Fourier transforms, as well as probability and statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Ira A. Fulton graduate student; Pre- or corequisite(s): MAE 571
MAE	505	Perturbation Methods	Nonlinear oscillations, strained coordinates, renormalization, multiple scales, boundary layers, matched asymptotic expansions, turning point problems, and WKBJ method.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering students; Credit is allowed for only APM 575 or MAE 505
MAE	506	Adv Sys Model, Dynamic, Contrl	Lumped-parameter modeling of physical systems with examples. State variable representations and dynamic response. Introduces modern control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506
MAE	507	Control and Optimization	Optimal control of continuous-time dynamic systems. Linear systems and signal spaces, robust and LQR optimal control, optimization methods and LMIs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; MAE 506 with C or better
MAE	508	Digital Control:Design/Implmnt	Analysis and design of control systems in which the digital computer plays a major role. Review of continuous control and introduction to the key effects of sampling. Elements of discrete system analysis; z-transform; sampled-data systems; sampling theorem and combined discrete and continuous system and the phenomenon of aliasing. Deterministic design methods for digital control systems (root-locus, frequency response, pole placement and estimators). Multivariable, optimal control and Kalman filtering, followed by nonlinear control and system identification. Emphasizes digital control implementation topics and a case study on robot control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only MAE 508 or MAE 598 (Digital Control: Design and Implementation)
MAE	510	Dynamics and Vibrations	Lagrange's and Hamilton's equations, rigid body dynamics, gyroscopic motion, and small oscillation theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering students
MAE	512	Random Vibrations	Reviews probability theory, random processes, stationarity, power spectrum, white noise process, random response of single and multiple DOF systems, and Markov processes simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2-3		Pre-requisite: Graduate Engineering major
MAE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MAE	514	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 415 or MAE 514

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MAE	515	Structural Dynamics	Free vibration and forced response of discrete and continuous systems, exact and approximate methods of solution, response spectra, computational techniques, special topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 510 with C or better; Credit is allowed for only MAE 494 (Structural Dynamics) or MAE 515
MAE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Fulton Engineering Graduate students; Credit is allowed for only CHE 518, EEE 518, MSE 475, MSE 518 or MAE 518
MAE	519	Mechanics of Micro/Nano System	Basic processes used for fabricating micro and nanoscale structures used in MEMS. Analyzes the processes and micro/nanoscale structures from a mechanics perspective. Covers the fundamentals of microfabrication, scaling of forces, thermal stresses and strains in thin beams, thermal oxidation and dynamics of MEMS. Optional topics include mechanics of thin films and nanostructured materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 519 or MAE 598 (Mechanics of Micro/Nano Systems)
MAE	520	Stress Analysis	Introduces tensors: kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	521	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
MAE	522	Plasticity	Discusses theory of plastic (and inelastic) deformation in solids, e.g., metals and polymers, with emphasis on the fundamental foundations of the field derived from empirical observations and thermodynamic principles, all within a small strain framework. Assumes some knowledge of undergraduate-level thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 520 or 529; Credit is allowed for only MAE 522 or MAE 598 (Plasticity)
MAE	523	Fracture Mechanics	Linear elastic fracture mechanics. Nonlinear problems. Fatigue fracture. Experimental methods in fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 598 (Continuum Mechanics) with C or better
MAE	524	Theory of Elasticity	Elastic behavior in two and three dimensions. Airy stress functions and displacement potentials. Elements of fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; MAE 520 or MAE 598 (Continuum Mechanics)
MAE	526	Design of Aerospace Structures	Provides a fundamental understanding of the design of aerospace structures. Topics include flight vehicle loads, metallic and composite materials, manufacturing methods, buckling and crippling of aerospace structures, fatigue, damage tolerance, finite element structural analysis, and design of joint and fittings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 426 (or MAE 426) or MAE 526 or MAE 598 (Design of Aerospace Structures)
MAE	527	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527
MAE	528	Advanced Computational Mechani	Teaches methods for treating material and geometric nonlinearities by finite elements for transient and static simulations. Topics to be included are total and updated Lagrangian formulations, linearization and solution methods, stability analysis, nonlinear material models such as hyperelastic and plasticity, and recent research topics such as extended finite element methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): CEE 526 or MAE 527 or MAE 598 (Finite Elements in Engineering); MAE 529; Credit is allowed for only MAE 528 or MAE 598 (Advanced Computational Mechanics)
MAE	529	Continuum Mechanics	Tensors, Eulerian/Lagrangian strains, compatibility equations, Cauchy/nominal stresses, balance laws, Reynolds transport theorem, laws of thermodynamics for a continuum; equations of state, restrictions on constitutive laws, Newtonian fluids, inviscid flows, viscoelasticity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only MAE 529 or MAE 598 (Continuum Mechanics)
MAE	530	Dynamic Behavior of Materials	Focuses on material response under fast mechanical loading, with emphasis on plastic and elastic behavior as a function of pressure, temperature and strain rate, with and without effects of inertia. Starts with a treatment of elastic wave propagation, followed by a study of effects of strain rate and temperature on plastic behavior of metals, including a review of mechanisms and constitutive equations. Then, addresses the theory of shock waves including analysis of shocks using conservation principles as well as thermodynamics, followed by a discussion of dynamic failure. Finally, reviews experimental techniques for dynamic experiments, including drivers and diagnostics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; MAE 520 or 529; Credit is allowed for only MAE 530 or MAE 598 (Dynamic Behavior of Materials)

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MAE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
MAE	536	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 436 or MAE 536
MAE	540	Advanced Product Design Method	Surveys research in engineering design process, artifact and design, knowledge, formal and informal logic, heuristic and numerical searches, theory of structure and complexity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical or Aerospace Engineering graduate student
MAE	541	CAD Tools for Engineers	Elements of computer techniques required to develop CAD software. Data structures, including lists, trees, and graphs. Computer graphics, including 2- and 3-D algorithms and user interface techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	542	Design Geometry and Kinematics	Selected topics in geometry related to current potential applications in CAD/CAM, design theory, kinematics, and robotics. Euclidean isometrics, transformations; 4-D geometry; screw theory and its applications to robotics and assemblies. Differential geometry; curvature and torsional properties of curves and surfaces.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical and Aerospace Engineering graduate student; Credit is allowed for only MAE 542 or 598 (Design Geometry & Kinematics)
MAE	544	Mech Design/Failure Prevention	Modes of mechanical failure; applies principles of elasticity and plasticity in multiaxial state of stress to design synthesis; failure theories; fatigue; creep; impact.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	546	Advanced CAE Simulation	Solution of advanced engineering problems with analysis software for structural, dynamic, nonlinear, contact and kinematic problems; selection of modeling parameters; reliability tests on software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MAE 406 or 546
MAE	547	Modeling and Control of Robots	Homogeneous transformations, workspace, forward and inverse kinematics, differential kinematics, statics and dynamics, motion planning, motion and force control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501
MAE	548	Prob Methods for Eng Des/Analy	Fundamental probabilistic theory, engineering statistics, data analysis, reliability methods, Monte Carlo simulation with different sampling technique, mechanical and structural analysis under uncertainties, focusing on the application for mechanical, aerospace and civil engineering structures and materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 548 or MAE 598 (Probabilistic Methods for Eng Analysis and Design)
MAE	557	Mechanics Composite Materials	Analysis, design, and applications of laminated and chopped fiber reinforced composites. Micro- and macromechanical analysis of elastic constants, failure, and environmental degradation. Design project.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 529
MAE	560	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dynamics) or MAE 560 or MAE 598 (Applied Computational Fluid Dynamics)
MAE	561	Computational Fluid Dynamics	Finite-difference and finite-volume techniques for solving the subsonic, transonic, and supersonic flow equations. Method of characteristics. Numerical grid-generation techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; Credit is allowed for only AEE 471 or MAE 471, 561
MAE	562	Advanced CFD - Interfaces	Numerical methods for interfaces in low Mach number flows including level set methods, volume of fluid methods, Lagrangian interface tracking, ghost fluid methods, and immersed boundary methods. Includes coding of the covered numerical techniques and application to different physical interfaces, e.g., liquid/gas phase interfaces, premixed flames and flows in complex geometries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 561; Corequisite(s): MAE 502, 529, or 571; Credit is allowed for only MAE 562 or MAE 598 (Advanced Computational Fluid Dynamics)
MAE	563	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems. Recommend a background in thermodynamics and high-speed aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only AEE 463 or MAE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) or MAE 598 (Propulsion)
MAE	564	Advanced Aerodynamics	Advanced topics in aerodynamics with application to design. Slender body theory. Thin airfoil theory. Transonic and supersonic effects. Sweep theory. Wave drag. Post-stall (vortex) flows. Supersonic and hypersonic flows.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Aerospace Engineering major

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MAE	565	Rocket Propulsion	Rocket flight performance, nozzle design, combustion of liquid and solid propellants, component design, advanced propulsion systems, interplanetary missions, testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 465 (or MAE 465) or MAE 565 or EGR 598 (Rocket Propulsion) or MAE 598 (Rocket Propulsion)
MAE	566	Rotary-Wing Aerodynamics	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE 466 or 566
MAE	570	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics; property relationships, power and refrigeration cycles, and reactive systems. A basic knowledge of thermodynamics is required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MAE 482 or MAE 570 or MEE 482
MAE	571	Fluid Mechanics	Basic kinematic, dynamic, and thermodynamic equations of the fluid continuum and their application to basic fluid models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre- or corequisite(s): MAE 502
MAE	573	Advanced Fluid Mechanics	Mechanics of fluids flows where either the effects of inertia or viscosity are significant. Exact and approximate solutions of the Navier-Stokes equations, laminar flow and flow at low and high Reynolds numbers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 571 with C or better
MAE	574	Multiphase Flow	Models for multiphase flows including dispersed and continuous phase flow models, particle-fluid and particle-particle interactions, droplet collision and coalescence, atomization, and numerical and experimental methods for analyzing multiphase flows.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 502; MAE 529; MAE 571; Credit is allowed for only MAE 574 or MAE 598 (Multiphase Flow)
MAE	575	Turbulence	Graduate-level introduction to turbulent flows covering the essential physical basis of turbulence, the statistical description of turbulent flows, dynamics of energy transfer and dissipation in such flows, inner- and outer-variable scaling of turbulent flows, and modern computational modeling and simulation of turbulence and turbulent flows. Requires undergraduate background in fluid mechanics and strong graduate-level mathematics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student
MAE	576	Energy Efficiency	Provides a broad background in energy efficiency analysis and technologies. Applies fundamental concepts from thermodynamics, heat transfer and fluid mechanics to real-world applications including heating, ventilating, air conditioning (HVAC), refrigeration, compressed air systems, steam systems, combined heat and power (CHP). Complements other courses on conventional and renewable power generation by focusing on reducing energy consumption, thus making it easier to meet our energy needs from sustainable sources. To be successful in this course, students should have knowledge of thermodynamics principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 494 (Energy Management) or MAE 494 (Energy Efficiency) or MAE 576 or MAE 598 (Energy Management)
MAE	577	Advanced Turbulence	Reynolds equations and their closure. Modeling of simple and complex turbulent flows, calculations of internal and external flows, and application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 575 with C or better
MAE	578	Geophys & Environ Fluid Dynam	Dynamics of large-scale flows under the influence of stratification and earth rotation. Thermally and mechanically driven flows in turbulent boundary layer. Waves and instability of geophysical flows. Global-scale circulation. Applications to environmental prediction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
MAE	579	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441
MAE	581	Advanced Thermodynamics	Basic concepts and laws of classical equilibrium thermodynamics; applications to engineering systems; introduction and applications of statistical mechanics and kinetic theory; Boltzmann integro-differential equation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student

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MAE	582	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems, and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)
MAE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
MAE	585	Solar Thermal Engineering	Solar energy availability, flat-plate and concentrating solar thermal collectors, solar heating and cooling, concentrating solar power (CSP).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering student; credit is allowed for only MAE 585 or MAE 598 (Solar Thermal Engineering)
MAE	586	Advanced Heat Transfer	Basic concepts and governing equations. Analysis of laminar and turbulent heat transfer for internal and external flows. Natural and mixed convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	587	Radiation Heat Transfer	Advanced concepts and solution methodologies for radiation heat transfer, including exchange of thermal radiation between surfaces, radiation in absorbing, emitting, and scattering media and radiation combined with conduction and convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	588	Nanoscale Heat Transfer	Explores the fundamental micro and nanoscale origins of thermal transport. Uses energy transport formalism to explain the breakdown of macroscopic transport laws (e.g., Fourier's law) at the micro and nanoscale. Defines and explores the key carriers of heat: phonons, photons, electrons and molecules. Derives the energy states of these carriers and combines this knowledge with statistical thermodynamics to determine the population distribution of these carriers. Combining these distributions with scattering processes enables fundamental laws to be derived within the context of their microscopic/nanoscale underpinnings. Some of these phenomena include, Fourier's law, Ohm's law, thermopower, Wiedemann-Franz law, Dulong-Petit law, equation of radiative transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed only for MAE 588 or MAE 598 (Nanoscale Heat Transfer)
MAE	589	Heat Transfer	Basic concepts; physical and mathematical models for heat and mass transfer. Applications to conductive, convective, radiative, and combined mode heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MAE 494 topic (Heat and Mass Transfer) or 589
MAE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): graduate MAE major
MAE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisites: Mechanical or Aerospace Master's degree student
MAE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): graduate Engineering student

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MAE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Aerospace Engineering or Mechanical Engineering or Robotics and Autonomous Systems (Mechanical and Aerospace Engineering) MS student
MAE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
MAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	501	Mthd Interdisciplinary Inquiry	Critical survey of current models of inquiry, tools, processes, and methods in different fields.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Interdisciplinary Studies Masters student
MAS	502	Perspectives in Interdisc Stud	Introduces interdisciplinarity through explorations of epistemological and rhetorical practices that bridge traditional disciplines.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	505	Theory Change, Culture & Mind	Introduces graduate-level interdisciplinary study of key thinkers, movements, theories, and paradigms in 20th-century thought.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	510	Science & Religion: Cosmolog	Examines science and religion, stressing modern scientific findings and philosophical and historical debates and dialogues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 430 or MAS 510
MAS	513	Sociology of Everyday Life	Examines institutional ethnography, a way of exploring the particular and generalized social relations that shape people's everyday experiences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	514	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the nineteenth and twentieth centuries. Course dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAS 514 or MAS 598 (Studies in Critical Theory) or MAS 598 (Continental Philosophy and Religion)
MAS	550	Issues in Death and Dying	From Plato to Maimonides to Heidegger to Kubler-Ross, scholars, clinicians, and spiritual writers have recognized that attitudes about death and dying contribute to understandings of human existence. Recalling the ancient Socratic, biblical, and other spiritual traditions of the cura animarum (care for and cure of the soul) and joining contemporary post/secular conversations relevant to integration of body-mind-spirit, this course introduces basic concepts and practices of care ethics and spirituality. Focuses on relations among existential (ontological), therapeutic (psychosomatic), and spiritual (religious) dimensions of care. Theoretically, the course is inter-faith in approach, holistic in scope, and specialized in content. Practically, students examine real-life issues in care ethics and spirituality from multiple perspectives	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-9		Prerequisite: Graduate (degree or nondegree) student; Credit is allowed for only MAS, PHI 550 or REL 585

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MAS	573	Art and Politics	Explores issues and relationships between the arts and politics through historical examples, significant artists and works, key thinkers, and theoretical approaches. Considers topics such as: the arts and ideology, art and the politics of representation, propaganda, censorship, state-supported art, human rights, revolution and war, cultural change, and political aesthetics. Emphasizes interdisciplinary arts and period study, including the arts and The Russian Revolution, the art in the Weimar Republic and Nazi Germany, and, generally, the arts, art and social movements (e.g., U.S. Civil Rights era, Eastern Europe's solidarity movement and Velvet Revolutions), as well as the arts and politics in selected contemporary contexts (e.g., China, the Middle East).	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	585	Capstone Course	Assists students in preparing their capstone project, which represents the culmination of their study for the MA in Interdisciplinary Studies.	N	RSC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-4		Pre-requisites: Interdisciplinary Studies Masters student
MAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Pre-requisites: Interdisciplinary Studies Masters student
MAS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	110	Enhanced Freshman Mathematics	Individually paced, computer-mediated course designed to prepare students for college-level mathematics. Students work on various modules in an online adaptive learning technology platform created to help students progress through the course material based on individual needs in preparation for enrollment in the next level math course required by the student's major (pre-MAT 117 "Track 1" or pre-MAT 142 "Track 2"). Upon completion of this course, students should see improvement of basic math skills, an increase in the confidence in mathematical abilities, and advancement in ability to relate math to real-life applications. Credit for this course does not count towards university graduation requirements	N	LEL	N	ELG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-3		Prerequisite(s): Mathematics Placement Test below 32% for majors that require MAT 142 OR Mathematics Placement Test 32-39.9% for majors that require MAT 117 or higher (consult your major map)
MAT	117	College Algebra	Linear functions, quadratic functions, general polynomial functions, rational functions, systems of linear equations, logarithmic and exponential functions.	N	LEL	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade, or Mathematics Placement Test with a score of 0-49.9% or higher, or ALEKS score of 0-60 or higher OR Visiting University Student

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MAT	119	Finite Mathematics	Topics from linear algebra, linear programming, combinatorics, probability, and mathematics of finance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 170, 210, or 270 with C or better, or Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher OR Visiting University Student
MAT	142	College Mathematics	Applies basic college-level mathematics to real-life problems. Topics include numerical reasoning, sets, counting techniques, probability, basic statistics and finance. Appropriate for students whose major does not require MAT 117 or 170.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade, or Mathematics Placement Test with a score of 0-39.9% or higher, or ALEKS score of 0-60 or higher OR Visiting University Student
MAT	170	Precalculus	Intensive preparation for calculus. Topics include functions (including trigonometric), vectors and complex numbers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117 with C or better, or Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	171	Precalculus: STEM	Robust treatment of advanced algebraic skills and trigonometry that are vital in calculus. Algebra topics include functions, compositions, inverses, transformations, complex numbers, roots of polynomial functions, rational functions, exponential and logarithmic functions and their properties. Trigonometry is approached via the unit circle as well as the right triangle. Topics include the trigonometric functions, their graphs and identities, inverse trigonometry, the laws of sine and cosine, vectors and the dot product with an application toward work, and polar coordinates and roots of complex numbers (deMoivre's theorem).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 117 with C or better, or Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
MAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-5		
MAT	207	Algebra and Geometry in the HS	Provides a conceptually rigorous treatment of the central ideas of algebra and geometry in high school. Explores and develops familiar mathematical content from a very different perspective. Focuses squarely on creating meaning for concepts and on building coherence of meaning across concepts and various representations of them. As such, course activities and assessments (class/lab activities, homework assignments, and exams) reflect these expectations, focusing on both doing high school mathematics with meaning and on expressing and communicating that meaning accurately and coherently in verbal and written form. Prior to enrolling in this course, students should have experience with algebra/geometry to at least the high school level.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Corequisite(s): MTE 210 OR Visiting University Student
MAT	208	Discrete Math for Secondary Ed	Potential secondary teachers of mathematics should master the Math Standards proposed by the National Council of Teachers of Mathematics for college-intending students. Focuses on those aspects of these standards that apply to discrete mathematics with particular emphasis on: mathematical problem solving, mathematics as communication, mathematical reasoning, and discrete mathematics. Taking a broader view, introduces mathematics as a discipline that uses known methods to discover and verify new conclusions through the study of discrete mathematics.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MAT	210	Brief Calculus	Differential and integral calculus of elementary functions with applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 119, 170, or 171 with C or better, or Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student
MAT	211	Math for Business Analysis	Topics in business analysis, including: Lagrange multipliers, linear programming, linear algebra, intermediate probability, random variables, discrete distributions, and continuous distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better OR Visiting University Student

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MAT	242	Elementary Linear Algebra	Introduces matrices, systems of linear equations, determinants, vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better OR Visiting University Student
MAT	243	Discrete Math Structures	Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; minimum sophomore standing OR Visiting University Student
MAT	251	Calculus for Life Sciences	Differential and integral calculus of elementary functions. Introduces differential and difference equations. Emphasizes applications to the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 170 or 171 with C or better, or Mathematics Placement Test with a score of 56% or higher, or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student
MAT	265	Calculus for Engineers I	Limits and continuity, differential calculus of functions of one variable, introduction to integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prereq(s): MAT 170 or 171 with C or better, OR Math Place Test w/ a score of 60% or higher; the Adv Math Place Test w/ a score of 38 or higher, OR ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	266	Calculus for Engineers II	Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	267	Calculus for Engineers III	Vector-valued functions of several variables, partial derivatives, multiple integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 267 or 272 OR Visiting University Student
MAT	270	Calculus w/Analytic Geometry I	Real numbers, limits and continuity, and differential and integral calculus of functions of 1 variable.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prereq(s): MAT 170 or 171 with C or better OR Math Place Test with a score of 60% or higher and Adv Math Place Test with a score of 38 or higher OR ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	271	Calculus w/Analytic Geometry II	Methods of integration; applies calculus, elements of analytic geometry, improper integrals, sequences and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	272	Calc w/Analytic Geometry III	Vector-valued functions of several variables, multiple integration, and introduction to vector analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 267 or MAT 272 OR Visiting University Student
MAT	274	Elem Differential Equations	Introduces ordinary differential equations, adapted to the needs of students in engineering and the sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 274 or 275
MAT	275	Modern Differential Equations	Introduces differential equations, theoretical and practical solution techniques. Applications. Problem solving using MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with a C or better; Credit is allowed for only MAT 274 or 275 OR Visiting University Student
MAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MAT	300	Mathematical Structures	Logic and set theory, induction, functions, order and equivalence relations, cardinality. Emphasizes writing proofs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	L	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
MAT	310	Introduction to Geometry	Congruence, area, parallelism, similarity and volume, and Euclidean and non-Euclidean geometry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	342	Linear Algebra	Linear equations, matrices, determinants, vector spaces, bases, linear transformations and similarity, inner product spaces, eigenvectors, orthonormal bases, diagonalization, and principal axes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student
MAT	343	Applied Linear Algebra	Solving linear systems, matrices, determinants, vector spaces, bases, linear transformations, eigenvectors, norms, inner products, decompositions, applications. Problem solving using MATLAB.4	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student

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MAT	350	Tech/Apps of Applied Math	Mathematical techniques and applications representative of the range of applied mathematics used in operations research, biology, economics, finance, and sociology. In depth exploration of these techniques in detail by focusing on selected applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 274 or 275; Pre- or corequisite(s): MAT 342 or 343; Corequisite(s): STP 280 or 420
MAT	353	Mathematics and Cancer	Addresses some of the mathematical questions regarding the dynamics of cancer growth and treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 275 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 353 or MAT 394 (Mathematics and Cancer) OR Visiting University Student
MAT	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
MAT	370	Intermediate Calculus	Theory behind basic 1-variable calculus: continuity, derivative, Riemann integral, sequences, and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 300 with C or better; Credit is allowed for only MAT 370 or MAT 371 with C or better OR Visiting University Student
MAT	371	Advanced Calculus I	Real numbers, completeness, sequences/series, continuity, uniform theorems, derivative, Riemann integral, pointwise/uniform convergence, Taylor's theorem. Credit is allowed for only MAT 371 or 370 toward a mathematics degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 300 with C or better OR Visiting University Student
MAT	372	Advanced Calculus II	Open, closed, compact sets in R^n continuity, differentiation, partial differentiation, integration in R^n Inverse/implicit function theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better; Pre- or corequisite(s): MAT 342 or 343 with C or better; Credit is allowed for only MAT 372 or 460
MAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	410	Intro to General Topology	Point set topology, topological spaces, metric spaces, continuity, compactness, connectedness and product spaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	411	History and Philosophy of Math	Examines nature of mathematics from origins to present, revealed by its history and philosophy. Strong background in mathematics not required.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	HU & H	Credit is allowed for only IAS 411 or MAT 411
MAT	412	Differential Geometry	Rigorous treatment to the concepts and methods of differential geometry via the classical theory of curves and surfaces in Euclidean space, the Gauss-Bonnet theorem, and additional topics as time and interest permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 with C or better; MAT 371 with C or better; Credit is allowed for only MAT 412 or MAT 494 (Introduction to Differential Geometry)
MAT	415	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Pólya theory and combinatorial structures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 415 or MAT 512 OR Visiting University Student
MAT	416	Graph Theory	Trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 416 or MAT 513
MAT	419	Intro to Linear Optimization	Simplex method, duality, and network flows. Applications to game theory, geometry, combinatorics, graph theory, and posets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): ACO 101, ACO 102, CSE 100, CSE 110, or CSE 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better
MAT	420	Scientific Computing	Surveys and applies programming languages, libraries, and scientific visualization tools. Programming assignments emphasize software development skills. Completion of advanced calculus recommended prior to this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 205 with C or better; MAT 274 or 275 with C or better; MAT 342 or 343 with C or better OR Visiting University Student
MAT	421	Applied Computational Methods	Numerical methods for quadrature, differential equations, roots of nonlinear equations, interpolation, approximation, linear equations, floating-point arithmetic, and roundoff error.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 272 or 267 with C or better
MAT	423	Numerical Analysis I	Solution of systems of linear and nonlinear equations, optimization, eigenvalues, round-off error, and floating point arithmetic. Fluency in computer programming is required for enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 342 or 343 with C or better OR Visiting University Student

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MAT	425	Numerical Analysis II	Analysis of and algorithms for numerical interpolation, integration, and differentiation. Numerical solution of ordinary and partial differential equations, introductory level. Applications. Fluency in computer programming is required for success in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 371 recommended
MAT	429	Optimization	A variety of optimization models and their applications to management, economics, engineering, and science. Topics include linear programming, integer programming, nonlinear programming, and stochastic programming. Stresses formulation and modeling as well as numerous applications and solving algorithms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 343 with C or better; MAT 350 or 419 with C or better
MAT	440	Group Theory	Covers basic group theory. Students learn about the concept of a "group," related structures, their underlying theory and examples of how they arise in mathematics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343 OR Visiting University Student
MAT	441	Ring Theory	Covers basic ring theory. Students learn about the concept of a "ring," related structures, their underlying theory, and examples of how they arise in mathematics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343
MAT	442	Advanced Linear Algebra	Fundamentals of linear algebra, dual spaces, invariant subspaces, canonical forms, bilinear and quadratic forms, and multilinear algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better OR Visiting University Student
MAT	443	Intro to Abstract Algebra	Introduces concepts of abstract algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 443 or MAT 444
MAT	444	Intermediate Abstract Algebra	Basic theory of groups, rings, and fields, including an introduction to Galois theory. Appropriate as preparation for MAT 543.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 440, 441, or 442 with C or better
MAT	445	Theory of Numbers	Prime numbers, unique factorization theorem, congruences, Diophantine equations, primitive roots, and quadratic reciprocity theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better
MAT	447	Cryptography I	Block ciphers, stream ciphers, congruence arithmetic, information theory, public key cryptosystems, key exchange, electronic signatures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 100, 110, or 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better OR Visiting University Student
MAT	448	Cryptography II	Mathematical underpinnings of contemporary cryptosystems, electronic signatures, key exchange, primality testing and factorization algorithms.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 447. Credit is allowed for only MAT 448 or MAT 494. Cryptography II
MAT	450	Mathematical Models in Biology	Introduces mathematical models in biological systems. Applications range from the cellular level to systems level and may include applications from areas such as physiology, ecology, epidemiology, population biology, computational and systems biology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 274 or 275 with C or better
MAT	451	Mathematical Modeling	Detailed study of one or more mathematical models that occur in the physical or biological sciences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better OR Visiting University Student
MAT	452	Intro Chaos/Nonlinear Dynamics	Properties of nonlinear dynamical systems; dependence on initial conditions; strange attractors; period doubling; bifurcations; symbolic dynamics; Smale-Birkhoff theorem; and applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 274 or 275 with C or better; MAT 242, 342, or 343 with C or better; MAT 371 is recommended OR Visiting University Student
MAT	460	Vector Calculus	Vectors, curvilinear coordinates, Jacobians, implicit function theorem, line and surface integrals, Green's, Stokes', and divergence theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better; MAT 371 is recommended; Credit is allowed for only MAT 372 or 460
MAT	461	Applied Complex Analysis	Analytic functions, complex integration, Taylor and Laurent series, residue theorem, conformal mapping, and harmonic functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better
MAT	462	Applied Partial Diff Equations	Second-order partial differential equations, emphasizing Laplace, wave, and diffusion equations. Solutions by the methods of characteristics, separation of variables, and integral transforms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better OR Visiting University Student
MAT	472	Intermediate Real Analysis I	Introduces analysis in metric spaces with emphasis on the real line.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better OR Visiting University Student
MAT	473	Intermediate Real Analysis II	Analysis in \mathbb{R}^n : implicit function theorem, introduction to manifolds, Lebesgue integration, change of variables formula, convergence theorems for integrals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 472 with C or better

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MAT	475	Differential Equations	Linear and nonlinear ordinary differential equations, asymptotic behavior of solutions, stability, existence and uniqueness, limit sets, Poincar-Bendixson theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274 or 275 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	476	Partial Differential Equations	First-order quasilinear, method of characteristics, second-order linear (hyperbolic, parabolic, elliptic), Green's functions, integral representations, eigenfunction expansions, maximum principles, harmonic functions, and additional topics as time permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274, 275, or 475 with C or better; MAT 371 with C or better
MAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): minimum 45 hours
MAT	485	History of Mathematics	Topics from the history of the origin and development of mathematical ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
MAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student
MAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	495	Undergraduate Research	Supervised research in mathematical sciences.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Prerequisite(s): minimum 45 hours
MAT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	501	Geomtry/Toplogy of Manifolds I	Brief review of general topology, cell complexes, topological manifolds, fundamental groups, covering spaces, homology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAT 501 or MAT 598 (Geometry and Topology of Manifolds)
MAT	502	Geomtry/Toplogy of Manifolds II	Differentiable manifolds, vector and tensor fields, differential forms, flows, Lie groups, homogeneous spaces, de Rham cohomology, Riemannian metrics and curvature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 501; Credit is allowed for only MAT 502 or MAT 598 (Geometry Topology of Manifolds II)
MAT	512	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Polya theory and combinatorial structures. Same topics as MAT 415; mastery at much higher level required. Students with MAT 415 (even as undergraduates) may not enroll.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student; Credit is allowed for only MAT 415 or 512
MAT	513	Graph Theory	Rigorous introduction to graph theory. High-level mastery in topics such as trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MAT 416 or 513
MAT	514	Enumerative Combinatorics I	First semester of a systematic development of enumerative combinatorics, including elementary counting techniques, sieve methods, and partially ordered sets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	515	Enumerative Combinatorics II	Second semester of a systematic development of enumerative combinatorics, including lattices, exponential structures, symmetric functions, and selected special topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	516	Graph Theory I	First semester of a systematic development of graph theory, including matchings, connectivity, arboricity, planarity, coloring, network flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	517	Graph Theory II	Second semester of a systematic development of graph theory, including dense and sparse graphs, Ramsey theory, hamiltonicity, random graphs, minors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	541	"p"-Adic Numbers	Introduces "p"-Adic numbers and analysis. Topics include valuations, completions of number fields, extensions of the field of "p"-adic numbers and "p"-adic analysis. Students should have previously taken courses in analysis and algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAT	542	Elliptic Curves	Geometry and arithmetic of elliptic curves, points of finite order, the group of rational points, curves over finite fields, complex multiplication. Students should have previously taken a senior-level course in abstract algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	543	Abstract Algebra I	Groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	544	Abstract Algebra II	Continuation of groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 543
MAT	545	Abstract Algebra III	Covers modules, Galois theory, and preparation for advanced study in algebraic parts of mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	547	Algebraic Number Theory	Algebraic properties of number fields and their completions. Topics include rings of integers, ramification, finiteness of the class group, and Dirichlet's unit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	570	Real Analysis I	Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	571	Real Analysis II	Continuation of Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 570
MAT	572	Complex Analysis I	Analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	573	Complex Analysis II	Continuation of analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 572
MAT	578	Functional Analysis I	Locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	579	Functional Analysis II	Continuation of locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 578
MAT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	117S	College Algebra Stretch	For students who have an in-progress (Z) grade for MAT 117. The grade earned in MAT 117S replaces the Z grade for MAT 117. Course content is the same as MAT 117, which is intended to develop skills in linear functions, quadratic functions, general polynomial functions, rational functions, exponential functions and logarithmic functions. Also studies systems of linear equations. Emphasizes problem-solving techniques, specifically by means of discussing concepts in each of these topics.	N	LEL	N	NOG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0		Prerequisite(s): MAT 117 with grade of Z OR Visiting University Student
MBB	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; Credit is allowed for only BIO 343 or MBB 343
MBB	347	MolecularGenetics:GenesProtein	Emphasizes molecular and cell biology and gene technology, both at the basic and applied research levels, in the growing areas of biotechnology and the molecular biosciences; focuses on molecular processes that allow genetic information to be expressed and regulated and by introducing applications to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 282 with C or better or BIO 181 and 182 with C or better; CHM 116 with C or better; Credit is allowed for only BIO 340 or MBB 347 OR Visiting University Student
MBB	350	Applied Genetics	Introduces molecular genetics with emphasis on application of genetics to solve biological questions and to engineer organisms for biotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 340 or MBB 247 or MBB 347 with C or better; Credit is allowed for only MBB 350 or PLB 350 OR Visiting University Student
MBB	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
MBB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or CBS 540 or MBB 440 or MCB 540
MBB	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student
MBB	446	Molecular Biology/Genetics Lab	Molecular genetic techniques; plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student
MBB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Pre-requisites: Minimum 3.3 GPA; Molecular Biology student

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MBB	490	Capstone: Issues Biotechnology	Integrates science and biotechnology industry issues dealing with intellectual property, regulatory issues, business practices, and commercialization. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): MBB 343 with C or better
MBB	491	Capstone: Issues in Mol Biosci	Integrates molecular science and societal issues dealing with ethics, regulatory issues, and societal needs that pertain to molecular biosciences. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): BIO 340 or MBB 347 with C or better
MBB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MBB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student
MBB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): minimum junior standing OR Visiting University Student
MBB	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MBB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): Molecular Biosciences and Biotechnology BS major; minimum 3.0 GPA
MBB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MCB	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	501	Seminar:Molecular/Cell Biology	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
MCB	540	Functional Genomics	Functional relevance of genomic sequences; DNA arrays, proteomics, analysis of genomic information for metabolic physiology of organisms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 440 or CBS 540 or MBB 440 or MCB 540
MCB	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB or NEU 555
MCB	556	Adv Molecular/Cell Biol II	Continuation of MCB 555.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MCB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	701	Seminar:Molecular/Cellular Bio	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCE	447	Diversity in Multicultural Set	Diversity and the changing role of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
MCO	101	Everyday Grammar	Helps students master the elements of English grammar.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): non-Journalism and Mass Communication majors or non-Sports Journalism majors; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student
MCO	102	Fundamentals of Coding	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
MCO	120	Media and Society	Covers the role of newspapers, magazines, radio, television and motion pictures in American society.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): non-Journalism and Mass Communication major or non-Sports Journalism major; Credit is allowed for only JMC 110 or MCO 110 or MCO 120 OR Visiting University Student

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MCO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	240	Media Issues Amer Pop Culture	Examines the production and consumption of popular culture as disseminated by the mass media with emphasis on the societal implications.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		
MCO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	302	Media Research Methods	Surveys research methods used in the social sciences, with a focus on mass communication.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	307	The Digital Audience	Introduces students to the foundations of digital strategy, including audience research, social media campaigns, SEO, analytics, audience targeting, goal setting and more. Through hands-on exercises with real brands, students learn how audiences differ across industries and platforms, approaches for engaging users, and how organizations use audience data to create growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	335	Social Media	Surveys the social media landscape: what are social media platforms, who uses them, and how are they transforming the way we inhabit the world? Explores and critically analyzes the social, cultural, legal, ethical, economic and technological dimensions of social media environments from Facebook to Foursquare, Twitter to Flickr and beyond.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Students may not earn credit for both MCO 335 and MCO 435 OR Visiting University Student
MCO	366	Media Ethics and Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism and mass communication ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 366 or MCO 366 or MCO 494 (Media Ethics and Diversity) OR Visiting University Student
MCO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	403	Media Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
MCO	418	History of Mass Communication	American journalism from its English and colonial origins to the present day. Development and influence of newspapers, magazines, radio, television, and news gathering agencies.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB & H	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	420	Strategic Sports Communication	Covers the wide-ranging field of strategic sports communication. Prepares students for an entry-level position in the strategic sports communication field.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism or Business (Sports and Media Studies) major; minimum 45 hours OR Visiting University Student
MCO	425	Digital Media Literacy I	Helps students begin to navigate the 21st-century media, starting by becoming active users of media, not just passive consumers. The Internet-fueled democratization of media creation has enabled anyone to be a publisher, and given audiences' almost infinite choices, with both great and questionable effects. In a world of information abundance, it can be difficult to discern fact from opinion and truth from fiction. We need to know how to wade through this barrage of information with a critical eye, to be better informed, and ultimately become creators of media ourselves.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 425 or MCO 494 (Digital Media Literacy) OR Visiting University Student
MCO	426	Digital Media Literacy II	Discusses digital media consumption to some degree, but focuses more on media creation and the many issues we need to understand for best practices. Students learn the importance of understanding the tools and techniques of media creation, and how media are used to persuade, the ethical and legal issues in creating media, policy issues that can (or will) affect media creation, and an assortment of media-creation techniques.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 426 or MCO 494 (Digital Media Literacy II) OR Visiting University Student

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MCO	427	Misinformation and Society	Develops strategies and tactics to recognize misinformation, and inoculates students--and helps them join the battle--against it. Misinformation in our context is false information purposefully created to deceive and cause harm. It runs rampant in today's digital information ecosystem, and is becoming more and more sophisticated and difficult to spot. Bad actors are using powerful tools and techniques to infect our information supply, sowing confusion and discord. While there are laudable efforts to staunch the flow of misinformation, media users need help in deciding what information to trust. Examines the evolution of misinformation and the range of content types that fall under its umbrella. Explores tools, techniques and tactics that individuals can employ to identify misinformation, and gives them a head start on making informed decisions on what, and whom, they can trust.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA
MCO	428	DigMed & Freedom Expr 21st Cnt	Covers the extraordinary nature of media in this century. Examines how the media and communications tools of the past 100+ years-- telephones, print publications and broadcasting outlets--gave way to the Internet, a radically centralized network of networks that is rapidly re-centralizing. Also explores how the ability to exercise freedom of expression became radically easier in the early days of the Internet, but how that freedom, among others, may be in jeopardy--and, if so, what can be done about that, as individuals and members of communities.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 428 or MCO 494 (Media and Free Expression in the 21st Century) or MCO 598 (Media and Free Expression in the 21st Century)
MCO	430	International Mass Communicatn	Comparative study of communication and media systems. Information gathering and dissemination under different political and cultural systems.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	G	Prerequisite(s): minimum cumulative 2.00 GPA
MCO	436	Audience Research and Behavior	Prepares students to undertake or manage research on customers, employees, readers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data, so the course introduces new techniques and tools for developing audience insights, as well as traditional qualitative and quantitative research methods.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 436 or MCO 564 OR Visiting University Student
MCO	437	Aud Acquisition & Engagement	Students learn how to attract and grow audiences on established and emerging digital platforms. Students discover tactics and strategies for targeting, obtaining and engaging audiences by leveraging social media, search marketing and SEO, digital content, ecommerce, digital advertising and others.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA OR Visiting University Student
MCO	438	Digital Audience Analysis	Students discover how to access, manipulate and translate audience data. Students learn how to mine data from Web sites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. By working with real audience data, students receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 438 or MCO 565 OR Visiting University Student
MCO	439	Digital Audience Growth	Capstone challenges students to synthesize their digital audience knowledge and skills acquired in the previous courses through an applied project. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Dig Aud BS major or minor, or Intradis Studies (Dig Aud) BA major; MCO 307 w/ C or better; MCO 436 w/ C or better; MCO 437 w/ C or better; MCO 438 w/ C or better; min 2.00 GPA; Credit for only MCO 439 or MCO 566 OR Visiting University Student
MCO	450	Visual Communication	Theory and tradition of communication through the visual media with emphasis on the continuity of traditions common to modern visual media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	HU	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	456	Political Communication	Explores the intersection of media and politics and examines how the political system works and how journalists cover politics, political campaigns and elections. Students gain knowledge of opinion polling, debates, campaign finance, the party system, political communication, issues coverage, fact checking, crowd sourcing and more.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student

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MCO	465	Sports and Media	Designed for aspiring journalists and media users, explores why great sports journalism is essential to our society. Establishes the goals, dreams, and expectations for sports journalism and introduces ethical philosophy and popular ethical models and decision-making tools. Students then apply these tools to sports journalism.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	470	ExploringBusinessOfJournalism	Exposes students to broad media management problems. Focuses on how essential the bottom-line and quality journalism are to the entire journalistic and mass communication enterprise; helps students think about how to balance those two concerns.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journalism) OR Visiting University Student
MCO	473	Sex, Love, Romance-Mass Media	The role of the mass media in constructing and/or reinforcing unrealistic mythic and stereotypic images of sex, love, and romance.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum cumulative 2.00 GPA
MCO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6		Prerequisite(s): Barrett Honors student
MCO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6	L	Prerequisite(s): Barrett Honors student
MCO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		
MCO	502	Journalism Skills	Basic journalism skills for print, digital and broadcast. Significant hands-on practice writing and reporting stories on deadline as well as an immersion in the principles and practices of good journalism.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	8		Prerequisite(s): Cronkite School masters or PhD student
MCO	503	Media Law	Examines the philosophical and legal aspects of press freedom with an emphasis on the First Amendment from 1791 to present.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School master's student; Credit is allowed for only JMC 402 or MCO 403 or MCO 503
MCO	504	Journalism Skills Lab	Leadership is essential for the future of journalism; it is also essential for your career success. Through readings, personal reflection, discussion, guest speakers and hands-on class activities, explores what makes a good leader, how to cultivate good leadership as individuals and a cohort, and how to identify and seize leadership opportunities at the Cronkite School and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Master of Mass Communication student or Sports Journalism MA student; Credit is allowed for only MCO 504 or MCO 598 (Journalism Skills Lab)
MCO	505	Depth Reporting	Covers in-depth and investigative reporting and writing techniques. Students produce long-form, deeply sourced articles and produce multimedia with the goal of publication.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	510	Data Journalism	Students use data to tell stories, employing computer spreadsheets, database software, mapping programs and statistical techniques and learn how these tools can be used across a wide variety of beats and stories. Students negotiate with government officials for public records and use the internet and other online sources to find information and sources for stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	512	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)
MCO	515	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content; and the requisite storytelling skills to produce works of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 460 or MCO 515

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MCO	517	Public Relations Campaigns	Enables students to synthesize and apply the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. The student develops an in-depth understanding of a client's needs; conducts primary and secondary research; works with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; designs and develops media products for client; formally presents the proposal to the client and the class and analyzes, discusses then responds to public relations case studies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA or Master of Mass Communication student; Credit is allowed for only MCO 517 or MCO 598 (Public Relations Campaigns)
MCO	519	Strat Comm Leadership & Ethic	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite master's student; Credit is allowed for only JMC 419 or MCO 519
MCO	521	News Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience. Students complete assignments based on editorial judgment, technical skills and industry awareness and develop strategies for total newsroom management. In the process, students build confidence in producing news content and newscasts under deadline pressure and are prepared for a variety of producer-related roles in professional newsroom environments.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; Credit is allowed for only MCO 521 or MCO 598 (News Producing)
MCO	525	21st-Century Media Org&Entrepre	Focuses on the future of journalism, the future of journalism business organizations and entrepreneurship, new media experiences, online solutions to popular media problems, financial realities of the media, and media innovation.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	526	Advanced Issues Sports & Media	Through critical analyses of major contemporary issues in sports and media, provides tools and information needed to more fully engage in and become fluent with the main conversations about the business, technology and the future of sports journalism.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA major
MCO	529	Ethics Diversity Sports Journ	Explores the connection among sports media, journalism and society in an ethical and issue-oriented context. Students gain an understanding of the issues and ethics of the sports journalism profession while becoming better and more informed consumers of sports media. At the end of the course students have a better understanding of the importance of sports in our society and how that is reflected in coverage by local and national media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA major; MCO 502
MCO	530	Hist,Phil&Ethics of Journalism	Explores contemporary news media issues in a seminar setting. Critically analyzes historical and contemporary dilemmas in journalism ethics using a case study approach.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	531	Advanced Broadcast Reporting	Teaches news and information practices of networks and local television stations. Students report, write and edit broadcast packages with an emphasis on video.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	533	Adv Span-Lang Brdcast Rprt	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Opportunity to develop and master advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish needed to obtain an entry-level position in a small/medium market local television newsroom.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only MCO 533 or MCO 598 (Advanced Bilingual Broadcast Reporting)
MCO	534	AdvancedSpanish-LangReporting	Students get experience reporting and writing stories on topics related to Latinos in the U.S. Requires ability to write and report in Spanish, although students do not have to be proficient.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 434 or JMC 494 (Advanced Bilingual Reporting) or MCO 534 or MCO 598 (Advanced Bilingual Reporting)

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MCO	535	Latino and Transnational Issue	Focuses on some of the most pressing and controversial issues of the day that are taking place in the Southwest borderlands. Successful students move on to the Borderlands Initiative depth reporting project in the spring semester that includes an international reporting experience.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	536	Public Relations Research	Teaches the importance and practice of research in a public relations context. Students conduct research using qualitative and quantitative methods and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student; Credit is allowed for only MCO 536 or MCO 598 (PR Research)
MCO	540	Sports Reporting	Hands-on experience reporting, writing, script writing and video producing sports stories. Students report, write and produce professional-level, clear, well-reported, accurate stories and video packages about athletes and sports stories newsworthy in the Valley and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA student; MCO 502
MCO	541	Narrative Writing & Reporting	Students learn the elements of narrative journalism--structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing--and apply them to a long-form story they report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School masters student; MCO 502 with C or better; Credit is allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing)
MCO	544	Accountability in Journalism	Seminar about accountability journalism in the digital age: its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas about water quality and supply in Arizona.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School masters or PhD student; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism)
MCO	545	Techniques Investigative Rpt	Student teams work under the direction of a veteran investigative journalist, learning how to do research and reporting on projects to expose wrongdoing, focusing on public records, databases, in-depth interviews and how to conceptualize, organize and tell these stories on multiple platforms.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): MCO 502 with C or better; Credit is allowed for only MCO 502 or MCO 545
MCO	546	News 21 Seminar	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; MCO 502 with C or better; Credit is allowed for only JMC 446 or JMC 494 (News 21) or MCO 546 or MCO 598 (News 21 Seminar)
MCO	548	Non-Narr Video Storytelling	Teach students how to create video pieces that effectively communicate a story, information or concept to your audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Comm or Sports Journalism MA student; MCO 502 w/ C or better; Credit for only JMC 448 or JMC 494 (DSLR Vid Storytelling or Non-Narr Vid Storytelling) or MCO 548 or MCO 598 (DSLR Vid Storytelling or Non-Narr Vid Storytelling)
MCO	550	Issues in Coverage of Bus&Econ	Teaches the basics of business and economics reporting, one of the fastest-growing areas of journalism. Students learn what skills are needed to cover business and economic stories as well as how private companies operate and the factors that drive the economy. They also learn about opportunities in the field and hear from leaders in business journalism.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication master's or PhD student
MCO	551	Better Business Reporting	Provides training and practice in reporting and writing stories related to business and the economy. Students learn tools and techniques to enhance their coverage of various kinds of business stories, from profiles to financial reports. They learn best practices for pitching stories, cultivating sources, conducting effective interviews, structuring stories, using appropriate narrative elements and translating complex information for a general audience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better

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MCO	552	Data in Business Journalism	Students learn how to find powerful business and economic data from U.S. sources such as the Census Bureau, the Bureau of Labor Statistics, the Securities and Exchange Commission and the Federal Reserve. Examines international data sources of the United Nations, the World Bank, the European Union and the statistics offices of various countries. Covers basic mathematical and statistical formulas for working with business data, how to find stories in data using tools such as Microsoft Excel and Google Fusion Tables and how to create basic data visualizations that are useful for understanding business and economic trends.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better
MCO	553	Reporting on Business and Econ	Trains students in the basics of reporting about business and the economy. They learn to tell the stories behind companies, people and money, while improving their competency in using numbers in stories. Students have the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 OR Business Journalism MS student
MCO	555	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; Credit is allowed for only JMC 455 or JMC 494 (Digital Media Entrepreneurship) or MCO 555 or MCO 598 (Digital Media Entrepreneurship)
MCO	556	Media Entrepreneurship	Familiarizes students with media entrepreneurship and innovation in a quickly changing digital media environment. Students study the principles of entrepreneurship and innovation, assess their own tolerance for risk, evaluate opportunity and market conditions, and learn about various revenue models for entrepreneurial enterprises.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student; Credit is allowed for only MCO 494 (Media Entrepreneurship) or MCO 556 or MCO 598 (Media Entrepreneurship)
MCO	557	Advanced Radio Reporting	Students report and produce long-form radio stories in commercial and public radio formats. They develop planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news and business as well as hard news and feature reporting.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting)
MCO	560	Arizona Media Law	Case study approach to first amendment issues, media access, libel, confidentiality, and invasion of privacy as applied to media organizations in Arizona.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	561	Defining the Digital Audience	Who are the people who make up digital audiences? How do digital audiences behave? And why is it important to research, identify and monitor digital audiences and their engagement with your organization? Covers the very essence of the digital audience, exploring how community, consumer, social psychology and theory converge on digital platforms and social networks. Through case-study analyses, teaches how audiences differ across industries and platforms, the elements that engage or dissuade users, and how organizations use audience data to manipulate growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	562	Srch Engine Strat Dig Aud Acq	How to attract and grow audiences through strategic use of search engine marketing. Includes user search behavior, SEO (search engine optimization), tagging and coding for on-page SEO, SEM (search engine marketing), keyword research, competitive analysis, domain authority and pay-per-click advertising.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Business Journalism MS, Digital Audience Strategy MS; Digital Audiences cert, Investigative Journ MA, Journ & Mass Comm PhD, Master Global Mgmt (Digital Audience Strategy), Master Mass Comm, or Sports Journ MA student; MCO 561 w/B or better
MCO	563	Social Media Campaign & Engage	How to attract, engage and grow audiences on social media platforms through both organic and paid social media campaigns. Includes evaluating an organization's existing social media audience, identifying opportunities for audience growth across social media platforms, designing and generating content for specific platforms, measuring the impact of social media content, and developing an organizational strategy for managing social media across an enterprise.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Business Journalism MS, Digital Audience Strategy MS; Digital Audiences cert, Investigative Journ MA, Journ & Mass Comm PhD, Master Global Mgmt (Digital Audience Strategy), Master Mass Comm, or Sports Journ MA student; MCO 561 w/B or better

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MCO	564	Digital Aud Research&Behavior	Provides skills to undertake research on digital audiences, customers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data. Digital audience research as a subset of social research. Overviews both traditional and newer research methods for developing audience insights.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Digtl Aud Strategy MS; Digtl Aud cert, Investigative Journ MA, Journ&Mass Comm PhD, Mstr Global Mgt (Digtl Aud Strategy), Mstr Mass Comm or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 436 or MCO 564
MCO	565	Digital Audience Analytics	Provides skills to access, manipulate and translate audience data. How to mine data from websites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. Works with real audience data to receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Digtl Aud Strategy MS; Digtl Aud cert, Investigative Journ MA, Journ&Mass Comm PhD, Mstr Global Mgt (Digtl Aud Strategy), Mstr Mass Comm or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 438 or MCO 565
MCO	566	Digital Audience Management	Challenges students to synthesize their digital audience knowledge and skills acquired in previous courses through a culminating experience. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Digital Audience Strategy MS student; MCO 561 with B or better; MCO 562 with C or better; MCO 563 with C or better; MCO 564 with C or better; MCO 565 with C or better; minimum 3.00 GPA; Credit is allowed for only MCO 439 or MCO 566
MCO	570	Master Mass Comm Capstone	In this culminating program, students get an immersive experience in reporting and producing news across platforms. Students may choose the Cronkite News Phoenix Bureau, with opportunities to report on public affairs, borderland and Latino issues or business and the economy or work as digital producers. Students also may choose Cronkite News -- Broadcast, where students report and produce a half-hour weeknight newscast. Other options are sports bureaus in LA or Phoenix, the Cronkite News Washington Bureau, the New Media Innovation and Entrepreneurship Lab, the Public Relations Lab, the Public Insight Network and the Carnegie-Knight News21 investigative multimedia reporting program. Students work four full days a week under the supervision of a faculty member in a newsroom setting.	Y	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Investigative Journalism MA, Sports Journalism MA, Master of Mass Communication, Business Journalism MS, Digital Audience Strategy MS, Journalism and Mass Communication PhD, or Digital Audiences certificate student
MCO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Cronkite School of Journalism and Mass Communication graduate student
MCO	710	Research Methodology Mass Comm	Identifies research problems in mass communication and provides an overview of questionnaire construction as well as attention to survey, historical, content analysis, experimental and legal research methods.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism Mass Communication PHD students
MCO	711	Critical,Hist,Legal Research	Critical, legal and historical methods necessary to conduct qualitative mass communication research.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PhD student

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MCO	712	Freedom of Expression Theory	Examines philosophical and legal aspects of press freedom; emphasizes First Amendment theory evolution from 1791 to present.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PhD student
MCO	720	Mass Communication Theory	Analyzes various theoretic models of mass communication with emphasis on the applications of these theories to professional communication.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PhD student
MCO	722	Philosophy of Mass Comm	Mass media as social institutions, particularly interaction with government and public; emphasizes criticism and normative statements. Seminar. Prerequisite: Journalism and Mass Communication PhD student.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PhD student
MCO	755	Research Apprenticeship	Students and faculty work on a research project with the expected outcome of a scholarly publication.	N	RSC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Pre-requisite: Journalism and Mass Communication PhD student
MCO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MDC	211	Intro to Digital Sound	Examines how technology is used as listeners, creators, critics, remixers, and a wide variety of other roles to participate in and gain a deeper understanding of music and its role in our lives.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for MDC 211 or MUE 294 Open Minds, Digital Ears
MDC	311	Comp Perf Hybrid Ens	Provides opportunities to perform music in a variety of digital and hybrid contexts using both physical and digital instruments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MDC 311 or MUE 394 (Performing in Digital and Hybrid Music Groups)
MDC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MDC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MDL	410	Laboratory Leadership	Clinical lab leadership and management. Applies the principles of personnel management and supervision, allocation of resources, and staff communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite: Admission to Medical Laboratory Science program

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MDL	420	Advanced Clinical Urinalysis	Theory and applications of principles in urinalysis with emphasis on the etiology, pathophysiology, and clinical manifestations of renal and other metabolic defects as reflected by the analysis of urine and other body fluids.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	2		Pre-requisites: BIO 182; Admission to Medical Laboratory Science program
MDL	421	Urinalysis Body Fluid Adv Prac	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of urine and body fluids, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 420 with C or better
MDL	430	Advanced Hematology	Theory and application of principles in hematology, with emphasis on techniques to evaluate blood dyscrasias and analyze body fluids. Etiology, pathophysiology, clinical manifestations, and treatment of blood dyscrasias/hemostatic defects.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182; Admission to Medical Laboratory Science program
MDL	431	Hematology Adv Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of blood samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		
MDL	440	Advanced Immunohematology	Theoretical and practical application of clinical immunology and immunohematology. Emphasizes serological techniques that aid disease diagnosis and blood donor selection.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182; MIC 205; Admission to Medical Laboratory Science program
MDL	441	Immunohematology Immuno Pract	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 440 with C or better
MDL	450	Advanced Clinical Microbiology	Theoretical and practical application of clinical microbiology. Emphasizes identification of pathogenic organisms, molecular techniques, mycology, virology, and parasitology.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	451	Clinical Micro Practicum	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 450 with C or better
MDL	460	Advanced Clinical Chemistry	Theoretical and practical applications of clinical chemistry with particular emphasis on correlation of test results to disease status, statistical analysis, pre-analytical testing, critical values, calibration, and trending and tracking of quality control results.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	461	Clinical Chem Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis routinely used clinical chemistry testing.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 460 with C or better
MED	100	Intro to Medical Studies	Presents basic concepts related to sciences, social sciences, humanities, statistics and other topics related to medical and health studies. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		
MED	275	Elem Hospice & Palliative Care	Introduces hospice and palliative care through direct experience communicating and working with persons on hospice and the nurses, physicians, social workers and chaplains who provide care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
MED	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	300	Hist Contemp Issues in Health	History of medicine in the modern world and its relationship to contemporary issues in medicine with emphasis on the broader context of ways in which technology, personalized medicine, genomics, ethical issues and shared decision making between patients and providers have evolved.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): minimum 30 hours OR Visiting University Student
MED	320	Appl Medical/HealthCare Ethics	Integrates the theory and practice of ethics within health-related disciplines and the application of bioethics by health science professionals, including health disparities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	HU	Prerequisite(s): minimum 30 hours OR Visiting University Student
MED	375	Alzheimer's & Olther Dementias	Covers Alzheimer's disease and related dementias through discussions with health care professionals and direct experience working with persons with Alzheimer's disease and their caregivers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only MED 375 or MED 394 (Intro Dementia & Alzheimer's Disease) OR Visiting University Student
MED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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MED	417	Impact of Violence on Health	Approaches violence from a public health perspective, using the Centers for Disease Control, National Center for Injury Prevention and Control, as a benchmark. Applies an interprofessional approach to violence, to include medicine, nursing, law, law enforcement, social work, psychology, economics and education, among others. Discusses principles of epidemiology, underlying etiologies and sequelae and evidence-based strategies for prevention throughout the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
MED	445	Prev & Mgmt of Chronic Disease	The United States spends more on health care than any other developed country in the world, yet our health care outcomes are not superior. We face an epidemic of chronic diseases which are the leading causes of mortality and disability in the U.S., despite being highly preventable. Examines chronic disease in the U.S. and provides an overview of prevention and management with a focus on population health and social determinants of health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
MED	450	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
MED	475	Palliat Care: Managing Illness	Includes reading, discussion and study on palliative care including national trends, international models, ethics, mental health issues, business and workforce issues, boundaries between patients and caregivers, the intersection between humanities and palliative care, and the future of the field. Honors contracts are available.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only MED 475 or MED 494 (Advances in Palliative Care) or MED 494 (Palliative Care Managing Complex Serious Illness) OR Visiting University Student
MED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 3.00 GPA
MED	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
MED	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
MED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	
MED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
MEE	322	Structural Mechanics	Three-dimensional stress and strain analysis, generalized Hooke's Law, failure theories for ductile and brittle materials, combined loading, stress concentrations, energy methods, mechanical vibrations and structural dynamics, fatigue.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Mech Engr BSE major; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit allowed for only AEE 325 or MAE 325 or MEE 322 or MAE 394 (Structural Materials in Aerospace) OR Visiting University Student
MEE	323	Computer-Aided Engineering II	Introduces finite-element analysis, pre- and postprocessing, solving problems with FEA.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2		Prerequisite(s) with C or better: Aerospace Engineering BSE major: AEE 325 (or MAE 325 or 394 - Aerospace Structures and Materials); MAE 214 or Mechanical Engineering BSE major: MAE 214; MEE 322 (or MAE 322) OR Visiting University Student
MEE	340	Heat Transfer	Conduction, convection, radiation and phase change heat transfer processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering BSE major; MAE 241 with C or better; MAE 242 with C or better; MAE 384 with C or better OR Visiting University Student

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MEE	342	Principles Mechanical Design	The design process: conceptual and embodiment design of mechanical elements; form synthesis; material selection, failure modes, manufacturability tolerances, common mechanisms and machine elements.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE major; MAE 202 w/ C or better; MEE 322 w/ C or better; MSE 250 w/ C or better; Pre- or corequisite(s): MEE 323 w/ C or better if completed; MEE 340 w/ C or better if completed OR Visiting University Student
MEE	351	Manufacturing Processes	Production technique and equipment. Casting and molding, forming, machining, joining and assembly, computer-integrated manufacturing, rapid prototyping, and electronics manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MSE 250 with C or better OR Visiting University Student
MEE	434	Internal Combustion Engines	Performance characteristics, combustion, carburetion and fuel-injection, and the cooling and control of internal combustion engines. Computer modeling.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 or MEE 482 with C or better; Credit is allowed for only MEE 434 or MAE 598 (Internal Combustion Engines) OR Visiting University Student
MEE	440	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; MEE 340 with C or better; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)
MEE	441	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; AEE 360 or MEE 340 with C or better; MAE 301 with C or better; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441 OR Visiting University Student
MEE	446	Energy Systems Design	Applies mechanical engineering principles and techniques to modeling, analysis, and synthesis of energy systems and components. Design optimization. Design project.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering (Energy and Environment) BSE major; MAE 301 with C or better; MAE 400 with C or better; MEE 340 with C or better; MEE 482 with C or better; Pre- or corequisite(s): MEE 342 with C or better if completed
MEE	472	Intermediate Fluid Mechanics	Second course covering fundamental concepts relating to engineering fluids. Flow meters, airfoil and wing aerodynamics; pipe flow; normal and oblique shock waves. Nozzles. Open Channel Flow. Turbomachinery flows including performance curves and maps, scaling and affinity laws. Elective for Aerospace Engineering and Mechanical Engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; senior standing; MAE 242 with C or better; MAE 384 with C or better
MEE	482	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics, property relationships, power and refrigeration cycles, and reactive systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 240 or 241 with C or better; Credit is allowed for only MAE 382 or MAE 570 or MAE 598 (Thermodynamics) or MEE 482 OR Visiting University Student
MEE	488	Mech Engineering Design I	Conceptual and embodiment design; modeling; rapid prototyping. Team project. MEE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Mech Engr major; MAE 301; MAE 318; MAE 384; MEE 323; MEE 340; MEE 342; Pre- or corequisite(s): MAE 400 with C or better if completed OR Visiting University Student
MEE	489	Mech Engineering Design II	Detail design; fabrication and testing. Team project. MAE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 488 with C or better OR Visiting University Student

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MEE	491	Experimental Mechanical Engr	Experimental and analytical studies of phenomena and performance of fluid flow, heat transfer, thermodynamics, refrigeration, and mechanical power systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Mechanical or Aerospace Engineering major; MAE 301 with C or better; MAE 318 with C or better; MEE 340 with C or better; Pre- or corequisite(s): MEE 342 with C or better if completed OR Visiting University Student
MEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MET	212	Appl Engr Mechanics: Dynamics	Masses; motion kinematics; dynamics of machinery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 211 (or CON 221 or MAE 212); MAT 266 (or MAT 271)
MET	213	Applied Mechanics of Materials	Stress, strain, stress-strain relations. Axial, shear, bending, torsional and combined loads and deflections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 211 or CEE 210, or MAE 212
MET	214	Appl Mechanics/Materials Lab	Measurements of loads and deformations relating stress and strain in axial, shear, bending, torsional, and combined loading configurations.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: MET 213, MAE 213, MSE 211, CON 223, CEE 213 OR be co-enrolled in MET 213
MET	230	Intro to Engineering Materials	Introduces materials and their properties, emphasizing basic concepts and structures and how these properties relate to manufacturing and design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
MET	300	Applied Material Science	Principles of materials science emphasizing concepts relevant to design, manufacturing, and use. Covers metals, polymers, ceramics, and composites.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR MSE 250 OR Applied Science (Manufacturing Technology & Management) major; MET 230
MET	309	Nondestructive Test/Qual Assur	Part and material inspection using metrology and nondestructive inspection tools and techniques. Theory and application with use of pertinent standards.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	321	Intro to Automotive Engr	Engineering principles and the design of ground vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 212. Pre- or corequisite(s): MET 213, 340
MET	331	Machine Design I	Applies mechanics to design of machine elements and structures. Stress analysis, failure modes, tolerances, cylindrical fits, and shaft design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 213 (or CON 223 or MAE 213)
MET	344	Casting and Forming Processes	Analyzes various forming processes to determine load requirements necessary for a particular metal-forming operation. Information used to select equipment and design tooling. Metal casting processes and design of castings. Introduces powder metallurgy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	345	Advanced Manufacturing Process	Material removal processes emphasizing advanced turning, milling, and machinability studies using cutting tools. CNC programming for machining and turning centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	351	Introduction to Automation	Introduces automation. Topics include assembly techniques, fixed and flexible automation systems, robots, material-handling systems, sensors, and controls.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 210
MET	396	Professional Orientation	Topics related to a successful career in engineering technology industry. Includes safety, life-long learning, ethics, and career planning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisite: Junior or Senior standing
MET	401	Quality Assurance	Statistical quality control methods, design of experiments, sampling, gauge requirements and specifications, use of quality assurance tools.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: STP 420 (or APM 301); Credit is allowed for only MET 401 or 501
MET	409	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Junior or Senior standing; Credit is allowed for only MET 409 or 509
MET	410	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 341; Credit is allowed for only MET 410 or 510
MET	415	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 341; STP 420; Credit is allowed for only MET 415 or 515
MET	416	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Pre-requisite: MET 341; Credit is allowed for only MET 416 or 516
MET	418	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300 or MSE 250. Credit is allowed for only MET 418 or 518
MET	421	Vehicle Powertrains	Internal combustion engine design, performance and operation, and power transmission systems within vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321

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MET	423	Veh Chassis & Running Gear Des	Design and manufacture of chassis, structures, steering and braking systems and components, wheels and tires, suspension systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321; MET 331
MET	424	Vehicle Electrical Systems	Vehicle electrical power and signal systems, computer control and analog control systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; MET 321; MET 421
MET	426	Vehicle Thermal Design	Heat management in vehicle systems, including thermal design of engine and transmission cooling systems, cabin heating, and air conditioning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 421; Pre/Co-requisite: MET 434
MET	427	Vehicle Sys Integratn & Testng	Systems engineering principles. Design of the interfaces between vehicle subsystems. Testing of integrated systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 423; MET 424
MET	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
MET	434	Engineering Thermo-Fluids III	Transient conduction, convection and radiation heat transfer, heat exchangers, thermo-fluid systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 340
MET	438	Machine Design II	Applies mechanics to the design of machine elements and structures. Emphasizes basics of gears, springs, brakes, clutches, and bearings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisites: MET 331 OR Fulton Schools of Engineering graduate student
MET	440	Finite Element Analysis	Analyzes machine elements, frames, and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 331
MET	442	Specialized Production Process	Nontraditional manufacturing processes, emphasizing EDM, ECM, ECG, CM, PM, HERF, EBW, and LBW.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 (or EGR 294 [Engineering Materials & Manufacturing] or MET 231). Credit is allowed for only MET 442 or MET 502
MET	443	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 345; Credit is allowed for only MET 443 or 514
MET	444	Production Tooling	Design and fabrication of jigs, fixtures, and special industrial tooling related to manufacturing methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): MET 309. Credit is allowed for only MET 444 or MET 504
MET	455	Automation Systems Integration	Applies sensors and devices and their integration with PLCs and computers into automated devices and systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 351
MET	460	Capstone Project I	Group project designing, evaluating, and analyzing components, assemblies, and systems. Develop products/manufacturing techniques demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300; 331; 340; 345
MET	461	Capstone Project II	Small-group projects applying manufacturing techniques, with emphasis on demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 460
MET	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
MET	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
MET	501	Statistical Qlty Control Appls	SPC problem-solving techniques for implementation in industrial setting; design and analysis of experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 401 or 501
MET	504	Appl of Production Tooling	Design and fabrication of fixtures, jigs, templates, and specialized industrial tooling for manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 444 or 504
MET	509	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; credit is allowed for only MET 409 or 509
MET	510	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 410 or 510
MET	514	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 443 or 514
MET	515	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 415 or 515
MET	516	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 416 or 516

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MET	518	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 418 or 518
MET	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MET	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	308	Manufacturing System Project I	Focuses on design for product realization in a manufacturing environment. Projects are industry driven and applicable to low-volume product development.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	318	Manufacturing Systems Proj II	Focuses on process development for high-volume manufacturing in the competitive global economy. Uses discrete event simulation software to model and study the manufacturing environments.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 219 with C or better; MFG 382 with C or better
MFG	381	Processes&Validate Lab	Theory of basic manufacturing processes accompanied by the fundamental skills; safety practices while working with engineering drawings, machine tools and metrology equipment related to manufacturing.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	382	Modeling Manufacturing Sys I	Modeling of manufacturing systems using discrete event simulation. Introduces basic manufacturing-related data and system configurations. Uses commercial simulation software to build and analyze model output data.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 219 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	383	Comm in Production Environment	Effective communication is essential in all production environments for efficiency, yield and safety. Covers the major applications within a company and the expectations for the individual's capabilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better OR Visiting University Student
MFG	385	Design for Manufacturing	Introduces the methods employed to design and produce products that can compete in the global marketplace. Topics include design for manufacturability and assembly, product life-cycle, economics of design and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 with C or better
MFG	386	Integrated Circuit Manufact	Integrated circuit manufacturing combines judicious selection of materials with nano-meter features to create complex digital and analog circuits. The process demonstrates extreme applications of design, control and resource organization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	387	Industrial Automation	Introduces concepts and application of industrial automation systems. Topics include PLC control systems, embedded control systems, sensing technologies, robotics and material-handling systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
MFG	461	Manufact Enterprise Operations	Covers the role of engineers in the manufacturing environment. Aspects of this role include troubleshooting, performance control, risk mitigation and financial planning. Provides tools and approaches for understanding and representing costs and making decisions based on these costs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 280 with C or better; MAT 343
MFG	472	Additive Manufacturing	Additive Manufacturing (AM) is driving a paradigm shift in design and manufacturing. Provides hands-on exposure across a wide range of commercial 3D printers. Topics include fundamentals of polymer, metal and composite AM processes and process capabilities such as rate and resolution. Introduces material properties and their dependence on raw material properties and process parameters; existing and new applications of AM; and a perspective on current and future technical challenges in AM. Provides a foundation for a more in-depth study of design for AM, and AM materials and structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218
MFG	480	Advanced Stat for Manufacture	Applies experimental design and statistical process control in the manufacturing environment. Uses engineering statistical software to formulate and solve problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 280 with C or better
MFG	481	Enterprise Economics	All manufacturing is about cost. Considers the components of these costs and presents a number of mathematical tools and approaches for representing, understanding and making decisions based on them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 280 with C or better

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MFG	482	Materials Science in Manufact	High-technology manufacturing combines and exploits the properties of a wide range of materials. Provides a science-based view of materials selection and optimization for product manufacturability and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	4		Prerequisite(s): CHM 116 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	485	Engineering Internship	Experiential education. Local company oversees a student project experience at their facility.	N	PRA	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		Prerequisite(s): minimum junior standing
MFG	486	CNC Computer Programming	Theory and applications of NC languages using CAM software and CNC machine tools. Overview of advanced manufacturing processes including production CNC part programming ranging from current design to inspection standards.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MFG 381 with C or better
MFG	487	Casting and Forming Processes	Theory and practice of metal casting processes and design of castings. Analysis of various forming processes to determine load requirements. Theory and practice of tooling design for stamping operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 with C or better
MFG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6		Prerequisite(s): Barrett Honors student
MFG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6	L	Prerequisite(s): Barrett Honors student
MFG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
MFG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
MFG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
MGT	300	Org & Mgt Leadership	Analyzes strategic, behavioral, and human resource management perspectives, including principles of strategic management and leadership of human resources.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s) w/C or better: W.P. Carey, Engr Mgt, or Sec Ed (Bus); ACC 231, 232, or 261; ECN 221, ECN 231, IEE 380, or STP 280; MAT 211, 266, or 271; Pre- or coreq(s): ACC 240, 241, 242, or 271 with C or better if completed OR Visiting University Student
MGT	302	Principles Intl Business	Multidisciplinary analysis of international economic and financial environment. Operations of multinational firms and their interaction with home and host societies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W. P. Carey BS or BA major; ECN 211, 212, 213, or 214 with C or better OR non-business major; minimum 2.50 GPA; minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MGT	303	Honors Org Strategies/Leadersh	Overview of business strategy principles, management processes, motivation, and leadership.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey School of Business Honors student; PSY 101 or 304 or SOC 101 or 301 with C or better; ECN 221 or 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271 with C or better if completed
MGT	310	Collaborative Team Skills	Development of skills in managing and working in collaborative environments. Theories and applications in small group dynamics and team facilitation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major OR non-business student; minimum 3.00 GPA; minimum 56 hours OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MGT	320	Organizational Behavior	Management processes, fundamentals of business-level strategy, individual difference issues, motivation and leadership of people in organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s) with C or better: Business Entrepreneurship BS or Management major; ACC 241, 242, or 271; ECN 221 or 231; MGT 300 or 303; PSY 101 or PSY 304 or SOC 101 or 301 OR Visiting University Student
MGT	380	Managemnt & Strategy Nonmajors	Introduces the functions and applications of management in organizations, including controlling, decision making, leadership, motivation, planning, and social responsibility. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): Non-Business major; minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student OR Visiting University Student
MGT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W. P. Carey BS or BA student; Pre- or corequisite(s): ACC 240, 241, 242, or 271 with C or better
MGT	400	Cross-Cultural Management	Cultural role in international business relations; applied principles of cross-cultural communications, negotiations, and management; regional approaches to business relations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	C & G	0Prerequisite(s): WP Carey BS or BA student OR non-business student with minimum 2.5 GPA and minimum 56 hours; MGT 300 or 303 or 320 or 380 with C or better. OR Visiting University Student
MGT	404	Chinese Lang & Global Bus Comm	Capstone course designed to synthesize the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Chinese Language and Culture. Analyzes case studies in which Chinese language and cultural skills are used to develop communication strategies in doing business in China. Learn new tools and techniques of analysis to enhance communication with Chinese business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with the Chinese and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment. Students are proficient in communicating in Chinese prior to taking this course.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; CHI 302 with C or better; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better
MGT	405	Spanish Lang & Global Bus Comm	Synthesizes the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Spanish Language and Culture. Students proficient in communicating in Spanish analyze case studies in which Spanish language and cultural skills are used to develop communication strategies in doing business in Spanish-speaking countries. Students learn new tools and techniques of analysis to enhance communication with their Spanish-speaking business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with Spanish speakers and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better; SPA 314 with C or better
MGT	411	Leading Organizations	Comprehensive overview of leadership in organizations. Provides students with understanding of leadership research and its applications to global organizations and the development of leaders.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 303, 320, or 380 with C or better OR Non-Business majors; MGT 300, 303, 320, or 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	420	Human Resource Management	Development of skills and knowledge to lead associates effectively: hiring, developing, evaluating, retaining, and rewarding employees. Preparation for leadership roles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BS or BA major OR Non-Business student; MGT 300, 303, 320, or 380 with C or better; minimum 3.0 GPA; minimum 56 hours OR Visiting University Student

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MGT	421	Compensation in Organizations	Develops knowledge of theory and research in motivation, compensation and rewards, and skill in applying such knowledge to important compensation and reward decisions. Discusses strategic compensation and reward systems issues. Explores in detail a variety of monetary and nonmonetary reward systems; the motivational impact these systems have on employees, teams, and CEOs; and the performance impact they have on organizations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better OR Visiting University Student
MGT	422	Staffing	Focuses on the effective management of the flow of talent into and through organizations. Covers human resource planning, recruiting and selection, career transitions and other workforce movement. Provides opportunities to develop hands-on skills that are relevant to effectively managing talent flow.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better; MGT 421; MGT 423 OR Visiting University Student
MGT	423	Training & Development in Orgs	Familiarizes students with the training and development function in organizations. Although tailored to students interested in human resources management, the course may also be relevant to students who may at some point be involved in training and development within an organizational context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better OR Visiting University Student
MGT	424	Employment Law	Provides an overview of U.S. employment law at both the federal and state levels. Reviews employment at will and wrongful discharge, employment torts, privacy, discrimination law, worker's compensation, occupational safety and health, unemployment, federal compensation laws, and the law of noncompetition and trade secrets. Designed for individuals preparing for careers in human resource management, labor relations or dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better; MGT 421; MGT 423; Pre- or corequisite(s): MGT 422 OR Visiting University Student
MGT	425	Global Human Resources	Explores the importance of international business management in the context of international human resource management, including topics on culture, compensation and benefits, international organizations and their structures, international assignment management and the legal and regulatory considerations that global organizations face. Identifies differences in operating a domestic versus international business and how business practices need to be adapted to operate successfully in foreign markets. Covers global strategy and structure; understanding and managing cultural differences; design and alignment of global HRM practices; and the global HR function.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better OR Visiting University Student
MGT	430	Negotiations	Improves student's understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Give students experience in bargaining and negotiation, as well as provide a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning--students spend most of their time participating in exercises and negotiation simulations, as well as discussing negotiation-based cases involving issues that often arise in the workplace. Provides a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business student with minimum 3.00 GPA and minimum 56 hours; MGT 300, 303, or 310 or TMC 330 with C or better OR Visiting University Student
MGT	450	Consulting Projects	Describes and analyzes business processes. Generates and evaluates alternatives. Creates improvement and implementation plans.	N	PRA	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L	Prerequisite(s): W.P. Carey BS or BA major; ENG 301 or 302 with C or better; MGT 300 or 303 with C or better; MGT 411 with C or better; MKT 300, 302 or 303 with C or better; Pre- or corequisite(s): FIN 300, 302 or 303 with C or better if completed
MGT	459	International Management	Concepts and practices of multinational and foreign firms. Objectives, strategies, policies, and organizational structures for operating in various environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W.P. Carey BA or BS major, OR non-Business student; MGT 302 or ECN 306 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): W.P. Carey BA Human Resources or BS Business Entrepreneurship or BS Management major

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MGT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student
MGT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student
MGT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 302, 303, or 310 with C or better OR non-business major; MGT 300, 302, 303, or 310 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisites: W. P. Carey BS or BA student OR non Business students with a minimum GPA of 2.50 and either at least 56 earned hours or non degree students OR Graduate students
MGT	501	Basics of Org Theory/Behavior	Allows students to understand the human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	502	Organizational Behavior	Understands human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): specific W.P. Carey students
MGT	513	Mindful Leadership	Provides a transformative experience that aids in developing skills associated with being a mindful leader. Focuses on introducing the concept of mindful leadership and explaining how to use it to achieve personal and professional goals. Then concentrates on using mindful leadership to lead individuals and teams. Specific learning goals include: (1) to enhance understanding of mindful leadership; (2) to improve skills in using mindful leadership to achieve personal goals; (3) to improve skills in using mindful leadership to lead individuals and teams; and (4) to propose a transformative plan aimed at increasing use of mindful leadership.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey graduate student
MGT	520	High-Impact Leadership	Addresses the inherent ambiguity surrounding effective leadership by providing a toolkit of tangible behaviors to ensure leaders create "high impact" in all areas of their professional and personal lives. Emphasizes what high-impact leaders do differently and uniquely to achieve results while also inspiring loyalty in relationships. Covers core topics including building executive maturity and presence, developing and delivering compelling messages, inspiring those around you, building a strong relationship network, establishing credibility, and managing upward relationships. Includes peer dialogue, extensive presentation skills training, and assignments based on students' real-life leadership experiences.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 520 or 591 (High Impact Leadership)
MGT	525	Leadership and Teamwork	A key objective of the W. P. Carey Full-Time MBA program is to develop each student's leadership competencies, which are essential competencies as the individual enters the workforce and advances through organizations. During the FT MBA program, each student participates in the Executive Connections program. This program gives each student an opportunity to enhance his or her understanding of key leadership competencies, apply an experiential process of leadership development, and meet one-on-one with an executive coach to deeply explore and reflect on personal leadership competencies and goals for development.	N	LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	0.5-3		Prerequisite(s): WPC MBA degree student

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MGT	526	Future World of Work	Focuses on the future world of work in terms of how organizations need to be agile along with their leaders. Focuses on the skills individuals need to be successful in the future world of work, in essence, the Forward Focus leadership skills. A critical component of this course is partnering with executive mentors from the Executive Connections Program. Also pairs well with the Interdisciplinary Learning Labs which gives students experiential learning in terms of some of the skills needed in the future.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	528	Basics of Negotiations	Contemporary management issues, including environmental, project and supply chain management; new product development; quality control; TQM. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	530	Influence and Negotiations	Improves students' understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Gives students experience in bargaining and negotiation, as well as provides a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning-- students spend most of their time participating in exercises and negotiation simulations (including negotiating job offers), as well as discussing negotiation-based cases involving issues that often arise in the workplace. The goal is to provide students with a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; Credit is allowed for only MGT 530 or MGT 591 (Negotiations)
MGT	540	Entrepreneurship	Capstone case-based course covering all aspects of starting a business: opportunity identification, evaluation, concept development, identifying required resources, acquiring those resources, launching the entity, managing growth, and ultimately, harvesting the enterprise. Revolves around a series of cases, readings and class discussions designed to build a comfort level with understanding and solving problems faced every day, in real life, by a broad spectrum of entrepreneurs at various phases of venture development. Significant emphasis on understanding the valuation and financing of entrepreneurial ventures interwoven through discussions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; ACC 502 with C or better; FIN 502 with C or better; Credit is allowed for only MGT 540 or MGT 591 (Entrepreneurship)
MGT	545	Becoming Leaders Who Matter	Addresses core questions: What does it mean to be a leader who really matters? How can you become such a leader? Today's competitive and complex environment requires leaders who are equipped with not just the functional and technical skills necessary to run a business but, more significantly, the leadership skills that allow the business and the people involved in it to thrive. Provides an opportunity to reexamine thinking about leadership and assess current skills and competencies in this area. Highly interactive learning environment with case analyses, exercises, discussion, guided reflection activities, assessments and group work. Covers topics such as self awareness (motivations, values, and leadership style), developing perspective as leaders, the social context of leadership, the role of emotions in the workplace, using life experiences to extract leadership lessons.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 545 or 594 (Leading w/Authenticity & EI OR Becoming Leaders Who Matter)
MGT	565	Business and Public Policy	Takes a managerial perspective to examine the interface between businesses and their external political environments. Potential changes in public policy can affect current operations and future opportunities. Examines how managers can anticipate and affect the formation, modification and enforcement of public policy in various institutional environments.	N	LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey MBA Executive Program or W.P. Carey School of Business graduate student; Credit is allowed for only MGT 565 or MGT 591 (Business and Public Policy)
MGT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MGT	586	Basics of Strategic Leadership	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
MGT	588	Sources Competitive Advantage	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): MBA degree student
MGT	589	Strategic Management	Formulation of strategy and policy in the organization, emphasizing the integration of decisions in the functional areas.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): MBA degree student
MGT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): W.P. Carey graduate student
MGT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: MBA degree student
MGT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Management and Entrepreneurship	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
MGT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	140	Sounds and Cultures	Introduces a range of practical and intellectual challenges presented by encounters with various kinds of music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): Music or Performance and Movement major OR Visiting University Student
MHL	201	Media Literacy for Musicians	Instruction in basic Macintosh computer literacy, including generic applications and music-specific programs with hands-on experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
MHL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MHL	339	Undergraduate Bibliography I	Research tools and methods in musicology, concentrating on resources pertinent to the study of music from Antiquity to the Baroque.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course OR Visiting University Student
MHL	340	Undergraduate Bibliography II	Research tools and methods in musicology, concentrating on resources pertinent to the period 1750-present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course
MHL	341	Music History I	Western European art music from Antiquity through Baroque. Identification/analysis through listening; application of historical and analytical concepts; research project comprising fresh thesis, detailed musical research, personal reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student

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MHL	342	Music History II	Western European, American art music from Classical period to present. Identification/analysis through listening; transfer/application of music/analytical concepts; research project comprising fresh thesis, insightful musical research/reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student
MHL	344	Music in World Cultures	Examines the relations among music, dance, theatre, religion, and social status in Asia, Africa, Oceania, Europe, and the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): minimum 42 hours OR Visiting University Student
MHL	363	Survey of Russian Music	Examines music and musical life in Russia, the Soviet Union, and the post-Soviet C.I.S. from the Middle Ages to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Music major; MHL 140 with C or better
MHL	365	Popular Music and Race	Examines popular music in the United States with emphasis on historical, sociocultural, economic and aesthetic concerns as they intersect with issues of race and race relations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & C	Prerequisite(s): MTC 221 with C or better; Credit is allowed for only MHL 365 or MHL 394 (Pop Music and Race) or MHL 494 (Pop Music and Race) OR Visiting University Student
MHL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major
MHL	437	Music in the Baroque Era	Examines music, culture and aesthetics in the 17th and early 18th centuries.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major or minor; MHL 140 with C or better; MTC 221 with C or better; minimum 45 hours OR Visiting University Student
MHL	438	Topics in 18th-Century Music	Selected topics exploring the musical styles of the 18th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L & H	Prerequisite(s): Music major; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	439	Topics in 19th-Century Music	Selected topics exploring the musical styles of the 19th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L & H	Prerequisite(s): Music major; MHL 140 with C or better; MTC 223 with C or better
MHL	440	Topics in 20th-Century Music	Selected topics exploring the musical styles of the 20th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): Music major; MHL 140 with C or better; MTC 223 with C or better
MHL	456	History of Opera	Development of opera from its creation ca. 1600 to present. Emphasis placed on major stylistic developments and representative works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better
MHL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MHL	490	Capstone I: UG Thesis Research	Selection of topic and research toward the completion of an undergraduate thesis of no fewer than 50 pages.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 339
MHL	491	Capstone Project II: UG Thesis	Completion of an undergraduate thesis in musicology or ethnomusicology of no fewer than 50 pages.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 490
MHL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MHL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student
MHL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better OR Visiting University Student
MHL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MHL	532	Music Bibliography	Major historical and analytical writings; systematic and historical collections of music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate Music student
MHL	547	Music and Healing	Combines elements of musicology, philosophy anthropology music therapy, neuroscience, psychology; investigates ways music has been proven to positively affect the "human condition"; focuses on what music means to humans.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MHL 547 or MHL 494 (Music and Healing) or MHL 598 (Music and Healing)
MHL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MHL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student who has passed audition
MHL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	632	Applied Musicology	Explores practice-oriented entrepreneurial opportunities and methods in musicology, acquires knowledge and develops skills in community engagement and outreach, explores pathways of professional publication and network building, and participates in organizing curated concert series and scholarly conferences.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 532
MHL	657	Topics in Symphonic Literature	Examines the evolution of the symphony and symphonic poem from the early classic era through the 19th century, with emphasis on the analysis of selected works.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	668	Introduction Ethnomusicology	Experiencing theory and methodology by being ethnomusicologists through musical performance, primary writings on fieldwork, career structuring, the history of the discipline, its relationship with historical musicology, and the cultural theories which ethnomusicologists draw on.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	670	Area Studies-Ethnomusicology	Study of the music of a particular culture, country, or area (e.g., music of Mexico, Latin America, China, Africa).	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	675	Choral Music & Institutions	Examines the history of choral music through the lens of choral institutions: patronage, education, ritual, performing forces, status (professional vs. amateur), and locale.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	N	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	798	Research Colloquium	Interactive research forum featuring research presentations and discussion among musicology students, faculty and guest speakers from across campus and other institutions. Encourages students to engage in constructive dialogue with their peers as well as with faculty and guest speakers in a collegial environment conducive to exchange and collaboration. Supervised by a faculty panel from the musicology division.	N	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSI 601 or 602

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MHL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	205	Microbiology	Introductory microbiology, emphasizing basic principles of microorganisms (bacteria, protozoa, algae, fungi, and viruses) and the role they play in health, ecology, and applied fields. May not be used for Microbiology credit unless a diagnostic test is passed. Both MIC 205 and MIC 206 required for SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SG	Prerequisite(s): CHM 101 or 113 OR Visiting University Student
MIC	206	Microbiology Laboratory	Principles and lab techniques used in identifying and handling microorganisms. Both MIC 205 and 206 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	SG	Pre- or corequisite(s): MIC 205 or 220 with C or better if completed OR Visiting University Student
MIC	220	Biology of Microorganisms	Introductory microbiology for students majoring in the life sciences. Detailed study of microbial cells, their structure, genetics, physiology, and taxonomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or 281 with C or better; CHM 116 OR Visiting University Student
MIC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	302	Advanced Bacteriology Lab	Advanced lab techniques in bacterial growth, physiology, and genetics, with an emphasis on quantitative data and formal lab reports. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student
MIC	360	Bacterial Physiology	Mechanisms and control of cell metabolism, structures, and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	379	Medical Bacteriology	Principles of medical bacteriology with emphasis on bacterial infections, diagnostic testing, clinical symptoms, pathogenesis, and treatments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	401	Research Paper	Paper of 15 or more pages based on library or lab research in collaboration with a faculty member. Required of all Microbiology majors. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): MIC 206 with C or better; MIC 220 with C or better; senior standing OR Visiting University Student
MIC	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student
MIC	421	Experimental Immunology	Introduces the basic techniques, methods, and assays used in immunology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 or 360, MBB 247, or MIC 220 with C or better OR Visiting University Student
MIC	425	Advanced Immunology	Surveys recent advances in immunology, including lymphocyte membranes, lymphokines/biochemistry, molecular genetics, theoretical immunology, immunoregulation, neuroimmunology, and immunologic diseases.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 420 with C or better
MIC	441	Bacterial Genetics	Surveys genetic exchange and regulatory processes in bacteria and their viruses. Bacteria and viruses as tools in genetic engineering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	442	Bacterial Genetics Laboratory	Techniques of mutagenesis, mapping, and strain and genetic library construction.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre/Co-requisite: MIC 441
MIC	443	The Microbial Universe	Diversity and physiology of microorganisms with emphasis on recent advances in the biology of microorganisms of environmental and medical importance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 353 with C or better; Pre- or corequisite(s): MIC 444 with C or better if completed OR Visiting University Student
MIC	444	The Microbial Universe Lab	Techniques used to explore the microbial universe with emphasis on structural, metabolic, genetic, and growth characteristics relevant to the identification and characterization of microorganisms of environmental and medical importance. Not open to students with credit in MIC 206.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): MIC 443 with C or better OR Visiting University Student
MIC	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student

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MIC	446	Molecular Biology/Genetics Lab	Molecular genetic techniques; plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student
MIC	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and metals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only GLG 461 or MIC 461
MIC	470	Bacterial Diversity/Systematic	Biology, classification, and enrichment culture of the nonpathogenic bacteria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): MIC 302 with C or better
MIC	481	Bacterial Pathogenesis	Human host-bacterial interactions in infectious diseases with emphasis on pathogenesis and molecular mechanisms of bacterial virulence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better; MIC 360 or 441 with C or better
MIC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
MIC	485	General Virology	Fundamental principles of viruses, their molecular biology, replication, genetics, and pathogenesis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MIC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student
MIC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
MIC	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MIC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
MIC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
MIC	501	Foundations in Microbiology	Provides overview of the field of microbiology including: bacterial genetics and physiology, virology and host/pathogen interactions through lectures, reading, presentations and discussion of papers in the field of microbiology and immunology. Students read all papers, participate in class discussions and present papers during the semester.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MIC 501 or MIC 591 (Milestones in Microbiology)
MIC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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MIC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIS	101	Intro to the US Army	Introduces the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills such as cultural understanding, goal setting, time management, stress management and comprehensive fitness relate to leadership, officership and the Army profession. Focuses on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the Army ROTC program, its purpose in the Army, and its advantages for the student. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	102	Foundation of Adaptive Leaders	Introduces the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, students learn how ethics and values shape the Army and the specific ways that these ethics are inculcated into Army culture. Explores the seven Army values and the warrior ethos, investigate the profession of arms and Army leadership as well as an overview of the Army, and gains practical experience using critical communication skills. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101
MIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	201	Army Leadership and Decisions	Academically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam and final exam. Also includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102 OR Visiting University Student

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MIS	202	Army Doctrine and Team Dev.	Academically challenging course where students study, practice and apply the fundamentals of the leadership, officer skills, Army values and ethics, personal development and tactics at the small-unit level. Focuses on cross-cultural competencies as they relate to Army doctrine and how they apply in a combatant commander's engagement strategies. Stresses Army values, teamwork and warrior ethos and their relationship to the law of land warfare and philosophy of military service. Covers the ability to lead and follow through team building exercises in small units up to squad level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Also includes physical training assessment, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201
MIS	205	Leader's Training Course	6-week training program emphasizing practical hands-on skills and leadership development. Taken in lieu of MIS 101, 102, 201, 202. Conducted at Fort Knox, Kentucky.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	301	Training Management and WFF	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab or during a Leader Training Exercise (LTX). Requires the student to write peer evaluations and receive feedback on abilities as a leader and how to improve those leader skills that can further develop into a successful officer. Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV Cadets who evaluate the students using the Cadet Officer Evaluation System (OES).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202 OR Visiting University Student
MIS	302	Leadership in Small-Unit Ops	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab, or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV cadets who evaluate the students using the Cadet Officer Evaluation System (OES). Teaches the student the necessary skills to be successful at the USACC Advance Camp.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301
MIS	303	National Adv Leadership Camp	6-week training program emphasizing leadership development and advanced military skills, including tactics, land navigation, and physical training. Conducted at Fort Lewis, Washington.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		

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MIS	401	The Army Officer	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam, and final exam. Assesses students on the execution of a mission during a classroom PE, leadership lab or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is mandatory for commissioning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302 OR Visiting University Student
MIS	402	Company Grade Leadership	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. For the capstone exercise, requires students to complete an oral practicum that is evaluated on their knowledge of the 20 Army warfighting challenges. Assesses students on leadership abilities during classroom PE, leadership labs or Leader Training Exercises (LTXs). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is a mandatory requirement.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302; MIS 401
MIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Military Science	1-3		
MKT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Credit is allowed for only FSH 280 or MKT 280
MKT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	300	Marketing & Bus Performance	The dynamic role of marketing within society and organizations. Emphasizes frameworks and analytical tools that ensure customer focus and drive organizational performance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey major, or non-business major with minimum 2.50 GPA and minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MKT	302	Applied Mktng Mgmt & Ldrshp	Market planning, execution, and assessment. Emphasizes decision and communication skills related to market opportunity analyses and marketing program development as a core business function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s): W. P. Carey Marketing BS major; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271 with C or better if completed OR Visiting University Student
MKT	303	Honors Marketing Theory & Prac	Covers basic applications of marketing concepts to problems that are common to marketing managers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s): W.P. Carey Honors student; ECN 221 or 231 with C or better; MAT 211 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271 with C or better if completed; Credit is allowed for only MKT 300 or MKT 302 or MKT 303
MKT	311	Sports Business	Focuses attention on components ranging from professional sports to collegiate sports, as well as sports-related products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; minimum 56 hours; Pre- or corequisite(s): MKT 300, 302, or 303 with C or better if completed OR Visiting University Student

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MKT	352	Marketing Research	Knowledge and skills to make intelligent decisions in the design, evaluation and application of marketing research and market data.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s): W. P. Carey Marketing student; MKT 302 or 303 with C or better OR Visiting University Student
MKT	355	Designing Brand Identity	Creates brand identity initiatives by beginning with a focus on research and strategy. Covers how the support system of design principles, color, imagery, typography and composition makes an entire brand identity program cohesive, yet differentiated. Explores major media development tools (e.g., Adobe Creative Cloud) in a way that can help students select the right approach for a brand, and also to make good choices for working across media. Differentiates between critical digital literacy as opposed to functional digital literacy, which focuses predominately on how to operate software applications.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): MKT 302 or 303; Credit is allowed for only MKT 355 or MKT 494 (Digital Tools for Building Brands)
MKT	365	Advertising & Beyond	Advertising and brand development as means to marketing and business success. Consideration of market research, segmentation, objective, creative strategy, digital and integrated media tactics, media management, and metrics of effectiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS student; MKT 300, 302 or 303 with C or better or Visiting University Student
MKT	370	Prof Sales & Relationship Mgmt	Investigate the vital role of sales, its relationship to other functions within the firm, and its impact on customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business major with minimum 2.50 GPA and minimum 56 hours; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	390	Essentials of Marketing	Focuses on the nature and processes of marketing with an emphasis on practical application. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student OR degree- or nondegree-seeking graduate student OR Visiting University Student
MKT	391	Essentials of Selling	Focuses on the selling process and its practical applications within consumer and business markets. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student; minimum 2.00 GPA OR degree-seeking or nondegree-seeking graduate student OR Visiting University Student
MKT	392	Essentials of Business Mktg	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business major; minimum 2.00 ASU cumulative GPA; minimum 56 hours; MKT 390 with C or better; or Non-degree seeking undergraduate or Degree seeking or Non-degree seeking graduate student
MKT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): Non-business student, and minimum cumulative GPA of 2.00, and minimum 56 hours OR be a Non-degree student with minimum 2.0 ASU cum GPA OR be a graduate student
MKT	395	Essen Advertising & Mktng Comm	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA major or non-business major; minimum 2.00 GPA; minimum 56 hours, OR non-degree student with minimum 2.0 GPA OR graduate student; Credit is allowed for only BUA 382 or MKT 395 OR Visiting University Student
MKT	396	Essentials of Services Mkt	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR Business (Retail Management) BA major OR nondegree-seeking student OR graduate student (degree- or nondegree-seeking) OR Visiting University Student

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MKT	397	Essentials of Global Marketing	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in the student's home country and marketing globally. The rapid adoption of technology has fundamentally changed the dynamics of marketing and created new competitive paradigms that must be understood for firms to be successful.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree- or non-degree seeking graduate student OR Visiting University Student
MKT	398	Essentials of Sports Business	Introduces the concepts of sports business. Builds knowledge, skills and understanding of the fundamentals of sports business. Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and how they impact sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 ASU GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree-seeking or non-degree seeking graduate student OR Visiting University Student
MKT	402	Consumer Behavior	Applies behavioral concepts in the analysis of consumer behavior and the use of behavioral analysis in marketing strategy formulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing student; MKT 352 with C or better OR Visiting University Student
MKT	410	Sales Management	Constructive investigation of selling processes, their application in business and consumer contexts, and management of the sales function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	420	Retail Management	The role of marketing in retailing and retail performance. Challenges and processes of retail management across various institutions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA Business (Retail Management) major; MKT 300 or 302 or 303 with C or better
MKT	421	Fan Behavior and Sports Mktg	Focuses on what it means to be a consumer in a sports marketing context society and what, as a marketer, you need to know to develop, evaluate and implement effective marketing strategies for fans.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	425	Global Marketing Management	Analyzes marketing strategies and practices developed by firms to compete in global markets and adapt to changing international environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	G	Prerequisite(s): W.P. Carey BA or BS major or non-business major with minimum 2.50 ASU cum GPA and minimum 2.50 ASU business GPA and 56 earned hours; MKT 300 or 302 or 303 with C or better OR Visiting University Student
MKT	430	Sports Business	Builds knowledge, skills, and understanding of sports business; exposure to leading-edge thought, methods, and practices in sports business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BS student; must have completed MKT 300, MKT 302 or MKT 303 with a grade of C or better.
MKT	431	Sports Events and Facility Mgt	Project-based course that encompasses the administration, coordination and evaluation of any type of event related to sports.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	435	Entrepreneurial Marketing	Identifies and evaluates marketing opportunities; motivates an appreciation of entrepreneurial marketing and its different environmental contexts for general marketing principles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	440	Creating Digital Experiences	Marketing is about creating meaningful experiences between brands and the people they serve. Designed to jump start learning for any student interested in marketing goods and services in contemporary society, this course covers digital ideation and planning as well as digital media, all with a focus on practical application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better; Credit is allowed for only MKT 440 or MKT 494 (Digital Marketing in Practice) OR Visiting University Student
MKT	441	Sports Revenue Generation	Focuses on selling and how to create, maintain and build relationships within the sports context. Students gain knowledge and develop skills in choosing a sales career including attributes of a sales person, sales call preparation, value propositions, creating value for the client, team selling, questioning and listening techniques, negotiating, persuasion and closing techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student

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MKT	442	Services Marketing Strategy	Concepts, skills, and strategies for addressing the imperative marketing challenges and opportunities involving service.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing major; minimum 2.50 GPA; minimum 56 hours; MKT 302 or MKT 303 and MKT 352 with C or better; Pre- or corequisite(s): MKT 402 OR Visiting University Student
MKT	450	Social Media and Content Mkt	Centers on how to effectively use social media and content marketing to build relationships between a company and its customers. Students learn to create content, how to deliver content through social media and community management, as well as how to optimize content for maximum effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing BS major; MKT 302 (or 303) with C or better; Credit is allowed for only MKT 450 or 494 (Social Media Mktg and Com Mgmt) OR Visiting University Student
MKT	451	Sports Business Analytics	Develops and applies critical and creative thinking skills through the lens of a sports context with the goal of making data-driven decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business cert; MKT 300, 302 or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	452	Bus-to-Bus Marketing Strategy	Concepts, skills, and strategies for performing competitively in the business market where organizations rather than households are the customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; minimum 2.50 GPA; minimum 56 hours; Pre- or corequisite(s): MKT 402 OR Visiting University Student
MKT	455	Brand Management	Focuses on understanding brand management and the concepts associated with building brand equity and managing brand identity and positioning. Students learn how firms create a competitive advantage by incorporating consumer insight into an effective branding strategy. In addition, students gain an understanding of the role of branding on product portfolio management. Heavily features case discussion, projects and real brands. Applies brand management knowledge to an actual branding strategy project for a small firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better; Credit is allowed for only MKT 455 or MKT 494 (Brand Management) OR Visiting University Student
MKT	460	Sports Revenue Generation	Focuses on providing a sophisticated understanding of revenue generation in the context of sports. Students gain knowledge of key marketing, management and administrative functions that play a critical role in revenue-generation strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS major; MKT 300, 302 or 303 with C or better
MKT	462	Competitive Marketing Strategy	Strategy formulation and decision making by the marketing executive. Integrates marketing programs and considers competitive marketing issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing student; MKT 302, 303 or 352 with C or better; Pre- or corequisite: MKT 402 with C or better if completed OR Visiting University Student
MKT	465	Projects in Sports Business	Focuses on providing students with an innovative opportunity to work directly with sports business industry professionals to address real-world and real-time issues faced by these organizations. Students develop an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major; MKT 300 or 302 or 303 with C or better; MKT 311 or 430 with C or better OR Visiting University Student
MKT	472	Immersive Brand Experience I	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Focuses on customer and brand market research, strategic planning and foundations of the creative process.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s) w/ C or better: W.P. Carey Marketing major; MKT 302 or 303; MKT 352; min 56 hours; Pre- or corequisite(s): MKT 402 w/ C or better if completed; Credit allowed for only MKT 472 or MKT 494 (Proj in Advertising) OR Visiting University Student
MKT	473	Immersive Brand Experience II	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Applies previously acquired marketing knowledge and best practices in creative direction, writing and art direction, media development and strategy to deliver completed brand development initiatives for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; min 56 hours; Pre- or corequisite(s): MKT 402 with C or better if completed; Credit is allowed for only MKT 473 or MKT 494 (Projects in Advertising)

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MKT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with B- or better; minimum 3.00 GPA
MKT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-6		Prerequisite(s): Barrett Honors student
MKT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	W. P. Carey School of Business	Department of Marketing	1-6	L	Prerequisite(s): Barrett Honors student
MKT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-3		Pre-requisites: Business students with professional status or non-business students with a minimum cumulative GPA of 2.50 and 56 earned hours
MKT	501	Basics of Marketing Management	Manages the marketing function; market and environmental analysis; marketing planning, strategy and control concepts. Development and management of marketing programs. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree-seeking graduate student
MKT	502	Marketing Management	Managing the marketing function; market and environmental analysis; marketing planning, strategy, and control concepts. Development and management of marketing programs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): specific W.P. Carey graduate students only
MKT	520	Innovating Through Services	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	525	Excel in Services	Focuses on challenges of managing services and delivering quality service to customers. The attraction, retention, and building of strong customer relationships through quality service (and services) are at the heart of the course content. The course is equally applicable to organizations whose core product is service and to organizations that depend on services for competitive.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	530	Creativity and Innovation	Multidisciplinary approaches to theories and practices of inspiring and managing innovation and change for sustainable competitive advantage. Focuses on both the student's individual creativity and the planning and implementation of innovations, technologies, processes, or systems that pose significant uncertainty. Places special attention on the processes surrounding understanding the consumer, ideation and implementation. Inclusive in this are methods such as environmental scanning, scenario planning, contextual research, storytelling, concept testing and prototyping. Also includes the many aspects of the organization's structure and culture regarding innovation and creativity.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	535	Global Marketing Strategy	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in a home country and marketing globally.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	540	Branding and Consumer Markets	Provides an intensive examination of factors that drive consumer behavior. Covers topics such as understanding factors contributing to a superior value proposition, identifying elements associated with the stability of the existing alternative, specifying components linked to reducing the level of uncertainty associated with the new alternative; articulating independent influences (e.g., regulatory and social) operating in a particular change context, and comprehending biases that exist in the search and decision making process. Also places additional emphasis on brand development as well as on the role that social media assumes in the change process.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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MKT	545	Entrepreneurial Marketing	Introduces the process of developing a plan for starting a business and presenting that plan to potential investors in order to obtain financing. Covers the purposes of a business plan, the varying objectives of different types of investors or financial institutions, and how they complement or conflict with the interests of an entrepreneur. Topics include proprietary positioning, types of organization, and differing management objectives.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	550	Product and Service Innovation	Intimately familiarizes students with the front end of the new product design process and provides concrete tools for determining strategies for developing new products based on input from customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	555	B2B - Capturing Value	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments, and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	560	Customer Relationship Mgmt	Focuses on the tools, metrics, and systems used to measure and manage customer relationships. Key to the development and use of sound customer metrics are market research skills including competencies in research design, sampling, measurement, data collection, and data analysis. Covers how to use types of data such as surveys, purchased data, transactional data, the Web, and social media to measure and manage customer relationships.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W. P. Carey MBA Full Time student.
MKT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
MKT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
MKT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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MKT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Marketing	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	501	Writing about Social Issues:SW	Reading and discussion of nonfiction writing on social issues that integrate cultural, gender, and societal issues that affect the well-being of urban communities with special attention to the Southwest.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	502	Religion, Culture, and Health	Focuses on how cultural and religious notions may come into conflict around issues of health. Contrasts two societies, not necessarily contemporary, from different continents.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	503	Ethics, Science, and Culture	Introduces ethics related to the practice of art, science, and medical practice in modern and premodern society.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Master of Liberal Studies student OR MAS in American Media and Popular Culture student. Credit is allowed for only FMS or MLS 504
MLS	505	The Research Process	Contemporary scholarly writing and research processes that adult learners, new to graduate study, can use in all MLS classes and for years ahead.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MLS 505 or MLS 598 (The Research Process) or MLS 598 (Research Methods)
MLS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Master of Liberal Studies student
MLS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Master of Liberal Studies student
MLS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Master of Liberal Studies student
MLS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Master of Liberal Studies student
MLS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MND	101	First-Year Chinese I	Beginning course in Modern Standard Chinese designed for students who have little or no previous background in the language. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information that go along with language use.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student
MND	102	First-Year Chinese II	Beginning course in Modern Standard Chinese designed for students who have completed MND 101. Different pedagogical approaches such as group practice, role play and situational dialogues are designed to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information with application to global business communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; Credit is allowed for only CHI 102 or MND 102

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MND	201	Second-Year Chinese I	First part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed First-Year Chinese I and II. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing. While linguistic elements are the focus of this course, also includes cultural information that accompanies language use along with a deep emphasis on global work situations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; Credit is allowed for only CHI 201 or MND 201 OR Visiting University Student
MND	202	Second-Year Chinese II	Second part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed three semesters of Modern Standard Chinese at the college level or equivalent. Builds on the vocabulary introduced in the first three courses, with deeper emphasis on global work situations. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing Modern Standard Chinese. While oral proficiency is the focus of this course, also includes cultural information that accompanies language use in the teaching as well.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; MND 201; Credit is allowed for only CHI 202 or MND 202
MSA	101	Elementary Arabic I	Introductory Arabic language focuses on pronunciation of Arabic sounds and basic writing skills. Students learn Arabic culture through standard greetings, common phrases, vocabulary and performance of appropriate social behaviors common in the Arab world which prepares students for work in global organizations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Credit is allowed for only ARB 101 or MSA 101
MSA	102	Elementary Arabic II	Continuation of Elementary Arabic I, adopts different pedagogical approaches such as group practice, role play and situational dialogues to help increase listening, speaking, reading and writing skills. While linguistic elements are the focus, cultural and intellectual contexts provide a medium for understanding the Arab-Islamic world and the global business setting.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; Credit is allowed for only ARB 102 or MSA 102
MSA	201	Intermediate Arabic I	Directed to students who have completed the first two courses of college-level Arabic. Students reach an advanced level of oral proficiency through concentrating on new verbs, vocabulary and unique structures of sentences which enable them to master a highly sophisticated usage of the language.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; Credit is allowed for only ARB 201 or MSA 201
MSA	202	Intermediate Arabic II	Provides advanced ability to understand, read, write and communicate in Arabic and is directed to students who have completed the first two Arabic elementary courses and the first intermediate course. Focuses on transitive, intransitive and passive and active verbs which enable students to express themselves in highly sophisticated Arabic styles and discourse. Students study how Arabic people perceive and communicate important cultural, historical and economic themes as well as major historical figures and their contributions to Arabic society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; MSA 201; Credit is allowed for only ARB 202 or MSA 202
MSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	221	Popular Music Lab	Menu of courses designed to build popular music-specific musicianship skills. Respective course topics serve as complements to the fields of study available in the popular music foundation series.	Y	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MSC	443	Popular Music Forum	Studio class that functions as a collaborative lab for all popular music students regardless of their musicianship specializations. Investigates various topics in popular music performance, composition and production. Students cultivate skills related to their musicianship specializations and develop aural skills and knowledge of music through participation in collaborative and solo projects, the study of recordings, and compositions.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition

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MSC	451	Popular Music Indus Studies I	Familiarizes students with an overview of the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. Study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): minimum 45 hours
MSC	452	Popular Music Indus Studies II	Familiarizes students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on and offline promotion and marketing tools.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSC 451 with C or better
MSC	474	Popular Music Specialization	A menu of courses designed to deepen specific aspects of student's musicianship in the context of popular music; each specialization course has an associated internship that provides students opportunities to apply what they are learning in a real-life context while also gaining additional skills and understanding.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Popular Music BA major; 4 hours of MSC 443 with C or better; MSC 451 with C or better; MSC 452 with C or better
MSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): minimum 45 hours
MSC	489	Popular Music Capstone Project	Summative presentation of the student's interests which demonstrates mastery of the student's chosen area of focus. This may include but is not limited to a creative project or experience with a focus in music industry studies; performing, songwriting, composing, film scoring, recording, producing, or promoting. Students gain a more advanced level of knowledge and understanding of the practice and philosophy of the music industry in order to launch or further their career as a professional popular musician.	N	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Popular Music BA major; 6 hours of MSC 443 with C or better; 6 hours of MSC 474 with C or better
MSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MSC	551	Pop. Music Industry Studies I	Familiarizes students in the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. This is accomplished through the study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MSC	552	Pop. Music Industry Studies II	Familiarize students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on- and offline promotion and marketing tools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MSC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MSE	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Credit is allowed for only MSE 208 or PHS 208
MSE	211	Intro to Mechanics-Materials	Topics include stress, strain, elasticity, axial loading, torsion, bending, yield criteria, fracture, general energy methods and Castigliano's Theorem.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): PHY 121; PHY 122; MSE 250 with a C or better
MSE	215	Materials Synthesis	Introduces contemporary techniques for synthesizing both traditional and novel materials and the corresponding correlation to synthesized materials properties.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre- or corequisite(s): MSE 250 with C or better if completed OR Visiting University Student
MSE	250	Structure&Properties-Materials	Basic concepts of material structure and its relation to properties. Application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): CHM 114 or 113 with Pre- or corequisite(s): CHM 116 OR Visiting University Student ** DO NOT TOUCH REQUIREMENTS W/O SUPERVISOR APPROVAL!**
MSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		

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MSE	301	Materials and Civilization	Focuses on exploring how materials technology can change people's lives. Traces how societies evolved based on the access to materials and the ability to exploit them and trade them among nations. Studies the role of materials in a variety of contexts such as food, art, warfare, transportation, medicine, information and energy from the Stone Age through the industrial revolution to the modern world. Analyzes the connection between the dramatic developments in civilization and advances in materials through the lens of structure, properties and processing of materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Minimum Junior standing; Credit is allowed for only MSE 301 or 394 (Materials and Civilization)
MSE	308	Sensing the World	Project-oriented science course develops critical thinking and technical skill using Internet modules on the five senses.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Prerequisite(s): MSE 208 OR Visiting University Student
MSE	330	Thermodynamics of Materials	Principles of statistical mechanics, statistical thermodynamics of single crystals, solutions, phase equilibrium, free energy of reactions, free electron theory, and thermodynamics of defects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials Science and Engineering minor; MSE 250 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
MSE	335	Materials Kinetics	Introduces kinetics in processing of materials as illustrated through real-world materials processing examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or students with approved Materials minor; MSE 330
MSE	355	Structure and Defects	Intermediate-level grounding in crystallography, crystal defects, surfaces and interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s): Fulton Engineering undergrad stdnt or Material Scie & Engineering minor; MSE 250 w/ C or better; Pre- or coreq(s): MAT 267 or 272 w/ C or better if completed; MAT 242, 342, or 343 OR Fulton Engineering grad stdnt OR Visiting University Student
MSE	356	Structs, Properties & Defects Lab	Lab experiments correlating atomic structure, defects and microstructure of processed metals, ceramics polymers and composites to their mechanical and thermal properties.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Pre- or corequisite(s): MSE 355 OR Visiting University Student
MSE	415	Math/Computer Mthds-Materials	Mathematical, computational, and statistical methods and computer programming used to model materials science phenomena and materials engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	CS	Prerequisite(s) with C or better: Fulton Engr undergrad student or Materials Science & Engr minor; MAT 267 or 272; MAT 274 or 275; MSE 250; Credit is allowed for only MSE 415 or MSE 598 (Math & Comp Methods in Materials) OR Visiting University Student
MSE	420	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MSE 355 with C or better; Credit is allowed for only MSE 420 or MSE 514
MSE	421	Physical Metallurgy Laboratory	Focuses on analysis of microstructure of metals and alloys and includes correlation with mechanical properties to some extent.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science & Engineering BSE major or minor; MSE 355 with C or better
MSE	440	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering BSE major or minor; MSE 335; MSE 355 with C or better; Credit is allowed for only MSE 440 or MSE 516 OR Visiting University Student
MSE	442	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 442 or MSE 494 (Fatigue, Fracture, Creep) or MSE 540
MSE	450	Intro Materials Characterizatr	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; PHY 131; MSE 355; Credit is allowed for only MSE 450 or MSE 510
MSE	451	Materials Characterization Lab	Lab for materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; Corequisite(s): MSE 450

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MSE	457	Quantum Mechanics:Atoms&Solids	The effect on quantum mechanics on the electronic structure and properties of atoms and solid materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering student or Materials Science and Engineering minor; MAT 275 with C or better; MSE 250 with C or better; PHY 131 with C or better OR Visiting University Student
MSE	458	Electronic,Mag,Optical Prpties	Electrical, optical, and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering student; MSE 457; Credit is allowed for only MSE 458 or MSE 515
MSE	460	Nanomtlis in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250; Credit is allowed for only MSE 460 or MSE 494 (Nanomat. In Energy Production) or MSE 560 or MSE 598 (Nanomat. In Energy Production)
MSE	470	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s) w/ C or better: Fult Engrn undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student
MSE	471	Introduction to Ceramics	Principles of structure and property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 355 OR Visiting University Student
MSE	476	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering major or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 476 or MSE 519
MSE	482	Materials Engineering Design	Principles of the design process. Feasibility and optimization. Manufacturing processes, materials selection, failure analysis, and economics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	L	Prerequisite(s): Materials Science and Engineering BSE major; MSE 211 with C or better; MSE 355 with C or better OR Visiting University Student
MSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		
MSE	489	Capstone Design Project I	Covers how to plan an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 & 490 must be taken to secure L General Studies designation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1	L	Prerequisite(s): Materials Science and Engineering BSE major; Corequisite(s): MSE 482
MSE	490	Capstone Design Project II	Students learn how to conduct an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 and 490 must be taken to secure L General Studies designation.	N	RSC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	2	L	Prerequisite(s): Materials Science & Engineering BSE major; MSE 482; MSE 489
MSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student
MSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MSE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate or graduate student
MSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-3		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MSE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MSE	502	Partial Differential Equations	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE or MSE 502
MSE	503	Concepts in Materials Science	Familiarizes students with fundamental concepts and terms used in MSE. Introduces the relationship between structure-processing-property-performance-characterization. From this point, explores crystal structure, symmetry and defects. After which, introduces fundamental theory of diffusion, kinetic and phase transformation and gives examples of their impact on the material. Next, presents the correlation between structure-processing-property on performance. Throughout the course, exposes concepts of materials characterization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students; Credit is allowed for only MSE 503 or MSE 598 (Concepts in Materials Science)
MSE	510	Intro to Materials Characteriz	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 450 or 510
MSE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MSE	514	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MSE 420 or MSE 514
MSE	515	Electronc,Magnetc,Optical Prop	Electrical, optical and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 458 or MSE 515
MSE	516	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 440 or MSE 516
MSE	517	Introduction to Ceramics	Principles of structure, property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering OR Science and Engineering of Materials student
MSE	519	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 476 or 519
MSE	523	Structural&Mech Prop of Matrils	Designed for first-year PhD students in the School of Materials. Topics include crystallography theory, tensor properties of materials, elasticity, crystal defects, dislocation theory, plasticity, fracture, fatigue, and creep.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	524	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHM 541 or MSE 524
MSE	525	Fund of Mat Elec/Opt/Mag/Therm	Behavior of materials; electronic band structure, electronic and ionic conduction, electronic processes in semiconductors, dielectric, optical and magnetic properties. Emphasizes the fundamental understanding of material properties while establishing structure-property relations. Aims to link these properties to applications in optoelectronics, photonics and optics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical,& Mag Matis & Device Apps) or NAN 512 or PHY 482 or PHY 512
MSE	526	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 526 or NAN 511 or PHY 511
MSE	527	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical,& Mag Matis & Device Apps) or NAN 512 or PHY 482 or PHY 512

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MSE	540	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MSE 442, 494 (Fatigue, Fracture, Creep) or 540
MSE	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only NAN 546 or MSE 546 or PHY 546
MSE	548	Fund of Microelectronics Pack	Multidisciplinary course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Fulton Engineering student. Credit is allowed for only CHE 518 or EEE 518 or MAE 518 or MSE 475 or MSE 548
MSE	550	Adv Materials Characterization	Analytical instrumentation for characterization of materials; SEM, SIMS, Auger, analytical TEM, and other advanced research techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering OR Science and Engineering of Materials student
MSE	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 552 or NAN 552 or PHY 552 or SEM 552
MSE	553	Electron Microscopy Lab I	Lab support for MSE 552.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553
MSE	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent-beam diffraction, and electron holography. Novel developments and applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 554 or PHY 554
MSE	555	Electron Microscopy Lab II	Lab support for MSE 554.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
MSE	560	Nanomats in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major. Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
MSE	561	Kinetics&Phase Trans in Solids	Hetero/homogeneous diffusion-controlled transformations, order-disorder transformations, and shear martensitic) athermal transformations in solids. Courses in advanced thermodynamics and structure and properties of materials are strongly recommended in preparation for this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 571 or NAN 571 or PHY 571
MSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student

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MSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Pre-requisite: Graduate Engineering student OR Science & Engr of Materials student
MSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student
MSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student
MSI	601	Cont Topics in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from the arts and other disciplines that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	602	Curr Issues in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from current public policies, events, and popular culture that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	755	Historical Research in Music	Required for all PhD in Music students. Knowledge and insights related to conducting historical research in music. Includes development of a mini-proposal for a dissertation on the history of music education, or draft of a historical research paper suitable for presentation or publication.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music students
MTC	123	Beginning Composition	Intended for freshmen and sophomores in the composition concentration. Introduces composing. May be repeated for credit.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theory and Composition (Composition) BMUS major OR Visiting University Student
MTC	125	Basic Music Theory	Notation, scales, keys, modes, intervals, chords, basic part writing and composition. Development of related aural skills through sight-singing and dictation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Digital Culture (Music) major, Music major, Performance and Movement major, Music Performance minor, or Music Theatre minor OR Visiting University Student
MTC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	221	Music Theory: 18th Century	Styles, techniques, and idioms of 18th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 125 with C or better
MTC	222	Music Theory: 19th Century	Styles, techniques, and idioms of 19th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 221 with C or better OR Visiting University Student
MTC	223	Music Theory: 20th Century	Styles, techniques, and idioms of 20th-century music; emphasizes innovative treatments of musical elements, analysis, and composition; related aural skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better
MTC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	315	Scoring for Jazz Ensembles I	Analyzes scores and recordings, application of orchestration and four and five-part harmonization techniques frequently used in arranging for the contemporary jazz ensembles and studio orchestra.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MUP 236 with C or better OR Visiting University Student
MTC	316	Scoring for Jazz Ensembles II	Analyzes scores and recordings, application and creation of new arrangements for contemporary jazz ensembles and/or studio orchestra.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 315 with C or better OR Visiting University Student
MTC	320	Modal Counterpoint	Counterpoint based on 16th-century vocal polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better
MTC	321	Tonal Counterpoint	Counterpoint based on 18th-century polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better

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MTC	323	Composition	Writing music compositions, with emphasis on basic techniques and smaller structures. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): MTC 123 with C or better OR BMUS Theory and Composition (Composition) or BMUS Theory and Composition (Theory) major with minimum 55 hours OR Visiting University Student
MTC	327	Intermediate Form and Analysis	Organizing elements in the most important contrapuntal and homophonic musical forms from the Renaissance through the 19th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better OR Visiting University Student
MTC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	422	Musical Acoustics	Properties of sound and tone. Harmonic series, instruments, the ear, auditorium acoustics, and the reproduction of sound. Assumes a thorough knowledge of musical notation, intervals, scales, and harmony, or 2 years of music theory.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; Passed audition
MTC	425	Studies in 20th-Century Theory	Continued development of analytical techniques and aural skill, with an examination of theoretical systems applicable to 20th-century music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 223 with C or better OR Visiting University Student
MTC	428	Advanced Form and Analysis	Organizing principles of the large forms of musical composition in the 19th and 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; MTC 223 with C or better
MTC	429	Canon and Fugue	Writing of canons and fugues in tonal style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 321 with C or better
MTC	430	20th-Century Counterpoint	Counterpoint studies utilizing 20th-century idioms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 223 with C or better
MTC	433	Orchestration	Studies scoring music for full and chamber orchestras; examines individual orchestral instruments (characteristics and performance techniques). Requires a working knowledge of a computer music notation program.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major
MTC	436	Electronic Studio Techniques I	The study of computer music systems emphasizing advanced audio synthesis and resynthesis as well as their application to professional compositional environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Digital Culture (Music) major or MTC 223 OR Visiting University Student
MTC	437	Elec Studio Techniques II	Principles of digital electronic music systems and their applications in the composition of electronic music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	440	Jazz Theory and Ear Training	Advanced study of jazz harmonic systems. Daily oral drills.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	441	Jazz Composition	Creative writing in the smaller forms and in the idiom of jazz.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music student; MTC 440; MUP 236 with C or better
MTC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MTC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MTC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student
MTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	495	Final Project	Half recital of compositions or approval of a large-scale composition or a research paper.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		
MTC	496	Theory Project	Supervised individual writing project dealing with music theory.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MTC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MTC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	516	Baroque Music	Detailed analysis of selected examples of music from the Baroque period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	517	Classic Music	Detailed analysis of selected examples of music from the Classic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	518	Romantic Music	Detailed analysis of selected examples of music from the Romantic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	519	Late 19th-Early 20th Cen Music	Detailed analysis of selected examples of music from the late 19th and early 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	520	Analytical Techniques	Analytical techniques systematically applied to music. Concentration on structural and compositional procedures.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	523	Advanced Composition	Advanced music composition, including complex techniques and larger structure. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Pre-requisite: Graduate Music student
MTC	525	Pedagogy of Theory	Practices and principles of teaching music theory. Emphasizes most desirable and practical offerings possible. Comparative studies of existing practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MTC	535	Rhythm and Meter Studies	Exposes students to seminal research in rhythm and meter studies with the aim of introducing a range of methodologies and common issues found in this area of research. Reading assignments include music theory and music cognition literature relating to questions of rhythm and meter in diverse repertoires, including classical, post-tonal, world, and popular music genres. Students reflect on the strengths and weaknesses of various approaches, analytical techniques, and the implications that theories of rhythm and meter have for performance practice and write and present a final research paper on a topic relating to rhythm and meter studies.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MTC 535 or MTC 591 (Survey of Rhythm and Meter Studies)
MTC	540	Jazz Theory and Ear Training	Surveys some of the most influential trends in the jazz tradition with in-depth analysis of harmonic systems, linear elements, and compositional strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Pre-requisite: Graduate Music student
MTC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	723	Advanced Composition	Special problems in writing in complex forms and textures.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music student
MTC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MTC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTE	210	Mentored Tutoring Internship	Introduces math education students to issues of balancing the content of precalculus mathematics with the needs of someone learning it. Addresses core issues, including articulating what is involved in learning the mathematical idea(s); interpreting students' questions; analyzing student thinking and inferring their underlying rationale from a learner-centered perspective; techniques of question-posing, problem-posing, and instructional scaffolding.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Co-requisite: MAT 207
MTE	250	Tech and Math Visualization	Uses several software packages for exploring mathematics and for preparing mathematical materials, starting from introductory skills and leading to advanced techniques. Places particular emphasis on using computer software with the aim of visualizing mathematical relationships, structures, and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MAT 270 with C or better; MTE 210 with C or better OR Visiting University Student
MTE	280	Invest Qnty: Number Operations	Investigation of mathematical principles and processes regarding the real number system and its properties develop number sense and qualitative reasoning abilities. Designed to meet the requirements for preservice elementary school teachers.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student

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MTE	281	Inves Space: Geom, Meas & Vis	Explores three aspects of geometry: spatial visualization, measurement, and proof. Uses visualization, spatial reasoning, and geometric modeling to solve problems. Provides opportunities for participants (1) to use physical models, technology, and pattern-finding strategies to identify properties of and develop formulas for measuring two- and three-dimensional shapes; and (2) to develop powerful ways of thinking to justify geometric relationships	N	PRA	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student
MTE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MTE	301	Invst Chng Ptrn, Func & Model	Examines different conceptions of algebra as the study of (1) generalized arithmetic, (2) reasoning with symbols, (3) reasoning with patterns and functions, (4) structure in the number system, and (5) modeling. Distinguishes arithmetic from algebraic reasoning, and develops an appreciation for the pervasiveness of the function concept in the K-8 school mathematics curriculum. Features algebraic thinking and representation using algebra tiles and other concrete models, realistic problems, dynamic geometry software, graphing calculators, and a variety of virtual tools and Web sites. Topics include, but are not limited to: patterns, relations, functions and covariational thinking; multiple conceptions of quantity, variables, constants, and unknowns; inductive, deductive, and analogical reasoning; rate of change and proportional thinking; algebra learning trajectories; and comparisons of additive vs. multiplicative, absolute vs. relational, and arithmetic vs. algebraic thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MTE	320	Fnd of 7-12 Math Curr Assess	Focuses on concepts of mathematics curricula and their relationships to perspectives on learning, instruction, and assessment. Using a variety of participation formats (e.g., individual and small group work, and whole group discussions) and directed activities, participants examine curricular principles underlying the historical development of mathematics curricula and assessment, and current curricula and curricular recommendations and controversies surrounding them.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MTE 210 with C or better; MTE 250 with C or better
MTE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
MTE	430	Dvpmnt of Mathematical Thinking	This capstone course requires students' sustained engagement with, and analysis of, artifacts from research on learning mathematics from instruction. The artifacts include: curricular/instructional task sequences, samples of student work, video-cases showcasing students' involvement in instruction, problem-solving interviews, and teaching experiments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 320 with C or better OR Visiting University Student
MTE	482	Mthds Teaching Math Sec School	Examines secondary school curricular material and analyzes instructional devices. Teaching strategies, evaluative techniques, diagnosis, and remediation and problem solving.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 310 with C or better; admission to the Professional Program
MTE	483	Mathematics-Secondary School	Topics in geometry, number theory, algebra, and analysis. Emphasizes unifying principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 310 with C or better
MTE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	485	Teaching Standards-Based Math	Course for secondary mathematics students at rural campuses. Offers a detailed exploration of the Arizona Mathematics Standards (AMS) for middle school and high school. In addition to an in-depth coverage of the AMS content and practices, students engage with, review and analyze existing instructional task sequences addressing the AMS. Students also design and construct partial and complete lesson plans to cover specific mathematical content and practices.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 271 or minimum 45 hours
MTE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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MTE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student
MTE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
MTE	501	RUME I	Research in Undergraduate Mathematics Education I (RUME I) covers academic research in (undergraduate) mathematics education. Develops the ability to read, discuss, criticize and draw practical conclusions from research in (undergraduate) mathematics education, all with the overarching aim of broadening perspective on areas of past and current mathematics education research. Research on the learning and teaching of undergraduate mathematics is one of the foci of the course. Students read research literature drawn from a variety of content areas and grade bands: quantitative reasoning, early learning of algebra, proportional reasoning, algebra and functions, calculus, statistics and probability. Prepares for Part 1 of the qualifying exam in mathematics education	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MTE 501 or MTE 598 (Research in Undergraduate Mathematics I)
MTE	502	RUME II	RUME II is the second course in a core four-course sequence in the mathematics education doctoral program. Explores research on problems in the teaching and learning of algebra, geometry, calculus and probability as seen from multiple theoretical perspectives. Develops ability to read, discuss, criticize and draw practical conclusions from research in mathematics education, all with the overarching aim of broadening perspectives on areas of past and current mathematics education research. RUME II builds on its prerequisite in a subtle but important way. Increased emphasis and focus on theory in mathematics education research—a consideration of various types of theories and the roles they may play in the research endeavor. Also prepares for the required qualifying exam	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 501; Credit is allowed for only MTE 502 or MTE 598 (Research in Undergraduate Mathematics II)
MTE	503	RUME III	RUME III is the third course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students learn different methods for implementing data collection and analysis, reporting results; and continue to conduct a pilot study with the goal of developing a dissertation proposal from their research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 502; Credit is allowed for only MTE 503 or MTE 598 (Research in Undergraduate Mathematics III)
MTE	504	RUME IV	RUME IV is the fourth and final course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students continue to conduct a pilot study with the goal of developing a dissertation proposal from their research. Continues developing the student's ability to: synthesize research literature in a specific area of mathematics education, refine research statement and question(s) to advance knowledge in a specific area of mathematics education, refine design and methods for conducting a study, analyze research data using theoretical constructs, describe results of analysis, report findings using theoretical constructs and submit a paper for publication.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 503; Credit is allowed for only MTE 504 or MTE 598 (Research in Undergraduate Mathematics IV)
MTE	585	Modern Geometry for Teachers	Euclidean, projective, and non-Euclidean geometries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MTE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		

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MTE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MTE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MTE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MUD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
MUD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		

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MUD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUE	101	ASU School of Music Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university, the School of Music and the Herberger Institute for Design and the Arts. Covers the music education and music therapy programs in the School of Music.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUE 101 or MUE 194 (ASU School of Music Experience for Music Education) OR Visiting University Student
MUE	110	Introduction Music Education	Overview of music education and career options. Orientation to student characteristics, teacher roles, teaching qualities, and philosophical and historical foundations. Requires school observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major
MUE	154	Gesture and Sound	Covers fundamentals of musical leadership through gestures associated with sounds in the performance of music.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUE	161	Introduction to Music Therapy	Overview of the profession of music therapy and its applications in mental health, rehabilitation, and special education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	162	Intro to Music Therapy Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Education or Music Therapy major; Corequisite(s): MUE 161 OR Visiting University Student
MUE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	211	Music in Recreation	Materials, methods, and organizational structures appropriate for recreational music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	260	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major
MUE	261	Music Therapy Treatment	Orientation to preclinical experience with emphasis on observation skills, assessment, goal setting, and professional ethics. Requires off-campus observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MUE 161 with C or better
MUE	262	Mus Therapy Behav Science Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Corequisite(s): MUE 261
MUE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	310	Music in Early Childhood	Examines music through the lens of the culture(s) of young children, which (though they intersect with adult cultures) are unique, different from adult experiences, and particular to them. Emphasizes the musical content of children's songs as well as the music they hear, and the kinds of musical engagements that are particular to young children. Also emphasizes the uses, functions, and meanings of music for children.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102 with C or better; minimum 30 hours
MUE	311	Music for Children and Youth	Examines the role of music in the lives of young people with particular attention to child and youth learning and development (cognitive, social, emotional, personal/identity, musical). Includes examination and critique of music intended for children and youth (e.g., social and gendered meanings), as well as consideration of how music is related to individual and social identity.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): BLE 220, RDG 291, SPE 222 or TEL 215, or minimum 30 hours OR Visiting University Student

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MUE	317	Strings Lab	Students apply educational theory to the development and refinement of specialized skills in string teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	319	Digital and Hybrid Lab	Provides a foundation for integrating a range of technologies and digital media in music teaching and learning. Encourages critical and creative thinking while considering the possibilities for innovative applications of technology and digital media based upon contemporary curricular, theoretical and pedagogical frameworks. Students demonstrate skills and understanding related to using technology and digital media in the context of musicianship, music teaching and learning.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUE	321	Jazz Lab	Jazz rehearsal and performance techniques and repertoire appropriate for rehearsing jazz ensembles in K-12 schools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 321 or MUE 394 (Jazz Lab)
MUE	323	Keyboard Lab	Piano keyboard skills appropriate for music educators.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 132 with C or better; minimum 45 hours; Credit is allowed for only MUE 323 or MUE 394 (Keyboard Lab) OR Visiting University Student
MUE	325	Voice/Choral Lab	Skills for developing voices and rehearsing choral ensembles.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 110; Credit is allowed for only MUE 325 or MUE 394 (Voice/Choral Lab) OR Visiting University Student
MUE	327	Brass Lab	Students apply educational theory to the development and refinement of specialized skills in brass teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	334	Guitar Lab	Guitar skills for teaching guitar classes in K-12 schools.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 334 or MUE 394 (Guitar Lab) OR Visiting University Student
MUE	335	Educational Methods for Guitar	Students apply educational theory to the development and refinement of specialized skills in guitar teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music major; Passed music education or therapy interview
MUE	336	Percussion Lab	Students apply educational theory to the development and refinement of specialized skills in percussion teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	337	Woodwinds Lab	Students apply educational theory to the development and refinement of specialized skills in woodwind teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	381	Music Therapy Research	Statistics and research design appropriate for investigations in music therapy.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Music Therapy student OR Visiting University Student
MUE	384	Therapy Practicum I	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	385	Therapy Practicum II	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	386	Therapy Practicum III	Individual placement in ASU Music Therapy Clinic.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	387	Therapy Practicum IV	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	388	Therapy Practicum V	Individual clinical work in a community mental health facility.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisites: Music Education or Music Therapy student
MUE	413	Art of Teaching Children Music	Methods of instruction, planning, and presentation of appropriate contents in music. For music educators and music therapists.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music student OR Visiting University Student
MUE	415	Teaching Contemporary Musician	Curriculum, student characteristics, and teaching strategies for general music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major OR Visiting University Student
MUE	434	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation) OR Visiting University Student
MUE	436	Perc Methods Music Therapy	Provides knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy student

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MUE	441	Psychology of Music	Psychological and physiological aspects of music emphasizing musical behavior, function, perception, and learning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUE	463	Music Therapy Theory & Prac II	Organization, administration, and use of music in rehabilitation with various client populations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy student; MUE 467 with C or better
MUE	465	Child Music for Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy student; Minimum Junior standing
MUE	467	Music Therapy Theory & Prac I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy major; MUE 261 with C or better OR Visiting University Student
MUE	475	Group Process/Music Therapy	Principles of group process, verbal counseling, professional writing, as related to music therapy practice.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music Therapy student; MUE 463 (MUE 362) with C or better or Graduate student in Clinical Music Therapy OR Visiting University Student
MUE	476	Internship in Music Therapy	Full-time, 6-month, off-campus residency in an approved clinical institution.	N	PRA	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major
MUE	480	Teaching Choral Musicians	Methods of instruction, organization, and presentation of appropriate content in choral music classes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	481	Teaching Beg Instrumentalists	Instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	482	Teaching Adv Instrumentalists	Advanced instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MUE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student
MUE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUE	501	Intro to Music Therapy	Introduces the profession of music therapy through lecture, active discussion, and observations of clinical sessions. Experiential learning is achieved through music making in peer groups.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	534	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation)
MUE	536	Perc Methods Music Therapy	Designed to provide knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM Student
MUE	548	Intro to Research in Music Ed	Survey of research methods and literature in music education. Focuses on interpretation and evaluation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	549	Foundations of Music Education	A treatment of historical perspectives, philosophy-aesthetics identified with music education, and learning theories applied to music teaching/learning. Basic research and writing skills appropriate to graduate studies in music education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	550	Studies in Music Curricula	Scope and sequence of musical experiences. Develops criteria for the evaluation of music curricula.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	551	Listening and Creating	Studies the nature of music listening and music creating and their relationship. Reviews research and pedagogical practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MUE	555	String Pedagogy & Reh Techs	String pedagogy and orchestral rehearsal skills for teachers who work with K-12 string classes.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MUE 555 or MUE 598 (String Pedagogy and Rehearsal Techniques)

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MUE	559	Social/Cult Studies in Mus Ed	Considers how music education is shaped by social and cultural concepts.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Music student; Credit is allowed for only MUE 559 or MUE 598 (Social and Cultural Studies in Music Ed)
MUE	560	Jazz Pedagogy	Study of pedagogy, repertoire, and technique of instruction in jazz styles, ensemble techniques, and performance practice for school ensembles.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	563	Theory and Prac in MT II	Organization, administration, and use of music in rehabilitation with children and adolescents with special needs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM major; MUE 581 with C or better
MUE	564	Instr Music/Adv Rehearsal Tech	In-depth analysis of instrumental techniques in preparation for a thorough discussion of band tuning problems and solutions. Discussion of productive conducting and rehearsal techniques for school music teachers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	565	Children's Music Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy Graduate student
MUE	566	Instr Lit&Pedagogy for Schools	Provides an in-depth examination of ensemble music and teaching techniques to instrumental music teachers.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	567	Professional Practicum	Students provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): graduate Music Therapy student
MUE	568	Choral Music/Ad Rehearsal Tech	Musical and vocal techniques necessary for presentation of choral literature. Analysis and experimentation with psychological, acoustical, and other problems of rehearsal and performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	569	Professional Practicum II	Students continue to provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy graduate student; MUE 567 with C or better
MUE	570	Choral Literature for Schools	Comprehensive study and analysis of choral music for the high school with special emphasis on octavo literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	571	Music Therapy Sem I: Supr & Ad	Covers health care administrative skills pertinent to music therapy practice, including budgeting, resource allocation, and staff supervision.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student
MUE	572	Music Therapy Seminar II	Deepens and broadens knowledge and skills in music therapy clinical practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUE	573	Music Therapy Seminar III/Lab	Explores current theory in music therapy and develops the theoretical basis for the profession.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Music Therapy MM student
MUE	574	Special Topics in Mus. Therapy	Introduces graduate students to advanced music therapy topics related to clinical practice.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM student
MUE	575	Music Therapy Music Skills	Teaches new forms of musical accompaniment pertinent to music therapy practice, broadening and deepening existing skills.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM student
MUE	579	Psychology of Music	Nature of musicality and its evaluation. Review of recent research.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	581	Theory and Prac in MT I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	586	Music Therapy Grad Clinical Pr	Develops clinical- and research-based music therapy skills in selected cognate area.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-6		Pre-requisites: MUE 571, 572, 574, and 575
MUE	589	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music Therapy MM Student
MUE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student

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MUE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	754	Teacher Ed Research Policy	Reading and discussion of research and policy documents in teacher education with a focus on arts and music teacher preparation. Includes development of a research project or essay suitable for publication or presentation, an abbreviated prospectus for a dissertation, or literature review.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	756	Qual Research Music Teaching	Studies qualitative research and methods in music education, including readings and discussion, data collection and data analysis. Includes development of an abbreviated prospectus for a qualitative dissertation, or a draft of a qualitative research paper suitable for presentation or publication. Prerequisite: doctoral student in music education.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	757	Quant Research in Music Teach	Studies quantitative research and methods in music education, including readings and discussion, data collection, and analysis. Includes development of an abbreviated prospectus for a quantitative dissertation or a draft of a quantitative research paper suitable for presentation or publication.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): doctoral Music student
MUE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUP	101	ASU School of Music Experience	Orientation to university and School of Music resources and procedures as well as career planning and guidance. Through various course discussions and assignments, music students examine the concept of academic integrity and its potential impact on their future and learn about taking an interdisciplinary perspective. Required for all music majors.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUP 101 or MUP 194 (ASU School of Music Experience)
MUP	111	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	117	Applied Jazz Improvisation	Principles, methods, and theory of jazz performance and pedagogy.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major who has passed a jazz studies audition
MUP	121	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Performance minor or Music Theatre minor who has passed audition, or Performance and Movement major

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MUP	127	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	131	Class Piano	4-semester sequence (with MUP 132, 231, and 232) designed for those with little or no piano experience. Emphasizes keyboard technique, sight reading, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	132	Class Piano	4-semester sequence designed for those with little or no piano experience. Emphasizes keyboard technique, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP 131 with C or better
MUP	133	Class Voice	4-semester sequence (with MUP 134, 233, and 234) open to all students. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	134	Class Voice	See MUP 133.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	170	Music Theatre I	Develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUP	172	Music Theatre II	Further develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 170
MUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	209	Beginning Choral Conducting	Essentials of choral conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	210	Begin Instrumental Conducting	Essentials of instrumental conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	217	Applied Jazz Improvisation	Emphasizes basic jazz literature, chord symbol reading, melodic patterns and concepts, ear training, analysis of improvised solos, and pedagogical issues.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 117 with C or better OR Visiting University Student
MUP	231	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP132 with C or better
MUP	232	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP231 with C or better
MUP	235	Jazz Piano	2-semester sequence (with MUP 236) designed for jazz keyboard experience. Emphasizes chord symbol reading, simple improvisation, and voicing. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	236	Jazz Piano	See MUP 235.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	250	Diction for Singers	Use of phonetics in the study of song and opera literature. Language emphasis differs each semester. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	270	Music Theatre III	Develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 172 OR Visiting University Student

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MUP	272	Music Theatre IV	Further develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 270
MUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	311	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	319	Adv Audio Engineering - Arts	Synthesis and application of analog and digital recording methods (voices and instruments), mixing and the advanced skills needed to create professional recordings (CDs, DVDs, internet sound files, etc.). Further emphasis on electronic music production, computer based applications, MIDI, and contemporary studio hardware.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Minimum Junior standing in the Herberger Institute for Design in the Arts
MUP	321	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	327	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	337	Studio Instr: Collaborat Piano	Repertoire to be selected from vocal and instrumental literature. 1 hour lesson per week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	340	Intermediate Conducting	Further study in conducting of instrumental and choral music, including score reading, gesture and interpretation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 154 or MUP 210 with C or better
MUP	360	Musicianship for Singers	Covers reading in the treble and bass clefs (other clefs may be covered time permitting), conducting, intervallic patterns, harmonic outlining, rhythm, dictation, sight reading melodies, musical preparation of repertoire, score scanning and score marking. Additional topics may be addressed as specific student skills and goals are assessed. Assignments are sung and drilled with movable do solfeggio and the takadimi rhythm solmization system. All of the repertoire studied and performed are vocal literature, including: art song, opera, oratorio, musical theatre, jazz, popular.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition; Credit is allowed for only MUP 360 or MUP 394 (Musicianship for Singers)
MUP	370	Music Theatre V	Interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of several historical and contemporary music styles in musical theatre, applying best practices for research, solo and ensemble performance.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major or Music Theatre minor who has passed audition; MUP 272 with C or better
MUP	373	Music Theatre Perfmcce & Prod	Participation in music theatre and opera productions, including auditioning for productions, adhering to departmental policies and completing assigned technical hours.	Y	STO	Y	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition
MUP	374	Music Theatre Tech Production	In-depth study of approaches to technical music theatre. Classroom study of costumes, sets and lighting (Section 1 Topic: Foundations) is followed by practical experience on a technical running crew for a music theatre and opera production (Section 2 Topic: Practicum). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition
MUP	388	Collaborative Piano	Performance class for collaborative piano majors. Repertoire includes vocal and instrumental selections. Advanced analysis of ensemble techniques, style and performance practice in preparation for graduate study or professional application.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): 4 completions of MUP 127 with C or better OR Visiting University Student
MUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		

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MUP	417	Applied Jazz Improvisation	Emphasizes listening, analysis, and performance of advanced jazz literature and composition in contemporary styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 217; Music student who has passed audition
MUP	438	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major, The Arts BA major, or Music Entrepreneurship certificate; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician) OR Visiting University Student
MUP	439	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 or MUP 438 or 494 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 494 (Music Product Creation and Development) or MUP 539
MUP	440	Keyboard Harmony	Performance-oriented class emphasizing chord progressions, harmonization, figured bass realization, stylistic improvisation, transposition, open score reading, and sight reading.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	441	Popular Music Ensemble	Focuses on one or several popular music styles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition
MUP	442	Instrumental Ensembles	Students enhances musical diversity and artistic depth by participating in numerous ensembles as well as other artistic and educational projects. Each project focuses on specific pedagogical and/or musical learning outcomes. Together they comprise a rich assortment of musical experiences and promote the primary course objective. The curriculum accommodates the distinctive needs of each student and is tailor-made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	443	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality. This ensemble is available to both music majors and non-majors, and may require an audition.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	444	Concert Winds	Open to all ASU students. Composed of students who are music majors, as well as those pursuing other fields of study, the group rehearses and performs mainly traditional band literature, giving one or two major performances per semester. Students must audition with the band staff for seating placement.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed an audition
MUP	448	Classical Style: Perform/Analy	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 448 or 494 (Classical Style: Performance and Analysis)
MUP	449	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 449 or 494 (Unaccompanied Bach: Performance & Analysis)

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MUP	450	Choral Union	Large mixed ensemble focuses on the study, synthesis and performance of major choral masterworks while gaining in-depth understanding of significant choral repertoire and historical ramifications. This ensemble is available to both music majors and non-majors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	451	Repertoire	In-depth study of music for performing, involving advanced interpretive and technical concepts from historical, stylistic, and performance-related perspectives.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Completed 4 semesters of 100-level studio instruction
MUP	453	Art Song Repertoire	A survey of repertoire for one voice and piano beginning with Haydn and continuing through the present day. Focuses on the core Art Song Repertoire of Germany and France, but also explores a variety of composers, eras and regions, including Italy, Spain, England and America.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	454	Song Literature	American, Russian, Spanish, Scandinavian, and contemporary song.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor who has passed audition
MUP	455	Arizona Statesmen	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of a variety of historically and musically standard male repertoire, within historical context. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	457	Sol Singers	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of historically and musically important repertoire for treble voices. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or non-Music major who has passed audition
MUP	458	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): undergraduate music major or nonmajor by audition
MUP	459	Barrett Choir	The Barrett Choir is an opportunity for students from all over the university, but primarily from Barrett, The Honors College, to participate in a high-quality choral ensemble. The group seeks to harness the creativity and intellect of honors students to create a collaborative ensemble that operates on a unique model of student-centered learning. The repertory, mostly chosen by the members, is highly varied, ranging from world music to pieces in the great choral tradition to newer music and popular music. There are normally two major concerts per semester, with some occasional smaller performances. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	460	Visiting Quartet Residency	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Music major (bass, cello, viola, violin) who has passed audition
MUP	461	Marching and Athletic Bands	Development of specific professional performing skills through staging of formations and drills for football games and other events. Explores a wide variety of musical repertoire from current top 40 hits to classical. These ensembles are available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or nonmajor who has passed an audition
MUP	465	Music Theatre VI	Further interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of historical and contemporary styles in musical theatre, applying best practices for research, solo and ensemble performance.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 370
MUP	466	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): two completions of MUP 467 OR Visiting University Student
MUP	467	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester students focus on the individual dancer, spatial awareness, development of character and intention. The second semester students work on basic partnering skills and partner dances. Intended to be a full-year course.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Performance (Music Theatre) major, or Music Theatre minor who has passed audition

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MUP	470	Music Theatre VII	Development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 465; Credit is allowed for only MUP 470 or MUP 494 (Musical Theatre Dance) or MUP 566 OR Visiting University Student
MUP	471	Music Theatre: Workshops	The development of specific skills for musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Performance (Music Theatre) or Performance (Voice) major; minimum 45 hours
MUP	472	Music Theatre VIII	Further development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 470
MUP	476	New Music Ensemble	In-depth study, synthesis, and performance of classical works written within the last twenty years for small ensemble and for instruments with electronics. Involves discussion and realization of advanced interpretive and technical concepts related to contemporary music.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	479	Chamber Music Ensembles	Faculty-coached ensembles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	481	Performance-Pedagogy/Materials	Principles and methods of performance techniques for each performance field. May be repeated for credit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music students who have passed audition
MUP	482	Piano Pedagogy	Continuation of MUP 481 (Piano). Problems and techniques of teaching intermediate to advanced piano students.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	485	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	486	Jazz Band	Analysis, rehearsal and performance of new, traditional, and Latin literature for jazz ensembles. Development of advanced sight-reading and instrumental doubling skills. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUP	487	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week. May not be taken for audit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	489	Ethnomusicology Ensembles	Students apply indigenous music theories to actual practice, contextualized in background reading and listening, as they refine their ability to perform orally generated music and sometimes dance traditions. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
MUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Music students who have passed audition
MUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Pre-requisites: Barrett Honors Music students who have passed audition
MUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUP	495	Performance	For candidates of a BM degree in which 1/2 recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	496	Performance	For candidates of a BM degree in which a full recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition

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MUP	503	Literature for Teaching Voice	Equips students with knowledge of repertoire for teaching applied voice, and to cultivate skills in mindfully assigning said repertoire. Topics and activities include learning about the types of repertoire across many styles, pedagogical implications of repertoire, benefits and pitfalls in assigning repertoire to the developing singer, and assignment of repertoire to true and hypothetical students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	504	Voice Teaching Practicum	Provides opportunities to develop practical teaching skills through experiential learning for voice and/or music education graduate students who have a strong interest in teaching applied voice lessons. Topics and activities include teaching, teaching observations, guided teaching activities, and the creation of a teaching portfolio.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	507	Group Piano Practicum	Curricula, materials, and teaching techniques for group teaching at the university and community college levels. Observation/supervised teaching in group piano.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	508	Studio Observation	Weekly observation of studio teaching by various piano faculty. Paper as final requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	509	Jazz Keyboard Harmony	Emphasizes jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	510	Jazz Keyboard Harmony	Continuation of emphasis on jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	511	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student who has passed audition
MUP	517	Advanced Improvisation	Improvisation techniques within the context of advanced jazz literature. Must be taken in sequence with MUP 518.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	521	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	527	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour per week. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music graduate student who has passed audition
MUP	538	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Herberger Institute student; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician)
MUP	539	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUP 538 or 598 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 539 or MUP 598 (Music Product Creation and Development)
MUP	540	Princ of Integrated Conducting	Score preparation and conducting techniques for instrumental music. Concentration on study of historical styles. Required of DMA students in Instrumental Music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DMA Conducting major
MUP	541	Song	Seminar on solo song from its beginning to the present day.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition

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MUP	542	Instrumental Ensembles	Students participate in numerous ensembles and artistic and educational projects that together, comprise a rich assortment of musical experiences. Graduate students especially need opportunities to hone their skills in a great variety of performance opportunities. During the academic year, each student participates in a variety of projects that present a wide range of musical experiences. The curriculum is designed to accommodate the distinctive needs of each student in that artistic-educational experiences are, to a large extent, tailor made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven, rather than institutionally convenient. Each artistic-educational project focuses on specific pedagogical and/or musical learning outcomes that, in various ways, promote the primary course objective: the enhancement of musical diversity and artistic depth in every student. Audition required during the first week of classes.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music graduate student
MUP	543	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	548	Classical Style: Perf/Analysis	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 548 or 598 (Classical Style: Perf. & Anlys)
MUP	549	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 549 or 598 (Unaccomp Bach Perf & Analysis)
MUP	550	Choral Union	Open to all students in the university and to interested singers in the community by audition. Preparation and performance of the larger choral works. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	551	Repertoire	Literature available for performance in all performing media.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	554	Repertoire Score Study	Conducting course comprising a survey of significant repertoire (encompassing, over multiple semesters, literature from choral, musical theater/opera, orchestral, and wind band genres); an introduction to historical performance practice; and a range of score study techniques. Conducting majors are required to enroll each semester (or as advised) and, subsequently; display a comprehensive historical knowledge of the repertoire and development of ensembles over the past 500 years, demonstrate command of standard performance practices with respect to each historical era, and exhibit a clear understanding of varied methods of score study.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: DMA Conducting major
MUP	555	Arizona Statesmen	Rehearsal and performance of music for mixed voices. 3 hours per week. An audition is required to participate in the ensemble.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	557	Sol Singers	Rehearsal and performance of music for mixed voices. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	558	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	560	Visiting Quartet Residency Pro	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Graduate Music major who has passed audition

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MUP	561	Marching and Concert Bands	Staging of formations and drills for football games and other events (fall); masterpieces of symphonic band literature (spring). Meets MWF. An audition may be required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	565	Acting and Movement	Process class with exercises specifically developed to assist the student actor to learn the fundamental techniques of acting with an emphasis on the actor's approach to characterization.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 565 or MUP 598 (Acting for Singers)
MUP	566	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 566 or MUP 598 (Musical Theatre: Dance)
MUP	567	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester focuses on the individual dancer, spatial awareness, development of character and intention. The second semester works on basic partnering skills and partner dances. Intended to be a full year.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student who has passed audition
MUP	570	Music Theatre: Techniques	Exercises and improvisations for the singing actor emphasizing body awareness, isolations, and freedom of the vocal and breath mechanisms.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	571	Music Theatre: Workshops	Develops specific skills for the musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	573	Music Theatre: Performance	Participation in Lyric Opera Theatre productions.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	574	Music Theatre Technical Prod	Introduces technical music theatre. Classroom study of costumes, sets and lighting (Section 1, Topic: Tech) followed by practical experience on a technical running crew for a Lyric Opera Theatre production (Section 2 Topic: Problems). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	576	New Music Ensemble	Rehearsal and performance of music written in the last 20 years.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	579	Chamber Music Ensembles	String, brass, woodwind, percussion, keyboard, vocal, and mixed ensembles. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	581	Performance Pedagogy/Materials	Principles and methods of performance techniques for each performance field.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	582	Anatomy & Physiology of Singing	Detailed study of the anatomy, physiology, neurology and acoustics of the singing voice.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music graduate student
MUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	585	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	586	Jazz Band	Rehearsal and performance of new, traditional, and Latin literature for jazz bands. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	587	Ethnomusicology Ensembles	Performance learning experience for the music of various cultures of the world.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	588	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition

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MUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	596	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	597	Solo Performance	See MUP 596.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	727	Studio Instruction	Minimum contact of 1 hour per week. May be repeated for credit. Conducting students register for 2 semester hours; all other students register for 4 semester hours.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Doctoral Music major who has passed audition
MUP	751	Seminar in Piano Literature	In-depth study of selected topics related to the standard piano literature. Requires research paper, bibliography, class presentation.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	796	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	N	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUS	100	Fundamentals of Music Notation	Provides nonmusic majors with sufficient symbol literacy to begin work in the field of musical learning. Credit not applicable toward any music degree.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUS	131	Bach to Bebop	Develops an understanding of the repertoire for the various musical instruments and ensembles throughout the five eras being studied and discernment through listening different genres of music. For the lectures regarding instruments, introduces students to the respective repertoire for the instrument from c. 1700-present with special emphasis on how the use of the instrument developed throughout history or during each era.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 131 or 194 (Performance: Bach to Bebop)

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MUS	145	Nonmajors Class Piano: Begin	For students with little or no previous music experience. Students learn beginning piano skills.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) OR Visiting University Student
MUS	146	Singing for Nonmajors I	Introduces the basics of singing in many styles, from classical to popular. Topics and activities include learning about the mechanics of singing, music reading, critical listening, learning and performing in a group, and learning and performing alone.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 146 or MUS 194 (Beginning Class Voice for Non-Majors)
MUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	210	The Arts Around Us	Develops the ability to think and create from an arts-rich perspective. In particular, focuses on the arts in the lives of children and youth, arts experiences for children and youth in the community, and one's personal experiences with the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 210 or 294 (The Arts Around Us)
MUS	211	Dance, Music and Meaning	Explores the fundamental nature of human experience across time and culture through the medium of dance and music using a variety of dance and musical materials including folk dance and music, popular dance and music, and such theatrical forms as ballet and modern dance and the music connected with them.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 211 or 294 (Dance, Music, and Meaning)
MUS	212	Music, Meaning and Imagination	Explores how music provides ways to make meaning of the world around us and music as a medium for creative thinking and doing. Develops understanding by trying on roles ranging from critics to creators in both individual and group projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 212 or 294 (Music, Meaning and Imagination)
MUS	213	Critical Thinking in the Arts	Fosters critical thinking abilities in relationship to performing and visual arts. Students learn how to listen to music and view art analytically. Develops and applies knowledge of common elements (within and across art forms) such as form, texture, balance and contrast in order to enhance understanding both of arts processes and products.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	214	Art, Music and Learning	Offers an integrated introduction to, and examination of, the core structural and formal elements of visual art and music in the context of contemporary experiences and learning process.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	215	Children, Creativity, Arts	Interdisciplinary exploration of children's creative processes through critical analysis, hands-on participation and personal reflection. Specifically focuses on creative processes in the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	231	Laughing to Music	Modern-day comedies like Spamalot, Avenue Q, and Glee are part of a comic tradition extending back to the Renaissance. Looks at funny in music from commedia dell'arte to the present. Studies works including the comedies of Mozart, Gilbert and Sullivan, the Marx Brothers, Monty Python, Mel Brooks and many others.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 231 or MUS 294 (Laughing to Music) OR Visiting University Student
MUS	240	Listening to Music	Surveys the historical periods of music making in western civilization, the study of which will hopefully create within the student a listener with an appreciation for art music of many periods and provide more enjoyment in the process. Through lectures, presentations, readings, listening examples and video/DVDs, studies music identified as strong examples of the major periods, composers and compositions in the history of music. Students learn and adopt a minimum new language to help express the elements of music they experience and listen to and develop strategies for writing and communicating about what they hear and put words to how they respond to it. Because experiencing music performed live is an integral part of the learning process, students are required to attend concerts outside of class and submit critical reviews of what they hear.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
MUS	245	Non-Majors Class Piano: Inter.	For students who have completed 1-3 years of piano study.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) with C or better; Credit is allowed for only MUS 245 or MUS 294 (Non-Majors Class Piano II) OR Visiting University Student

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MUS	246	Singing for Nonmajors II	Continues to cultivate the basics of singing in many styles, from classical to popular. Topics and activities include gaining a deeper understanding of the mechanics of singing, sharpening music reading skills and critical listening, learning and performing in a group, and learning and performing alone.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 146; Credit is allowed for only MUS 246 or MUS 294 (Non-Majors Class Voice II) or MUS 294 (Singing 2 for Non-majors) OR Visiting University Student
MUS	254	Blues to Heavy Metal	Covers important musicians and trends from the 1930s through the 1970s. Topics include blues, rhythm and blues, rockabilly, doo wop, teen idols, girl groups, dance craze, surf, novelty, soul, Motown, British invasion, art rock, psychedelic rock, hard rock, heavy metal, and early '70s styles. Emphasizes musical instruments and stylistic traits with historical information provided as background. Features listening examples drawn from selected artists and bands including popular songs and rarities, and demonstrations using various musical instruments and techniques.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 254 or 354 (Blues to Heavy Metal)
MUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	340	Music Concert Hall, Stage, Scm	In-depth study of examples from Western art music. Emphasizes aural analysis and synthesis of historical data with musical phenomena. Critiques the canon and its limits in specific instances.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): minimum 42 hours
MUS	345	Non-Majors Class Piano: Adv.	For students who have completed 4 of more years of piano experience.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 245 or MUS 294 (Non-Majors Class Piano II) with C or better OR Visiting University Student
MUS	347	Jazz in America	In-depth study, analysis and synthesis of examples from the jazz tradition. Includes the application of advanced aural analytic techniques to exemplary jazz musical works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	349	Music in America	Current styles of American music including jazz, popular, and folk music.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & H	
MUS	354	Popular Music	In-depth study of a specific topic in the history of popular music. Emphasizes aural analysis and synthesis of historical data with musical phenomena to create new perspectives.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 42 hours OR Visiting University Student
MUS	355	American Music	In-depth study of current research topics in American music. Engages students in current scholarly debates. Charts the limits of current scholarly methodologies and historical research programs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	Prerequisite(s): minimum 42 hours OR Visiting University Student
MUS	356	Broadway&the American Musical	In-depth chronological study of American musical theatre on Broadway, including origin and development, historical references, global and cultural influences. By way of critical analysis, emphasizes comprehensive stylistic understanding of minstrelsy, operetta, revues, book musicals, film musicals, rock musicals, mega-musicals, and Broadway revivals. Engages students in current scholarly debates on American musical theatre.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	362	Rap Music and Hip Hop Culture	Examines the history of rap music and hip hop culture from their origins to about 1995, including most, but not all, of the major artists from this period. Explores connections between rap music and other elements of hip hop culture, and challenges students to think critically about rap music and its place in society. Uses listening exercises, demonstrations, and conversations with artists to examine how rappers create meaning in their musical works. Drawing on secondary articles by rap critics and scholars, considers in detail such controversial subjects as censorship, sexism, obscenity, and race politics in America as they relate to rap music.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): minimum 42 hours; Credit is allowed for only MUS 354 (Hip Hop) or MUS 362 OR Visiting University Student
MUS	371	World Music	Provides an introduction to world music, including traditional and popular styles. Examines specific music genres from Africa, Asia, Europe, and the Americas and explores their historical development, cultural contexts, communicative functions, forms, styles, instruments and musical philosophies. Throughout the semester, considers the interrelationships among musical genres and other art forms (dance, theater, visual arts, and literature) and analyzes how these musics have intersected with the issues of race, class, gender, religion, ritual, politics, social movements and cultural identity. Students learn to hear and discuss significant stylistic elements of selected genres through listening assignments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Pre-requisite: Minimum 45 hours; Credit is allowed for only MUS 371 or 394 (World Music)

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MUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	410	History of Women in Music	Surveys musical achievements of women as well as the historical contexts that shaped and defined their artistic development.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	
MUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student
MUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
NAN	505	Nanoscience and Society	Integrates nanoscience and nanotechnology with potential societal issues involved in the students' NAN 593 Applied Projects. Coordinated by the faculty and research staff at the Center for Nanotechnology in Society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	506	Innovation and IP Management	Intellectual Property (IP) Management in the context of innovation (research, regulations, manufacture, access to markets, and trade) with emphasis on strategies, public-private interface, licensing, and technology transfer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisites: Degree- or nondegree-seeking graduate; Credit is allowed for only MSE 526, NAN 511, PHY 511, or PHY 481
NAN	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Mats & Device Apps) or NAN 512 or PHY 482 or PHY 512
NAN	542	Topics in Biophysics	Overview of modern biology, length scales: emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542
NAN	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics; measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
NAN	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
NAN	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, PHY552 or SEM 552
NAN	560	Nanomaterials in Energy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major. Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
NAN	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
NAN	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
NAN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
NAN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		

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NAN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
NAV	101	Introduction to Naval Science	Introduces the customs, traditions, missions and regulations of the Department of Defense, United States Navy and United States Marine Corps. Introductory course for the Naval Reserve Officer Training Corps (NROTC) by laying the basic foundation of knowledge about the Navy and Marine Corps required to progress through the NROTC program. Also provides the requisite knowledge to allow follow-on shipboard summer training to be safely and effectively conducted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		
NAV	102	Sea Power and Maritime Affairs	Informs the participants of the historical evolution of sea power for the U.S. Navy and world history. Also covers the evolution of international terrorism and the effects on U.S. strategies and policies regarding potential adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 102 or NAV 194 (Sea Power and Maritime Affairs)
NAV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	202	Navigation	Basic principles, procedures and analytic processes of marine navigation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 202 or NAV 294 (Navigation)
NAV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	301	Ships Systems I	Provides detailed knowledge of naval engineering systems and principles of ship construction. Topics covered include ship design, hydrodynamic forces, stability, conventional and nuclear propulsion, electrical theory and systems, hydraulics and ship control. Concepts of the theory and design of steam, gas turbine and diesel propulsion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 301 or NAV 394 (Navy Ship Systems I - Engineering) OR Visiting University Student
NAV	302	Naval Ship Systems: Weapons	Overview of the theory and concepts underlying modern weapon systems used aboard naval warships.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 302 or NAV 394 Naval Ship Systems II: Weapons
NAV	303	Evolution of Warfare	Provides marine option students with a basic understanding of the art, science and concepts of war from the beginning of recorded history to the present day. Addresses the interrelationships among technology, politics, culture and society to better understand warfare today and in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 303 or NAV 394 Evolution of Warfare
NAV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	401	Naval Operations and Seamanship	In-depth study of numerous aspects relating to the efficient and professional manner of U.S. Navy ships' operations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 401 or NAV 494 (Naval Operations and Seamanship) OR Visiting University Student
NAV	402	Leadership and Ethics	Applies leadership and ethical theories discussed to an actual leadership or ethical dilemma or issue that Junior Officers in the Fleet or FMF are currently facing or have faced in the recent past.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 402 or NAV 494 (Leadership and Ethics)
NAV	403	Fundamentals Maneuver Warfare	Focuses on the historical aspect of amphibious operations. Emphasizes how the development of this war fighting discipline played a key role throughout much of the early history of the Marine Corps.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
NAV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of Naval Science	1-3		
NEU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
NEU	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB 555 or NEU 555
NEU	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556

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NEU	558	Neuroscience Journal Club	Small class emphasizing discussion, presentation by students, and written research papers.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
NEU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): Interdisciplinary Graduate Program in Neuroscience PhD students
NEU	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEW	100	Intro to Conflict Resolution	Introduces students to theory, research and practice of communication and language skills which are useful in conflict management, negotiation, transformation, reconciliation and forgiveness. Gives students access to practical exercises and role-playing opportunities. Critical thinking and critical decision-making are embedded in both the theory and the practice in this course and apply to the personal, professional and cross-cultural levels of interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
NEW	101	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Credit is allowed only for ASU 101 or NEW 101
NEW	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): freshman standing with 25 or fewer hours
NEW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
NEW	200	Innovation/Svc Learning/Ldrshp	Integrates academic coursework with lessons in leadership, community engagement and service learning in order to cultivate students' civic mindedness, knowledge and sensibility to issues of social justice and community engagement. Students develop solutions to real-life challenges and participate in implementing a community-based service learning project. Applying multicultural engagement and interdisciplinary knowledge and critical thinking skills to civic responsibility, course provides students with skills and knowledge applicable to the mission and goals of ASU and the New College.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only NEW 200 or IAS 294 (Innovation Challenge, Service Learning, Leadership)

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NEW	210	From Passion to Practice	Part self-discovery, part professional boot camp, this highly interactive course allows students to explore their strengths and passions and utilize them most effectively in their careers. Drawing upon the expertise of successful leaders and organizations from diverse professions as they are presented in text, video and in person, students learn skills and methodology that prepare them for entry into a fulfilling profession.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 294 (Passion to Practice: Charting Your Path) or NEW 210 OR Visiting University Student
NEW	225	Building a Better You	Equips students to manage their lives effectively and integrate beliefs, values and skills into fulfilling careers. Students develop a focused career path based upon their learning profile, interests and self-knowledge. Develops critical thinking and reading skills needed for effective decision making and communication. Uses the Let Me Learn Advanced Learning System® to enhance self-awareness and growth.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		
NEW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
NEW	300	International Cities	Expands the global awareness of students through intensive study of a major international city. Students study such areas as the history, political system, economy, geography, architecture, science, technology, arts and/or culture of the city before visiting it physically during a break. While abroad, students build on what they have learned in class by exploring the city and experiencing it firsthand.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
NEW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours
NEW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
NEW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
NEW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6	L	Prerequisite(s): Barrett Honors student
NEW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
NEW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		
NEW	101-H	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Humanities, Arts, and Cultural Studies major; Credit is allowed only for ASU 101 or NEW 101
NEW	101-M	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Mathematical and Natural Sciences major; Credit is allowed only for ASU 101 or NEW 101
NEW	101-S	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Social and Behavioral Sciences major; Credit is allowed only for ASU 101 or NEW 101

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NLM	160	Vol Action & Community Ldrshp	Introduction to voluntary behavior in American society for students interested in volunteerism, community service, and civic engagement.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	
NLM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
NLM	220	Introduction to Nonprofit Orgs	Introduces the nonprofit sector and its role in developing the cultural, economic, and social impact in U.S. society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
NLM	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235
NLM	300	Fund Raising & Resource Dev	Theory and practice of philanthropy, resource acquisition methods through ethical fund raising, and earned income approaches for nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
NLM	310	Volunteer Management	Studies volunteer administration practices integral to community organizations providing an introduction to management techniques including program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
NLM	320	Professional Develop Seminar	Professional seminar featuring nonprofit executives; variable topics on leadership and management concerns. Forum for exchange between students and professionals.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
NLM	380	Financial Mgmt for Nonprofits	Instructs students about nonprofit financial, management, and social accounting; accounting issues specific to nonprofits; budgeting; reporting; and nonprofit analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management major or Nonprofit Administration minor or American Humanics certificate; NLM 220 with a C or better OR Visiting University Student
NLM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
NLM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
NLM	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student
NLM	420	Nonprofit Ldrshp Alliance Inst	Nonprofit Leadership Alliance Institute for preparation of nonprofit professionals. Requires out-of-state conference.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-2		Prerequisite(s): minimum 45 hours OR Visiting University Student
NLM	430	Managing Nonprofit Orgs	Analyzes administrative structures, decision making, and program delivery within nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): Nonprofit Leadership and Management major or Nonprofit Leadership and Management minor or Nonprofit Leadership Alliance Certified Nonprofit Professional (CNP) certificate; NLM 220 with C or better OR Visiting University Student
NLM	435	Service Learning/Community Dev	Applies youth and adult development theories through community service immersion in collaboration with local nonprofit partners.	N	REC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
NLM	451	Grant Writing	How to increase grant funding: creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
NLM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
NLM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours

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NLM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
NLM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student
NLM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
NLM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	
NLM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
NLM	510	The Nonprofit Sector	Provides grounding in scope, function and philosophical foundations of the nonprofit sector in American society, including civic engagement, service delivery, reproduction of values and entrepreneurship.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	515	Nonprofit Org Behavior & Mgmt	Organizational behavior theories and effective management practices for nonprofits. Focuses on designing systems and developing habits to optimize the performance of individual employees and teams, in the context of the organization's goals, culture and capacity.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NLM 515 or NLM 598 (Nonprofit Organizational Behavior)
NLM	520	Financial & Resource Mgmt	Baseline understanding of key and critical financial management issues and practices for nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	525	Fundraising & Resource Dev	Examines fundraising and resource development in philanthropy from the perspective of the nonprofit practitioner. Also examines issues confronting nonprofit organizations related to fundraising and philanthropic purposes in society. Increases students' knowledge and understanding of charitable giving and fundraising—who gives to what, why, and how to raise funds for a cause. Examines a wide range of fundraising methods and tools. Focuses on critical thinking, reflection on practice, collaboration, discussion and writing.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	530	Program Eval & Info Mgmt	Develops skills in several areas, including evaluation, needs assessment, information and data collection, data management and analysis, computer applications, and report writing.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	540	Strategic HR Management	Managing human resources in nonprofit organizations; practices and theories.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	545	Volunteer Resource Management	Core topics in effective management of volunteers in carrying out the mission of organizations and ensuring volunteers have good experience with community organizations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only NLM 545 or 598 (Volunteer Resource Management)
NLM	550	Philanthropy	Examines the role of philanthropy and charitable giving in contemporary American society from perspectives of the nonprofit practitioner, the philanthropist and the general public.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	560	Ldrshp/Ethics-Nonprofit Sector	Examines leadership and ethical questions encountered by managers and leaders in the nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	562	Social Entrepreneurship	Introduces social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	565	Grant Writing Nonprofit	Provides practical, experiential instruction identifying grant makers, writing proposals, developing budgets, and evaluating grant proposals for the nonprofit sector. Students develop proposals based on actual, identified needs of their partner nonprofit organization.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only NLM 451, 565 or PRM 451
NLM	570	International NGO	Increases knowledge and understanding of international non-governmental organizations by examining what these organizations do and how they operate in a cross-cultural context.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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NLM	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CRD, NLM 572 or NLM 598 (Community & Social Innovations)
NLM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	605	Nonprofits, Law and Society	Enhances the legal sensibilities of nonprofit leaders and engaged stakeholders. This necessitates critical in-depth understanding of: (1) legal needs common to all nonprofit organizations, regardless of mission or area of focus such as nonprofit corporation law, tax-exempt status, fiduciary duties and fundraising and lobbying ethics and parameters; (2) commonalities among nonprofit, for-profit and governmental enterprises operating within similar spheres of society, especially the importance of nonprofit organizations' compliance with laws generally applicable to specific subsectors such as contracts, labor and employment, volunteer and premises liability, and intellectual property; and (3) the overall importance and impact of legal structures on nonprofit organizations' abilities to successfully pursue their missions for the benefit of society.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	610	Exec Leadership & Governance	Examines the multiplicity of roles for executives and board of directors in providing strategic leadership for nonprofits.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	620	Capstone: Integrative Seminar	Synthesizes learning across MNLM program; analyzes emergent nonprofit and philanthropic sector trends; develops leadership approaches to enact social impact; develops and defends Capstone Solutions Project.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management MNLM student; NLM 510; NLM 520; NLM 530; NLM 540 or 545; NLM 550
NTR	100	Intro to Nutrition Science	Introduces the science of food and nutrition as well as food systems. Focuses on personal dietary behavior change and sustainable dietary recommendations targeting human and environmental health to minimize risk of chronic disease. Overview of healthy dietary patterns, nutrients and energy balance and the digestive system. Addresses food systems issues, cultural aspects of food, and methods for evaluating credibility of nutrition information in the media as well as nutrition science.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	142	Applied Food Principles	Applied scientific principles of food preparation and production.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	150	Intro/Prof/Nutrition/Dietetics	Introduces the professions of nutrition and dietetics. Emphasizes the scope of dietetics practice, the role and functions of registered dietitian nutritionists, and the education requirements for entry into practice. Includes guest presentations by various nutrition professionals.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		
NTR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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NTR	241	Human Nutrition	Introduces nutritional concepts with an emphasis on evidenced-based guidelines and practices. Students explore the macronutrients and micronutrients in food, how these nutrients are utilized by the body and their effect on overall health and disease. Also discusses what makes a "healthy diet," dietary eating patterns, energy balance and body weight. Students learn techniques to assess the credibility of nutrition information in the media, on the Internet and in scientific journals. Additional topics also include cultural aspect of food, food sustainability and food safety.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	290	Intro Evidence-Based Research	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the nutrition field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): College of Health Solutions major; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321 with C or better; Credit is allowed for only KIN 290 or NTR 290 OR Visiting University Student
NTR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	300	Computer Apps in Food Service	Introduces common uses of software and technology in the food service environment, including dietary assessment and analysis, point of sale, and food inventory and control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	302	Digital Technologies Nutrition	Students will learn to leverage existing digital technologies ethically and efficiently to solve problems, complete tasks, and accomplish goals related to nutrition. Students will learn effective adaptability to new and emerging technologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 302 or NTR 394 (Digital Technologies in Nutrition Communication) OR Visiting University Student
NTR	320	History of Human Nutrition	Origins of human nutrition; evolving theories of nutrition and disease; historical role of nutrition in social, military, cultural events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	341	Medical Nutrition Therapy I	First course in a three-course sequence in medical nutrition therapy. Introduces the study of medical nutrition therapy and evidence-based practice for health promotion and prevention and treatment of disease. Covers the nutrition care and therapeutic diets for a variety of conditions including diabetes, cardiovascular disease and neurological conditions. Teaches nutrition care planning via a variety of methods including case studies and active learning scenarios.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	343	Food Service Purchasing	Introduces purchasing systems, bid processes, receiving and storage procedures, and regulatory agencies involved in the food service industry.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	344	Nutrition Management & Leadership	Students gain a greater understanding of organizational structure, culture, administration, traits, values, diversity, marketing, budget development, unions, and more, all through the lens of management and leadership. Students also utilize their research and writing skills to investigate a variety of management topics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	345	Development of Healthy Cuisine	Principles and applications of nutrition, food selection, food preparation and mindful eating in the development of healthy cuisine for wellness, prevention and disease states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	348	Cultural Aspects of Food	Explores origins, development and diversity of food preferences and dietary habits. Also addresses food patterns and attitudes of global populations and the role of U.S. immigrants in shaping food culture. Requires students to prepare and try new cultural and ethnic foods in this course.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C & G	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	350	Nutrition Counseling	Counseling techniques in nutrition; interpersonal and communication skills in clinical and community sites; nutrition education for individuals and populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 341 with C or better or NTR 345; Credit is allowed for only EXW 340 or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
NTR	351	Nutrition Communication	Explores how to best communicate evidence-based nutrition messages to help promote change. Students produce various written and oral pieces that are aimed at health professionals or lay audiences. Course concepts include health literacy, tailoring messages to a target audience, and simplifying the language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241 OR Visiting University Student

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NTR	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353 OR Visiting University Student
NTR	360	Nutrition Entrepreneurship	Explores entrepreneurial opportunities in nutrition, food service, wellness and health communications.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 360 (MGT 360) or FSE 301 or NTR 360 OR Visiting University Student
NTR	390	Current Nutrition Research	Covers concepts in nutrition research that help prepare students for beginning an undergraduate research project. Teaches the basics of undergraduate research focusing on identifying research topics and potential research mentors/faculty, performing literature reviews, critiquing scientific articles, evaluating ethics and participant safety, and proposal writing.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 241; NTR 290
NTR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	400	Preprof Prep in Dietetics	Assists the senior dietetics student in navigating the process of selecting potential internships and applying for internships through DICAS. Focuses on each student's unique professional development needs with projects designed to explore career paths, network, and/or to develop career development skills. Provides an overview of the dietetics profession.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Nutrition (Dietetics) BS major; NTR 341 with C or better; NTR 440, 441, or 444 with C or better; minimum senior standing OR Visiting University Student
NTR	401	Preprof Prep in Nutrition	Students complete 60 hours of fieldwork experience (volunteer work) within their area(s) of professional interest to develop practical skills in planning, development, production and collaboration; including interview skills, social media ethics, cover letter and resume development.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prereq(s): Applied Sci (Food & Nutrition Entrep) BAS, Food & Nutrition Entrep BS, Nutrition BS, Nutrition (Human Nutrition) BS, or School Nutrition cert student; senior standing; Pre- or corequisite(s): NTR 343, 351, or 444 OR Visiting University Student
NTR	440	Advanced Human Nutrition I	Explores the metabolic reactions in humans that involve vitamins and minerals. Students learn how these micronutrients and phytochemicals interact with one another to influence health and disease, explore how genetic variability alters the metabolism of vitamins and minerals, and integrate micronutrient nutrition with physiology and biochemistry to optimize health and prevent metabolic disease. Students immerse themselves in a content-rich learning environment, engage with one another in lectures and in-class discussions, and apply information they have learned in team projects. They also enhance their skills in evidence-based approaches to nutrition science and dietetics by critiquing scientific articles with a micronutrient focus.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202 with C or better; NTR 241 with C or better; NTR 341 with C or better; Pre- or corequisite(s): BCH 361 with C or better if completed; Credit is allowed for only NTR 440 or NTR 540 OR Visiting University Student
NTR	441	Advanced Human Nutrition II	Metabolic reactions and interrelationships of carbohydrate, lipid, alcohol and protein.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361 with C or better; BIO 202; NTR 241; Credit is allowed for only NTR 441 or NTR 541 OR Visiting University Student
NTR	442	Experimental Functional Foods	Food product development techniques, food evaluation and testing, and investigation of current research into food composition.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: CHM 101 or CHM 113; NTR 142; NTR 100 or NTR 241
NTR	444	Medical Nutrition Therapy II	Second in a three-course sequence in medical nutrition therapy. Covers the principle of medical nutrition therapy for prevention and treatment of disease and health promotion. Also covers medical nutrition therapy for pediatrics, critical care, nutrition support, renal, liver, cancer and HIV/AIDS patients. Students apply critical thinking skills in simulation, active learning and interprofessional activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202; NTR 341 with C or better; Credit is allowed for only NTR 444 or NTR 544 OR Visiting University Student
NTR	445	Management of Food Service Sys	Reviews standardized methods of quantity food preparation, operation of institutional equipment, and institutional menu planning. Requires students to participate in a weekly lab where food is prepared and sold to the public in our functional retail kitchen operation. Tasks students to create and prepare menu items and manage all aspects of a fully operational kitchen. This is a capstone course for the dietetics degree.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; NTR 142; NTR 343; Credit is allowed for only NTR 445 or NTR 545 OR Visiting University Student

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NTR	446	Medical Nutrition Therapy III	Third in a three-course sequence in medical nutrition therapy. Lecture and lab components include hands-on assessment techniques, evaluation and interpretation of malnutrition, laboratory data, and nutrition support therapy in relation to disease process and progression. Covers nutrition therapy for advanced practice including critical care, advanced wound care and failure/compromise of organ systems. Utilizes case studies, active learning and interprofessional experiences; as well as critical thinking skills to perform and evaluate nutrition assessment techniques including the NFPE and interpretation of laboratory data; develop and evaluate nutrition support therapies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): NTR 444 with C or better; Pre- or corequisite(s): BCH 361; Credit is allowed for only NTR 446 or NTR 546 OR Visiting University Student
NTR	448	Community Nutrition	Includes content related to community nutrition screening and assessment, nutritional epidemiology, nutrition monitoring and food assistance programs, public policy, nutrition interventions for vulnerable populations, planning effective community nutrition programs, grant writing, nutrition marketing and designing nutrition education programs. Students work in teams to analyze a specific community and population, conduct a literature review on nutrition concerns with their group, then design a community intervention and nutrition education lesson. Students also complete 10 hours of fieldwork in a community nutrition field outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 448 or NTR 548 OR Visiting University Student
NTR	450	Nutrition in the Life Cycle	Reviews nutritional needs and nutrition-related conditions in different stages of the life cycle. Course topics include pregnancy, lactation, infancy, childhood, adolescence and older adulthood. Reviews how developmental changes at each life stage contribute to specific diet characteristics and nutritional needs. Also covers how cultural, environmental, behavioral, psychosocial, physical and socioeconomic factors affect nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 450 or NTR 550 OR Visiting University Student
NTR	453	Nutrition and the Media	Examines various aspects of nutrition and the media, including how food and nutrition professionals use the media in their career, how the media constructs our cultural views of food and body image, and how to frame nutrition messages to make them more newsworthy. Also explores the fields of food writing and food journalism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
NTR	455	Retail Food Service Operations	Development, evaluation and management of retail food service operations; legal and ethical issues in food and beverage management. Capstone course for food management degrees.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; minimum junior standing OR Visiting University Student
NTR	457	Sports Nutrition	Provides a foundation in sports nutrition and addresses the nutritional needs of various types of athletes. Topics include energy and nutrient metabolism during activity, fluid and electrolyte regulation, the evaluation of sports supplements, and travel nutrition. Students also gain experience in developing and providing educational sports nutrition materials outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201; NTR 241 OR Visiting University Student
NTR	480	Integrative & Functional Nutri	Core tenants of dietetics and integrative medicine and the seven physiological systems underpinning this approach. Explores how nutrition contributes to a complex system of interacting biological, psychological, social, spiritual, community, environmental and biochemical systems. Trains how to put the patient at the center of the healing process so that students are able to address chronic disease concerns through a holistic and integrative framework as part of a larger interdisciplinary team. Challenges students to utilize conventional clinical nutrition approaches while embracing complementary therapies that are evidence based and address the biochemical individuality or specific life experiences of each patient/client.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361; NTR 241; NTR 341
NTR	490	Undergrad Rsrch Methods Nutri	Builds on previously learned concepts by engaging students in research methods in the field of nutrition and helping to prepare for beginning an undergraduate research project. Provides an overview of common measurements and study designs that are used in nutrition research. Students apply this knowledge by conducting mini-studies and a class-based research project.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 290; NTR 390

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NTR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
NTR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
NTR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		
NTR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
NTR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS, Medical Nutrition MS, or Nutritional Science MS student
NTR	501	Research Methods/Nutrition	Reviews survey, focus group, and epidemiologic research; develops questionnaires; analyzes large data sets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Nutritional Science MS student
NTR	502	Statistics in Research	Covers the fundamental principles of the scientific process. Critically reviews scientific articles including review articles. In particular, students understand study limitations and how they impact data interpretation and generalizability. Basic training in statistical analyses using the statistics program SPSS.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Medical Nutrition MS student; Credit is allowed for only NTR 502 or NTR 598 (Statistics in Research)
NTR	503	Behavior Change	Project-based course focuses on the process of health behavior change interventions using design process and behavioral science.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS, Nutritional Science (Dietetics) MS, or Exercise and Nutritional Sciences PhD student
NTR	510	Nutrition and the Lifespan	Examines the nutritional needs of humans as they move through the lifespan from pre-conception through elder years. Highlights conditions that may alter or substantially impact nutrition at these stages using case studies and medical reviews. Reviews programs that provide support for food or nutrition education at various life stages including changes in needs for specific macronutrients and micronutrients. Diet assessment techniques and diet prescription strategies to meet needs during various life stages.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student
NTR	511	Medical Nutrition	Provides an overview of the role of nutrition in medical practice and disease prevention. Includes an introduction to nutrition-based approaches in the prevention and treatment of chronic diseases such as obesity, cardiovascular disease, diabetes, cancer and gastrointestinal diseases. Discusses integrative aspects of nutrition along with review of normal digestion and absorption and a discussion of disorders arising from abnormalities in these processes. An introduction to clinical nutrition assessment and the basics of nutrition support will also be provided. Utilizes relevant clinical case discussions along with review of the literature and current authoritative guidelines to reinforce the content. Students learn how to individualize nutrition recommendations and utilize motivational interviewing for patients with the various above-listed needs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student
NTR	523	Vegetarian Nutrition	Health benefits, nutritional characteristics, potential risks of vegetarian diets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	524	Chronic Inflammation	Examines how diet and lifestyle contribute to the development of metabolic syndrome. Reviews and discusses various risk factors that comprise metabolic syndrome through lectures and readings. Reviews chronic inflammation as a common etiology for chronic disease. Highlights nutrition interventions to treat and to prevent chronic inflammation using case studies and medical reviews.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	525	Complementary Nutrition	Critical review of functional foods, phytochemicals, nutrient supplements in health promotion.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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NTR	527	Policies, Environment & Obesity	Enhances students' understanding of the role policies and environments play in health promotion and disease prevention with a special focus on obesity prevention. Looks at a variety of examples to see how policies and environments related to food, nutrition and physical activity affect individual and community health. Also explores how "non-health" policies can be used as an effective tool to promote healthy behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	529	Pediatric Nutrition	Critical review of pediatric disease states and current nutritional therapies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	530	Techniques of Health Coaching	Health coaching techniques and skills for medical, allied health and health promotion professionals. The content illustrates the theory, principles and practices of evidence-based coaching psychology. Aligns with the training programs affiliated with Wellcoaches® (endorsed by the American College of Sports Medicine). Designed in three parts: (1) building of core coaching skills; (2) establishing generative moments with clients; and (3) developing coaching presence and positive psychology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills)
NTR	532	Pathophysiology and Nutrition	Explores the etiology of various endocrine pathophysiological conditions. Throughout the course, students learn the etiology of common conditions and are responsible for finding and presenting evidence for nutrition-based treatments for these conditions. At the conclusion of the course, students gain an appreciation and understanding of current research in nutrition-based approaches to treat endocrine disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	533	Diet Ethics and Policy	Political and ethical issues inherent in the U.S. food system. Topics include food and agricultural policy, government dietary recommendations and regulations, food environment, current issues in food politics, ethical questions of food choice, issues of obesity and food security, sustainability, and investigation of how and why Americans eat the way they do.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	535	Nutrigenomics	Provides a sound foundation for promoting personalized nutrition by integrating and applying molecular nutrition and nutritional biochemistry to clinical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	537	Evidenced-Based Nutrition	Reviews current evidence of the role of diet on disease prevention, development, and management.	N	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	539	Global Nutrition	Provides an overview of global nutrition issues, including the epidemiology, etiology, sociocultural and economic context, and program and policy responses to nutrition-related topics. Areas to be covered include childhood malnutrition, growth stunting, micronutrient deficiencies, parasites and nutrition, sanitation, and obesity and chronic disease incidence in developing countries. Course is participatory; students engage in a series of class activities, discussions, and presentations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	540	Adv Micronutrient Metabolism	Metabolism of vitamins and minerals, primarily as applied to humans, with research literature emphasized.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 440 or 540
NTR	541	Adv Macronutrient Metabolism	Metabolism of protein, fat, and carbohydrate, primarily as applied to humans, with research literature emphasized.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 441 or 541
NTR	544	Therapeutic Nutrition	Current theories of the nutritional prevention or treatment of various diseases.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 444 or 544
NTR	545	Mgm/Instl Food Service System	Standardizes methods of quantity food preparation, operation of institutional equipment, institutional menu planning, quantity food experiences. May require field trips.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 445 or 545
NTR	546	Assess Techniques in Nutrition	Clinical and biochemical evaluation of nutritional status.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 446 or NTR 546
NTR	548	Advanced Community Nutrition	Planning, development, implementation, and evaluation of community nutrition programs, including the process of grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 448 or 548
NTR	550	Adv Nutrition Life Cycle	In-depth review of metabolic characteristics and nutritional needs during pregnancy and lactation, infancy, childhood, adolescence, adults and older adults. Analysis of cultural, environmental, behavioral, psychosocial, physical and socio-economic factors affecting nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only NTR 450 or NTR 550

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NTR	551	Geriatric Nutrition	Explores the impact of nutrition on the aging process and how the aging process influences nutritional needs. Examines the physiology, demographics and economics of aging as well as issues such as end-of-life care. Addresses health promotion, disease prevention and disease management within the context of geriatric nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	553	Nutrition and CVD	Reviews current evidence of the role of diet on cardiovascular disease prevention, development and management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 541. Credit is allowed for only NTR 553 or NTR 598 (Nutrition and Cardiovascular Disease) or NTR 537 (Cardiovascular Nutrition)
NTR	555	Advanced Sports Nutrition	In-depth study of current practices in sports nutrition and review of scientific literature. Also investigates the application of sports nutrition methodologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS, Nutritional Science (Dietetics) MS, or Exercise and Nutritional Sciences PhD student; Credit is allowed for only NTR 555 or NTR 598 (Advanced Sports Nutrition)
NTR	556	Thermo and Fluid Balance	Comprehensive overview of human thermoregulatory responses and fluid balance to exercise in the heat. Provides students with the opportunity to learn the in-depth thermoregulatory responses to heat and the complication related to exercise-induced hyperthermia as well as water and electrolyte imbalances.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only NTR 556 or NTR 598 (Thermoregulation and Fluid Balance)
NTR	557	Nutritional Epidemiology	Designed for graduate students interested in conducting epidemiologic studies, or learning how to interpret and evaluate evidence from epidemiologic studies relating diet and nutritional status to disease risk and health. Familiarizes students with concepts and methodologies used in nutritional epidemiologic studies, and current state of knowledge on diet in etiology of chronic diseases.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 557 or NTR 598 (Nutritional Epidemiology)
NTR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
NTR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
NTR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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NTR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
NTR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NUR	300	Professional Nurse Concepts I	Introduces students to professional nursing attributes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): enrollment into upper-division Nursing program; Pre- or corequisite(s): NUR 325; NUR 336; NUR 352
NUR	310	Nursing Concepts	Theoretical concepts related to health integrity focusing on the individual client across the life span.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: BSN Nursing major in clinical program
NUR	311	Pharmacology in Nursing	Applications of pharmacologic interventions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major
NUR	312	Psychomotor Skills for Nursing	Theoretical foundation for application of psychomotor nursing skills to professional nursing practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing major in clinical program. Credit is allowed for only NUR 312 or NUR 394 (Psychomotor Skills For Professional Nursing Prac)
NUR	313	Nur Conc Adult Health	Nursing concepts related to selected alterations in health with focus on adult populations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; NUR 320 with Y passing grade; Corequisite(s): NUR 323; Credit is allowed for only NUR 313 or NUR 394 (Nursing Concepts for Adult Health)
NUR	315	Nursg Rsch Appl to Prac	Provides scientific and clinical inquiry and research methodology along with concepts needed for integration of evidence into practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	316	Nur Conc Psych/Mental Health	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families, and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better if completed; NUR 311 with C or better if completed; NUR 330 with C or better if completed
NUR	317	Nursing Theory for Psych	Theoretical concepts related to select and/or prevalent psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 367
NUR	318	Nurs Rsrch & Evidence Transltn	Explores the process of scientific and clinical inquiry, research methodology, critical appraisal of research findings, and the translation of current evidence into nursing practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): NUR 391 with C or better; TWC 361 with C or better
NUR	320	Nursing Practice	Integrates knowledge and attitudes from theory into the nursing care of adults in a variety of health care settings.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing major in clinical program; Corequisite(s): NUR 310; NUR 311; NUR 312; NUR 330

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NUR	323	Nursing Practice Adult Health	Applies nursing process with selected alterations in health with focus on adult populations in the acute care setting.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better; NUR 311 with C or better; NUR 330 with C or better; NUR 320 or NUR 484 (Nursing Practice) with Y Grade; Corequisite(s): NUR 313 or NUR 394 (Nursing Concepts Adult Health)
NUR	324	Nur Prac Psych/Mental Health	Application of nursing process, critical thinking, clinical decision making with individuals, families, and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	SEM	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; Corequisite(s): NUR 316; Credit is allowed for only NUR 324 or NUR 484 (Nursing Practice: Psychiatric/Mental Health)
NUR	325	Health and Illness Concepts I	Applies physiologic and psychosocial concepts in the client domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the traditional BSN
NUR	326	Hlth & Illness Cncpts II	Applies concepts related to health and illness and evidence-based principles in the care of clients experiencing alterations in health. The physiologic and psychosocial concepts focus on the leading causes of morbidity and mortality with emphasis on safe, competent and compassionate nursing care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	330	Professional Nurse Attributes	Professional nursing roles and responsibilities.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major
NUR	336	Experiential Learning	Applies assessment and care concepts in the nursing domain.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	337	Experiential Learning II	Practices professional nursing interventions including medication administration, bio-psycho-social care of the adult and childbearing family, and basic developmental assessment of the child.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	346	Nur Prac:Geriatric & Adult Hlt	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	347	Nur Prac Psych/Mntl Hlth & Fam	Applies concepts learned in previous courses to assist with developing plans, providing care and implementing teaching strategies to obstetric, gynecological and psychiatric/mental health clients and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	348	Intrmtle Nursing Practice:Adult	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	349	Nursing Prac: Psych MH-Pre	Applies concepts related to bio-psycho-social care of adults experiencing psychiatric alterations in the nursing domain.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	352	Fndmntl Cncpts in Nrsng	Applies care concepts in the client and nursing domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	353	Integrtn Cncpts Acrss Lifespan	Focuses on the physical, cognitive and socio-emotional development of individuals and families using a life cycle approach. Concepts reside in the client domain of health and wellness and include development, reproduction, family roles, spirituality and end-of-life/palliative care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	356	Nursing Concepts: Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing program; Pre- or corequisite(s): NUR 311 with C or better if completed
NUR	366	Nursing Practice Adults/Elders	Applies knowledge and skills essential to maintaining health and wellness in clients across the lifespan.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	6		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing Program student; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 356 with C or better if completed

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NUR	367	Nursing Prac:Psych MH--Postbac	Applies nursing process, critical thinking, clinical decision-making with individuals, families, and groups experiencing acute and/or chronic alterations in mental health and/or psychiatric disorders.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 317
NUR	384	Gerontological Nursing	Focuses on optimizing the health of older adults and the management geriatric syndromes and chronic conditions.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade
NUR	391	Professional Nursing Theory	Analyzes the multiple dimensions of contemporary professional nursing.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Pre- or corequisite(s): TWC 361 with C or better if completed
NUR	392	Hlth Prom Across the Life Span	Examines concepts and theories involved in health promotion across the lifespan and their application for nurses.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	404	Prof Nrsr Cncpts:Intrmdt	Explores concepts related to quality of care, quality improvement, safety, innovation and communication within health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	405	Prof Nrs Cncpts:Advncd	Focuses on preparing to become active members of the nursing profession, including developing strategies for successful transition into professional practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 458 with C or better; NUR 446 with Y grade; NUR 447 with Y grade
NUR	410	Nur Conc Comm Pub Health	Examines concepts related to health promotion, disease prevention, and health maintenance within the global community.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y grade if completed; Corequisite(s): NUR 420 or 484 (Nur Pract: Comm/Pub Hlth); Credit allowed for only NUR 410 or 494 (Nur Concepts Comm & Pub Hlth)
NUR	411	Nur Conc Child bearing Ped	Concepts related to care of individuals and families within the childbearing and pediatric populations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y passing grade if completed; Corequisite(s): NUR 421; Credit is allowed for only NUR 411 or 494 (Nursing Concepts Childbearing Individ & Families)
NUR	412	NUR Conc Pediatric Patients	Examines essential concepts related to the nursing care of pediatric patients and their families. Provides a nursing care approach for the pediatric patient and family across the healthcare continuum.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 with C or better; NUR 315 with C or better; NUR 316 with C or better; NUR 323 with Y grade; NUR 324 with Y grade; Corequisite(s): NUR 422; Credit is allowed for only NUR 412 or NUR 394 (Nursing Concepts: Pediatrics)
NUR	413	Nursing for Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412 all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 423
NUR	415	Nur Conc Childbearing Family	Examines the care of childbearing clients and their families. Embedded content focuses on providing care to clients along the healthcare continuum.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Corequisite(s): NUR 475; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 330 with C or better if completed; NUR 356 with C or better if completed; NUR 366 with Y grade if completed

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NUR	416	Nur Conc: Com Pub Health	Examines selected concepts, theories, and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing locally and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 476
NUR	417	Nur Conc: Ped Clients	Concepts related to care of individuals and families within pediatric populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 477
NUR	418	Nur Conc: Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	419	Managing Nursing Org Sys	Analyzes selected concepts and theories related to leading and managing nursing in organizational systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	420	NUR PRAC: Comm Pub Health	Applies community/public health nursing concepts in the delivery of primary, secondary, and tertiary care in a variety of community settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; Corequisite(s): NUR 410; Credit is allowed for only NUR 420 or NUR 484 (Nursing Practice: Community and Public Health)
NUR	421	Nur Prac Child-bearing / Famil	Applies nursing care concepts related to the child-bearing woman and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y grade if completed; Corequisite(s): NUR 411; Credit is allowed for only NUR 421 or NUR 484 (Nursing Practice: Childbearing Clients)
NUR	422	Nursing Practice: Pediatrics	Focuses on clinical care of the pediatric client and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y passing grade if completed; Corequisite(s): NUR 412; Credit is allowed for only NUR 422 or NUR 484 (Nursing Practice: Pediatrics)
NUR	423	NUR PRAC: Comp Care/Clin Imm	Students perform nursing practice in a variety of clinical settings, laboratory and simulated patient care environments. Students provide nursing care to patients who are physiologically unstable in advanced medical-surgical, and critical care clinical environments. Students perform advanced psychomotor skills in the clinical, laboratory and simulation environments. Students also complete a clinical immersion experience in a selected clinical setting. During the clinical immersion experience, students have the opportunity to apply leadership and management principles, and work in interprofessional healthcare teams to provide nursing care to clients experiencing health alterations across the lifespan.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Pre- or corequisite(s): NUR 410 with C or better; NUR 411 with C or better; NUR 412 with C or better; NUR 420 with Y grade ; NUR 421 with Y grade ; NUR 422 with Y grade; Corequisite(s): NUR 413
NUR	425	Hlth & Illnss Cncpts III	Applies and integrates interrelated concepts related to health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	426	Hlth & Illnss Cncpts IV	Applies and integrates interrelated concepts related to advanced health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program

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NUR	430	Prof Nur Attrib Ldrshp & Mgmt	Applications of theories and concepts of organizations, management, and leadership with focus on nursing management and leadership in healthcare organizations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412, all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 431
NUR	431	Prof Nur Attrib Innov Prof	Focuses on the process of transition to the professional nursing role, and the gathering, interpretation, and evaluation of evidence that serves as a basis for improving client outcomes and professional satisfaction.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade
NUR	436	Experintl Lrng Advanced	Students practice skills for professional nursing including advanced medication administration and bio-psycho-social care of the child and acutely ill adult.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	437	Experintl Lrng Readnss to Prac	Students demonstrate readiness for interprofessional nursing practice including coordination of nursing care of multiple patients.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 458 with Y grade
NUR	440	Community&Public Health Nursin	Examines selected concepts, theories and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing in the United States.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better; TWC 361 with C or better
NUR	444	Innovation in Nursing	Examines the role and behaviors of an innovator in the nursing profession.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better; TWC 361 with C or better
NUR	445	Nursing Management	Examines selected theories and concepts of organizational behavior and the management of people and resources. Focuses on the application of selected management theories and concepts to nursing practice and health care systems	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 495; TWC 361; Pre- or corequisite(s): NUR 460 with C or better if completed
NUR	446	Complex Nursing Practice:Adult	Prepares learners in the application and demonstration of advanced theoretical knowledge, professional nursing practice, and interprofessional collaboration and referral in the management and delivery of safe, competent care of adult clients experiencing serious health alterations.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	447	Nursing Practice: Pediatrics	Applies previous nursing knowledge to develop plans of care and implement teaching strategies to pediatric clients and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	448	Nursing Practice Readiness	Prepares the learner for the practice of professional nursing in diverse settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 452 with C or better; NUR 458 with C or better
NUR	452	Cncpts in Pop-Basd Health	Assesses and examines the management of health and disease in the community. Focuses on health promotion, disease prevention and identification of barriers that prevent populations from maintaining optimal health. Discusses public health theories and models including epidemiology, health education and health behavior theory.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	453	Intgrtn Cncpts in the HlthCare	Explores the impact of health care policy, systems, economics, law and informatics on the delivery of health care today and in the future.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 458 with Y grade
NUR	458	Intrprofessnal ED/Co Seminar	Focuses on the assessment and analysis of health and disease in the community and population. Provides the data for the IPE Seminar in Senior 2 where an Interprofessional Team of students utilizes the information to plan and implement interventions to improve the health status of communities and populations.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade

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NUR	459	Interprof ED/Co Seminar: Adv	Focuses on the development, implementation and evaluation of a community action project.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 452 with C or better; NUR 458 with C or better
NUR	460	The Art of Nursing	Explores the aesthetic, ethical, and personal patterns of knowing in nursing for the practicing RN.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	HU	Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	464	Capstone Prof Nursing	Synthesizes theories and concepts for professional nursing practice with a focus on role transition.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: BIO 202; CDE 232 or PSY 101 or PSY 341; CHM 101; MIC 205; General Studies MA course; NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 445; NUR 460; NUR 495; TWC 361
NUR	475	Nursing Practice-Childbearing	Applies nursing care concepts related to the childbearing woman and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 415
NUR	476	Nur Prac: Comm Pub Health	Applies community and public health nursing concepts in the delivery of primary, secondary, and tertiary prevention from a population-centered perspective.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Pre- or corequisite(s): NUR 416
NUR	477	Nur Prac: Pediatrics	Focuses on clinical care of the pediatric client and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 417
NUR	478	Nur Prac: Complex Care	Applies advanced psychomotor and leadership skills, nursing care delivery management, and interprofessional referral and collaboration for clients experiencing health alterations across the lifespan in advanced care settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 418
NUR	479	Nur Prac: Clinical Immersion	Builds on the knowledge and skills obtained in the nursing curriculum and integrates the curriculum concepts in varied and diverse practice settings. Supports the student's transition into the role of the professional registered nurse.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 419
NUR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
NUR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NUR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	495	Public & Global Health in Nurs	Analyzes public health concepts, theories, and practice with a focus on the health of all clients in a global environment. Includes core public health functions, domestic and international health care delivery systems, public health and health policy, conceptual and scientific frameworks for community/public health nursing practice, epidemiology, and global health issues.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	G	Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better; TWC 361 with C or better
NUR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7	L	Prerequisite(s): Upper Division Nursing Program students
NUR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		

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NUR	501	Individual&InnovationLeader	Examines the role and behaviors of an innovator in nursing and the interprofessional role. Explores the skills required to create a compelling vision to influence others through innovation and ethical leadership. Examines and correlates different situational challenges utilizing principles of complexity and emotional intelligence to advance innovation in nursing and the interprofessional health care roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
NUR	502	Adv Health Assessment & Promo	Uses lifespan developmental and social determinates frameworks to integrate advanced nursing concepts applied to health assessment and promotion.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): admission to a Nursing MS program
NUR	503	Adv Phy Assess Patho Pharm II	Uses an at-risk population framework to present, integrate and interrelate advanced concepts, practices and principles applied to the biological, cognitive and psychosocial domains of pathophysiology, pharmacotherapeutics and health assessment for health promotion among vulnerable populations appropriate to master's level nursing practice and roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 502 with B- or higher
NUR	508	IPCareCoordination Practicum	Care coordination practicum (90 approved contact hours) preceptored by a practitioner and/or faculty member. Practicum builds on care coordination and interprofessional collaborative practice core competencies, and theories, with an emphasis on the design, delivery and evaluation of culturally relevant and linguistically appropriate clinical prevention interventions, population health strategies and/or services that incorporate broad ecological, global and social determinants of health. Includes principles of epidemiological data; communication, quality improvement and health information technologies appropriate to master's level practice and roles within the context of team-based interprofessional clinical prevention and population health care and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Interprofessional Care Coordination MS student
NUR	509	Prevention & POP Health Prac	Preceptored practicum appropriate to master's level nursing practice and roles within the context of team-based interprofessional clinical prevention and population healthcare and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 501 with B- or better; NUR 502 with B- or better
NUR	510	Foundations Care Coordination	Focuses on the theoretical concepts of care coordination and case management, including current models, intervention components, evaluation methods and financing. Provides the foundation for understanding care coordination and the roles nurses have played in the evolution and implementation of the care coordination models.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to Nursing (Care Coordination) MS degree or certificate program
NUR	511	Care Coord Interprofessional	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, care coordination, communication and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 501; NUR 510
NUR	512	Qual/Safety Outcomes CareCoord	Focuses on the nurse's role in care coordination, and how care coordination programs are used to provide cost-effective and patient-centered care, improve quality and safety outcomes for patients and families, and use health information technology to advance the goals of care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better
NUR	513	IPCP and HC Policy	Examines the nurse's role in communicating, collaborating and leading interprofessional teams to advance innovative care coordination models. Prepares nurses to influencing health policy through care coordination research and leadership.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better
NUR	514	Nursing Theory Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	515	NursingConceptsPsychiatricMH	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups. Applies knowledge and skills essential to maintaining health and wellness in Psychiatric Mental Health clients.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	516	NursePracticePsychiatricMH	Applies nursing process and critical thinking/clinical decision-making with individuals, families and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student

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NUR	517	Nursing Practice Pediatrics	Focuses on clinical knowledge and skills essential to maintaining health and wellness in pediatric clients and their family unit.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	518	Nursing Practice Adults	Maximizes knowledge and skills essential to maintaining health and wellness in adult and geriatric clients.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	519	Prac: Care Coord Nurse Leader	This mentored practicum provides the learner with opportunities to apply care coordination (CC) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address care coordination initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 509 with B- or better
NUR	520	PatSafety HC Qual Princ	Focuses on the application of core principles of patient safety and health care quality to patients. Explores current and historical factors that contribute to quality health care outcomes. Examines the influence of financial, legal and regulatory factors on patient safety and health care quality. Applies various theories, concepts and tools to promote patient safety and health care quality. Describes the principles of just culture and the relationship to analyzing errors. Discusses the nurse's role in advancing patient safety and health care quality. Infuses the Quality Safety Education in Nursing (QSEN) competencies into course activities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing MS or Nursing (Entry to Nursing Practice) MS student
NUR	521	HC EvidenceInformatcsAnalys	Focuses on applying information technology and research methodology to safety and quality initiatives. Students learn the role of technology related to select human factors engineering concepts and related clinical application (e.g., medication administration, clinical decision making). Focuses on determination of outcome measures related to evidence-based practice (EBP) and quality improvement (QI). Discusses survey methods including construction, data collection methods, and data analysis.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better
NUR	522	DesignSystemsPISafety	Focuses on the design, implementation, evaluation and sustainability of patient safety and health care quality initiatives. Uses innovation and change theories, as well as high reliability and just culture principles, to support data collection, analysis and reporting within complex health care systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	523	InterprofessionalCollaboration	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, communication, and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting. Theory and evidence-based strategy for team building, maintenance and conflict resolution for improved team-based practice and performance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	524	NursingPrac/ChildbearingFamily	Applies nursing care concepts essential to maintaining health and wellness in the childbearing woman and family.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	529	Prac:PT Safety&HC Quality Lder	Mentored practicum provides opportunities to apply patient safety and health care quality (PSHQ) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3-7		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	530	Foundntl Cncpts Nursing Info	Focuses on the foundational concepts of nursing informatics. Analyzes the scope and standards of practice; ethical and privacy principles; relationships amongst biomedical, health and nursing informatics; and models, concepts and theories that support nursing informatics practice. Appraises accreditation and legal and regulatory requirements for health and nursing informatics practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): BMI 601 with B- or better; BMI 603 with B- or better
NUR	531	Advncd Cncpts Nursng Info	Focuses on advanced concepts in nursing and health informatics practice. Analyzes the health informatics metastructures, relationships between nursing and multidisciplinary standardized terminologies, trends in nursing and health informatics, ethical, privacy and legal issues, and the emerging role for the nurse informaticist.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530
NUR	533	NursingConceptsChildbearingFam	Concepts related to care of individuals and families within the childbearing populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student; Corequisite(s): NUR 524

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NUR	539	Practicum: Nursing Informatics	Learners complete 135 hours of mentored clinical practice during this practicum applying nursing informatics (NI) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address informatics initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530 with B- or better; NUR 531 with B- or better
NUR	542	Readiness to Practice	Applies concepts that prepare nurses to deliver innovative, safe and quality client care in a dynamic health care paradigm. Prepares learners for their roles in professional nursing.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	544	TheoreticalFoundationsNursing	Analyzes the multiple dimensions of contemporary professional nursing and the interrelationships among theory, philosophy and practice	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	545	Advanced Pharmacology	Provides advanced knowledge of pharmacology with an emphasis on the professional nurse's role in medication therapy and administration. Presents medication classifications within the framework of the patient's psychological and physiological function. Applies pharmacological principles to treatment of specific diseases and symptoms. Examines legal, cultural and ethical aspects of medication theory.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	546	Nursing Concepts Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	579	NED Practicum	Mentored teaching practicum includes application of teaching/learning principles in a specialized area of interest. Tailored to the teaching experience and level of the student. May include classroom, online or clinical teaching, attendance at approved conferences, relevant meetings or other activities that provide opportunity for the learner to gain expertise in the selected area of interest.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 579 or NUR 580 (Teaching Practicum)
NUR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing student
NUR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Pre-requisites: Nursing Graduate student
NUR	601	Scientific Role Development I	First in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Analyzes current trends in the development of innovative scientists and leadership characteristics needed for future roles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	602	State of Science in Nursing	Focuses on research synthesis and critiques of the scientific literature as a basis for knowledge generation related to a focal area of research interest.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Corequisite(s): NUR 605
NUR	603	Soc Context Issues Nurs Hlthcr	Analyzes nursing practice and the healthcare system for an identified population using social-ecological approaches.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	604	Phil of Science Perspectives	Analyzes the history and philosophy of science as a basis for knowledge and academic scholarship in nursing and healthcare innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		

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NUR	605	Theory Analysis	Examines theoretical perspectives and approaches guiding research in nursing and healthcare innovation across the lifespan. Includes the historical evaluation, social contextual factors, implicit assumptions, and bias that influence nursing and healthcare innovation knowledge generation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	606	Scientific Role Development II	Second in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Posits the knowledge, skills and resources needed to expand one's career as an educator and scientist in a health-related leadership role in the context of a future health care environment. Explores strategies for progressive and creative approaches in preparing leaders for innovative change in education, research and health care policy affecting healthcare delivery.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	607	Scientific Role Developmnt III	Focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Students study the career trajectories of key leaders in nursing and health care innovation as a basis for development of their own personal plans for success, including research trajectories and marketing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 606
NUR	608	Qual Research Design Methods	Explores and critiques selected qualitative research approaches. Includes fieldwork exercises as an integral part of course expectations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	609	Quant Research Design Methods	Examines multiple research approaches in clinical and health policy research from a quantitative perspective.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
NUR	612	Advanced Analysis of Variance	Introduces theory, methods, and practice of analysis of variance.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	613	Prin of Regression&Correlation	Introduces theory, methods, and practice of regression analysis.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	614	Des & Implem of Theory-Based	Focuses on the knowledge related to advanced methods for intervention research. Examines methodological, ethical, and practical issues in the design and implementation of theory-based intervention studies.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	615	Qual Data Management Seminar	Qualitative research methods applied to thesis, dissertation or qualitative research reports, focusing on data reduction, analysis, interpretation, credibility, ethics and dissemination.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 503 or CRJ 613 or EDP 503 or NUR 608 or PAF 610
NUR	616	Community-Based Partcpt Rsrch	Overview of Community-Based Participatory Research (CBPR). Familiarizes participants with key historical underpinnings of CBPR, principles of CBPR practice, as well as methodological CBPR considerations in building community partnerships, issue analysis, research planning, data gathering and data sharing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only NUR 616 or NUR 691 (Community-Based Research)
NUR	617	Foundation in Science	Provides basic skills necessary for health-related research specifically geared toward (1) understanding concepts of widely used statistical methods with examples from health care; (2) ethical knowledge of human subjects research; and (3) processes of research including research design, interpretation and presentation of results and critiquing research articles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 502 or EDP 502 or EXW 501; Credit is allowed for only NUR 617 or NUR 691 (Foundational Concepts in Science and Statistics)
NUR	618	Research-Based Health Policy	Integrative synthesis course in which students apply values and knowledge from previous PhD core courses in philosophy of science, theory analysis, state of the science, quantitative and qualitative methods, and the art and science of teaching. Examines the role of scholars and scientists in health policy reform. Using tools from leadership and innovation science, advances strategies to accelerate the use of interprofessional research in policy decisions and advances the national agenda for improving health and the quality and affordability of health care.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 602, 603, 604, 605, and 609

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NUR	628	Palliative Care in Older Adult	Focuses on theory and research underlying end of life and palliative care for the older adult utilizing current practice guidelines and research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing graduate student
NUR	629	Research Geriatrics	Gaining knowledge and skills in critical appraisal and synthesis of evidence to guide best practice in gerontology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only DNP 629 or NUR 629
NUR	630	Mechanisms of Disparities	Analyzes and applies the complex issues underpinning culture and health disparities related to a specific health outcome to research with a selected cultural group.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Mechanisms of Culture), 598 (Mechanisms of Disparities) or 630
NUR	631	Leveraging Culture	Analyzes the complex issues underpinning the development of evidence-based interventions among various cultural groups. Also analyzes methods of leveraging culture to optimize the development, delivery, effect and evaluation of health interventions for various cultural groups.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 630 (or NUR 598 Mechanisms of Disparities); Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Leveraging Culture in Intervention Development) or 631
NUR	640	Integrative Theories of Innov	Analyzes cross-disciplinary theories of innovation for improving health and quality of health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice or Advanced Nursing Practice (Innovation Leadership) DNP student or NUR 605; Credit is allowed for only NUR 640 or NUR 691 (Integrative Theories of Innovation in Healthcare)
NUR	641	Theories of Emergent Leadershp	Analyzes cross-disciplinary theories of leadership. Emphasizes leadership frameworks that describe, explain and predict the relationships among leadership and healthcare innovation and outcomes.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 640. Credit is allowed for only NUR 641 or 691 (Theories of Emergent Leadership in Healthcare Innovation)
NUR	650	Human Lactation in Post-Modrn	In-depth exploration of the complex and multifaceted social, cultural and environmental contexts that affect the public health goal of improving successful breastfeeding during the first years of life.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only NUR 650 or 691 (Human Lactation in the Post Modern World)
NUR	670	Curriculum Development	Includes analyses of historical, philosophical, societal, environmental, cultural, technological, and educational factors of curriculum development in academic and practice settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Nursing Education) MS or Graduate Certificate in Nursing Education; Pre- or corequisite(s): NUR 671 with B or better
NUR	671	Teaching: Academic & Practice	Analyzes theories, issues, research related to teaching in nursing and educational leadership. Focuses on the process of teaching and learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program.
NUR	672	Design/Delivery;Mediated Instr	Addresses instructional design issues, theory, and practices related to online and electronically mediated learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	673	Produce & Evaluate Programs	Critical examination of standards, regulatory environment, administrative systems, leadership requirements, technological infrastructure, human factors, future trends regarding mediated education planning, production, and evaluation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	677	Teaching Intensive	Designed as a mentored teaching experience in nursing and a mentored exploration of the concept of scholarly citizenship as applied in the educator role in interdisciplinary, university-level education. Includes opportunities for students to examine different philosophies and theories of traditional and mediated teaching and learning; design content and learning experiences for selected topics; compare and contrast various culturally relevant, learner-centered strategies, technologies, media and Web-based tools for classroom and clinical use and analyze evaluation methods. Includes opportunity for exploring educational policy and translation of policy into best practices.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 677 or NUR 691 (Scholarly Citizenship: Teaching Intensive)
NUR	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688

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NUR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-15		
OBS	501	Obesity Prevention Management	Helps students understand the complex etiology of obesity and enhances their ability to work with individuals and populations at risk of obesity to develop effective behavior change-based strategies for prevention and management of the condition across the lifespan.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Obesity Prevention and Management MS major; Credit is allowed for only OBS 501 or OBS 598 (Obesity Prevention and Management)
OBS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
OBS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	10	Leadership Development	Trains and manages the student team leads for the Jump Start Program. Students learn ways to effectively manage, facilitate and lead group discussions and activities.	N	LEC	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0		
OGL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
OGL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	200	Intro to Org Leadership	Presents a broad survey of leadership theory and research as currently practiced in formal organizations. Includes examination of leadership models, power and influence, team leadership, cross-cultural leadership, strategic styles of interaction, ethics, leadership skill development, decision-making techniques and effective goal implementation.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	220	Behavioral Dynamics in Org	Explores the different theories, strategies and skills that managers and subordinates need to develop to improve interpersonal relations. Primarily emphasizes skill areas in leadership, motivation, communication, group dynamics, organizational development, conflict resolution, political strategy, cross-cultural relations, ethical behavior, stress management and time management. Develops effective strategies for becoming effective managers, subordinates, peers and students.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	240	Intro to Project Management	Offers insights into each step of the project management process through an examination of various theoretical approaches.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Credit is allowed for only OGL 240 or OGL 320

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OGL	260	Resource Allocation in Org	Introduces the decision-making framework of resource allocation within the broader context of organizations and society. Students learn that resource allocation decisions are regularly guided by values, organizational purpose, and fundamental principles of value creation and sustainability. Primarily focuses on the development, management, and allocation of tangible and intangible resources; accounting statements; profit and loss drivers; risk, return and tradeoffs; and stakeholder accountability.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): MAT 117 or any course with General Studies MA designation OR Visiting University Student
OGL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	300	Theory Practice of Leadership	Presents an in-depth study of leadership theory and its practical application in formal organizations. Includes examination of the trait approach, situational approach, contingency theory, path-goal theory, leader-member exchange theory, transformational leadership, psychodynamic approach, and women and leadership. Emphasizes application of these theories in real-world case studies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	320	Foundations Project Management	Covers project management terminology, tools, best practices, theoretical approaches, the phases of project management and how they are applied developing a project plan and schedule, and other competencies needed to effectively manage projects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only OGL 240 or OGL 320 OR Visiting University Student
OGL	321	Project Leadership	Explores how executive management is responsible for conceiving, designing, implementing and managing the organization's overall objectives, culture, environment and processes as part of the project management process. Within this context, primarily focuses on understanding project management, aligning project management with the organization, project management oversight, projects as capital investments, globalization and resources optimization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 45 hours OR Visiting University Student
OGL	322	Project Time Management	Explores project scheduling and time management within the broader context of the planning effort. Students learn how important the determination of the timing and sequence of project activities is to the planning process—and ultimate project success. Primarily focuses on understanding bar charts, basic networks, the critical path network, precedence networks, resource allocation, schedule updating, schedule compression, scheduling and schedule risk management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	323	Project Cost Management	Concepts and complex processes of effective project cost management. Primarily focuses on project needs assessment, cost estimation, project cost control, project budgeting, cash flow management, financial management, value management, configuration management and supply chain management. Students also learn to appreciate the importance of integrating cost and value management processes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	324	Resources Project Management	Major elements of project resource management as well as the broader context of this critical planning function. Students learn that sound resource management is an important part of developing a sustainable competitive advantage in the emerging global marketplace. Primarily focuses on operations and productivity, resources in project management, product design, process strategy, layout strategy, human resources and job design, supply chain, inventory management and scheduling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	326	Project Procurement Management	Concepts and processes of procurement management. Primarily focuses on sourcing management, supplier selection, contracts and legal requirements, risk management, negotiation, project management, quality, supplier management and financial decisions. Effective procurement requires the use of good business practices capable of maximizing value to the organization through the acquisition of goods and services. Students learn that procurement professionals control the entire sourcing and acquisition process.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	340	Organizational Skills	Develops and enhances skills needed in effective organizations such as communication and the use of technology.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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OGL	343	Social Processes in Orgs	Examines the interdisciplinary nature of social processes and human interactions across a number of different organizational contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
OGL	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student
OGL	350	Diversity and Organizations	Critical interdisciplinary analysis of individual, cultural, and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours; Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
OGL	355	Leading Org Innovation	Process and theory of strategic management with primary emphasis on situation analysis, strategy formulation, strategy implementation and strategy evaluation. Covers the strategic management context, external analysis, internal analysis, functional and competitive strategies, international strategies, strategic entrepreneurship and nonprofit strategy. Students understand the process of analyzing situations, developing appropriate strategies, putting those strategies into action, and evaluating and changing those strategies as needed.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
OGL	360	Assessment of Leadership	Empirical analysis of leadership, a conceptual model of effective leadership, and a practical guide for developing the competencies and attributes most likely to produce effective leaders. Primarily focuses on leadership competencies, organizational fit, leadership strengths, fatal flaws, leadership teams, leadership development, improvement measurement and leadership follow through. Students learn to distinguish between leadership success and leadership effectiveness.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	365	Organizational Contexts	Explores how organizations function by analyzing in depth a specific organizational context like health care, family, education, government, community, religion or the economy.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	375	Corporate Ldrshp - Starbucks	Examines leadership from the perspectives of the leaders of one of the most trusted and respected companies in the world, Starbucks.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Starbucks College Achievement Plan student; Credit is allowed for only OGL 375 or OGL 394 (Corporate Leadership: Starbucks)
OGL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	421	Project Risk Management	Philosophy, principles, practices and techniques for managing risk in projects. Covers risk identification, qualitative risk management, risk treatment, monitoring and review, project processes, risk allocation, environmental risk and quantification of project risk. Students learn that risk management assists project managers in setting priorities, allocating resources and implementing actions and processes that reduce the risk of the project not achieving its objectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student
OGL	422	Project Quality Management	Process and theory of total quality management with primary emphasis on the total quality approach, ethics and corporate responsibility, strategic alliances, quality culture, employee empowerment, leadership and change, team building, effective communication, and tools and techniques. Students understand how continual improvement of people, processes, products/services, and environments can enhance the process and outcomes of project management. Students have the opportunity to develop practical total quality management skills as they apply theory and practice to real-world cases.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student

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OGL	481	Org Leadership Pro-Seminar I	Students draw on their experiences in previous organizational leadership courses, employing key concepts, theories and skills learned throughout the program toward the strategic analysis of organizations. Using Bolman and Deal's organizational frames concept, students synthesize key learnings across their education and explore organizations through four unique perspectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIS 340 or OGL 340; BIS 345 or OGL 345; BIS 350 or OGL 350; OGL 240 or OGL 320; OGL 300; minimum 90 hours
OGL	482	Org Leadership Pro-Seminar II	Students draw on their personal background, individual differences, knowledge and skills to assess career choices that maximize their strengths, values and passions. Students explore their own balance between work and the other important elements in life, and develop strategies for living a meaningful and fulfilling life, at least through work. Explores the notion of career management and work/life integration from a number of different perspectives, and centered on one's own unique personal characteristics, life circumstances and goals. Explores some of the most relevant career management literature/theory, taking into consideration the interdisciplinary nature of this topic. Also connects students with some of the ideas learned in previous organizational leadership core courses, conducts a qualitative, thematic self-analysis, develops short-term and long-term career/life plans, and collect artifacts to help along life's journey.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): OGL 481 with C or better
OGL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
OGL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student
OGL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7	L	Prerequisite(s): Organizational Leadership major; minimum 90 hours; BIS 343 and 345; ENG 102 or 105 or 108 with C or better; OGL 200, 220, 240, 260, 300, 321, and 350
OGL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
OGL	520	Social Psychological Perspect	Social psychology is defined by the social influence that all people have on the beliefs, feelings and behavior of others. Studies social influences, the behavioral ramifications associated with the psychology of social processes and the ramifications for organizations and organizational leadership. The foundations of the field of social psychology, methodological approaches, interdisciplinary perspectives and application-oriented ideas and innovations form the basis for this course that integrates scholarship and applied social psychology to gain an enhanced perspective on the social influences associated with organizational and interpersonal behavior. From a leadership perspective, explores ideas as diverse as interpersonal influence, attitude formation and differentiation, stereotyping and prejudice, attraction, persuasion, obedience and aggression.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	530	Critical Perspctv Ldshp Theory	Engages the normative and epistemological underpinnings of many of the theories of organizational leadership studies. This critical engagement explores how assumptions about leadership and leadership theories may challenge or reinforce, overtly or not, oppressive social relations. Places leadership studies as an academic field in a broader social, political, cultural and ethical context to best address the embedded assumptions in leadership relations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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OGL	540	Evidence Based Inquiry	Provides a broad understanding of the methodological issues involved in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of research methods, whether inductive, deductive or abductive. Largely hands on with a focus on discussion and exercises.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	550	Leading Organizational Change	Organizations are a combination of structures, processes and relationships that bring people together to achieve a common goal. However, organizations do not operate in isolation—they are embedded in complex social, political and financial contexts. Leadership requires individuals to discern and balance competing demands and tensions inherent in organizations. Provides an overview of organizational theories to help leaders understand and be effective in these contexts. By looking at organizations through metaphorical lenses such as machines, brains and organisms, students learn how to create new options for organizational success in ever-changing operating environments. Applies theories to case studies to develop insights and innovative approaches to organizational change. A student deliverable is the creation of a plan to map out the student's capstone project in preparation for the applied project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	551	Ldshp Emotional Intelligence	Encourages greater knowledge of self through personal reflection, participation in experiential activities and numerous opportunities to make sense of discoveries. All of this occurs within the context of expanding knowledge of leadership skills and abilities. Encourages students to take every opportunity to learn about and bring insights to bear in classroom discussions. Shapes the leader within so that students are best positioned to lead in all areas of life. Over the next few weeks, explores the essential knowledge, abilities and values relevant to effective leadership. By the end of this course students have a greater understanding of their own leadership style and developmental plan for acquiring new leadership-related knowledge and abilities throughout their careers.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	552	Leading Diverse Teams	Helps students build more effective working relationships and improve their ability to lead, influence, cooperate and work effectively with others in today's increasingly team-oriented organizations. This course may differ from previous courses taken. At the center of the course is an intensive, unstructured learning group experience. The primary educational tool in this class is experience in a group (in this class referred to as a T-Group or Training Group). Other educational resources are readings, brief theory discussions, personal journals and a personal reflection paper after the class sessions conclude. These are fundamental for helping students to frame learning group experience and for facilitating learning. Emphasizes learning about oneself in the context of others based on the here-and-now experience of the group.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	553	Intercultural Leadership	In today's increasingly global and interconnected world it is important for leaders to understand the role that culture plays in one's leadership and communication style. Students obtain the knowledge and skills necessary to lead in culturally diverse environments. Through readings, discussions, video and interactive simulations, students gain a concrete understanding of a variety of leadership and communication styles that are found throughout the world. Students also increase their intercultural competencies and global awareness.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	554	Learning & Development in Orgs	Focuses on adult learning interventions and professional development within the context of a learning organizational setting. Integrates motivation and adult learning, current neuroscience, Bohm dialogue and instructional design. Develops the knowledge and skills needed to plan, design, develop, implement and evaluate adult learning interventions (materials, courses, curricula, programs) within different forms of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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OGL	555	Leading Beyond Conflict	Today's leaders are increasingly confronted with conflicts that escalate into issues that could result in costly litigation. Comprises a review and analysis of contemporary methods of alternative dispute resolution, including arbitration, negotiation and mediation, with a strong focus on mediation. Students learn about the alternatives to costly litigation and develop working strategies to take advantage of these alternatives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	556	Ldrshp Wcked Envrnmntl Problms	Environmental leadership promotes a societal change such that we move away from the perspective where economic growth is valued and takes precedence above all to one that both recognizes the limits and value of natural resources in our environment and embraces just conservation practice. The environmental challenges we are faced with today (e.g., climate change, renewable energy) are described as "wicked." Wicked problems are difficult to explain, plainly define, have no one solution, and are often the result of other indefinable problems. Environmental leadership focuses on engaging followers to jointly and creatively confront wicked challenges and promotes environmental justice addressing the relationship between social inequality and environmental quality among various stakeholders. Course critically evaluates these leadership dimensions. This examination is not limited to Western ideals found in corporate organizations but also extends to conservation practice in the developing world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	558	Leading Organizational Innovat	Every modern organization, regardless of sector or mission, needs leaders who understand the impacts of continuing innovation on organizational success and sustainability. Examines how leadership can facilitate innovative activities within every level of an organization. Students conduct independent research for integration into a collaborative team project in the development of a graphical conceptual model that includes factors such as culture, structure and collaborative activities that enhance organizational innovation.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	559	Modelng Systms and Stkhldrs	Studies how leaders can use systems theory and stakeholder theory to assess the inputs from external stakeholders and their impacts on internal organizational systems. Using current literature, students work independently and in teams to build and apply a conceptual model of the significant relationships among organizational systems and stakeholders. Results highlight relationships among variables that can be tested using quantitative and/or qualitative research methods.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
OGL	561	Collaborative Governance	Exposes students to the opportunities and challenges of the non-market, non-state realm of nongovernmental organizations and how they facilitate private-public partnerships. Assesses the realm of action, appropriateness of their missions and where they find their limitations. Requires students to think globally and consider the roles of various actors of civil society with a critical eye.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	562	Resource Development in Orgs	Many types of resources are needed for organizations to achieve long-term sustainability. Surveys various capital resources firms need to succeed. Covers tools such as the International Integrated Reporting Council's six capitals framework (financial, manufactured, intellectual, human, social, natural) and theories that undergird these models. Through readings, case studies, and assignments, students learn about the process of value creation; the relationship between resources and an organization's business model; how the various forms of capital can be measured and reported; and what leaders can do to intentionally develop multiple forms of capital in a way that creates financial returns for the organization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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OGL	563	Leading Social Change	Focuses on methods used to reform social, cultural or political norms, beginning at the local level and connecting with movements for broader social change. Grassroots movements arise on all sides of the political spectrum, and local movements can unite activists around common goals despite larger ideological differences. The term "grassroots" is a misnomer, however, in that it implies the lack of leaders or of institutional support, whereas in reality, leaders attempting to change society must learn to network with a variety of stakeholders, from the level of individual neighbors to political leaders and large institutions. Students look critically and creatively at the ways local leaders have worked on a daily basis to promote community-based causes, in order to become more effective local activists, organizers, and civic and community leaders.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	565	Future of Wrk and Organization	Focuses on the dynamic nature of work, labor and occupations related to social and technological change; the impacts on workers, management and society. Also addresses new and changing occupations and leadership roles related to new economies of scale.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	568	Women and Leadership	Investigates how gender is produced, operationalized and reified in the workplace. Course content is specific to the role of women at work and in leadership. Emphasizes understanding the reproduction of gender inequality with a focus on how commonly shared beliefs about gender and other social categories operate through interaction to differentially affect the experiences of men and women in ways that often disadvantage women. Despite majority representation across a range of public and private sectors, women continue to be visibly absent from leadership roles. Although, some purport that progress has been made to narrow the existing leadership gap for women, more men than women achieve leadership roles and assume these positions at a faster pace than their female counterparts. What contributes to this ongoing phenomenon? What are the results of the underrepresentation of women in leadership? How might organizations intervene and cultivate equity in the workplace?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	569	Indigenous Ldrshp Diplomacy	Offers critical insights into how indigenous peoples around the world have responded to challenging issues in both historical and contemporary contexts by drawing from case studies, primary source materials, and emerging scholarship on indigenous leadership and diplomacy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	570	Analyzing Organizations	Focuses on the qualitative and quantitative research methods that are commonly used to assess organizations. Explores how best to frame organizational assessments and explore possible methodological choices for assessment design. Discusses both quantitative designs and qualitative approaches to organizational assessment. Focuses on planning assessments, making informed research decisions, understanding the ethical implications of organizational assessment, carrying out research and reporting finding.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	571	Advanced Leadership Assessment	Students reflect on and assess their advancement as leaders while also critiquing and assisting with the development of leadership abilities in colleagues. Leadership effectiveness and social dynamics are analyzed in contexts ranging from students' own experiences to narratives in historical, literary, anthropological, political and sociological contexts. Hands-on practice with leadership assessment surveys is central to the course, and students are trained in creating their own versions of qualitative and quantitative questions on 360-degree surveys.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	574	Qualitative Data Analysis	Research design and research methods in leadership using qualitative approaches.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 540
OGL	575	Quantitative Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in basic data analysis in leadership research. Exposes students to the assumptions, principles and applications of basic quantitative research methods and analytical techniques, such as t-test, ANOVA and simple regression. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 540

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OGL	576	Adv Multivariate Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in applied multivariate data analysis in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of multivariate techniques, from multiple regression to mediation, moderation and conditional process analysis. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	577	Strct Eqtn Model Org Ldr Rsrch	Provides a broad understanding of the theoretical and methodological issues involved in structural equation modeling in leadership research. As such, exposes students to the assumptions, principles and applications of structural equation modeling. Uses SPSS and AMOS statistical packages.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	578	Agent-Based Modeling	Leadership is a complex process that involves multiple stakeholders, including followers, organizations and communities. Students learn to think about leadership processes systematically and learn to use NetLogo to build agent-based models capturing phenomena of interest. Also examines how the interactions among individual agents in the system create dynamics and emergent collective outcomes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
OMT	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 or TEM 230 OR Visiting University Student
OMT	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
OMT	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
OMT	343	Occupational Safety/Ergonomics	Health and safety movement, accident theories and effects, OSHA standards and liability, safeguarding, hazards, workers' compensation, ergonomics, and safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): minimum 56 hours OR Visiting University Student

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OMT	402	Legal Issues for Technologists	American legal system and impact on technology management issues: contracts, torts, intellectual property, white collar crime, antitrust, environmental, and employment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	430	Ethical Issues in Technology	Topics in social responsibility for industrial technology and engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours; Credit is allowed for only OMT 430 or OMT 504 OR Visiting University Student
OMT	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431
OMT	440	International Business	International business principles and operations, including partnerships, trade agreements, currency issues, international sales, and cultural differences between countries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3	G	Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	452	Industrial Human Resource Mgmt	Explores the management of workplace issues and contemporary events as it relates to human capital within an organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better
OMT	480	Organizational Effectiveness	Explores the interaction of individual and group behavior with organizational efficiencies, strategies, structure and culture so organizations can work more effectively.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better OR Visiting University Student
OMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		
OMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Pre-requisites: Minimum Junior standing; Minimum 2.25 GPA
OMT	503	Marketing Management	Modern methods and industrial case studies of planning, pricing, promoting, and distributing goods and services in the global marketplace.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	504	Ethical Issues in Technology	Analyzes legal and ethical framework for making managerial decisions in the corporate environment of engineering- and technology-related industries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only OMT 430 or OMT 504
OMT	520	Strategic Mgmt of Technology	Analyzes entrepreneurial dynamics and technology development, methods of research and development management, new technology implementation, and start-up organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	548	Statistical Methods for Rsrch	Multivariate statistical techniques to analyze research data. Uses statistical software and applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	549	Research Techniques & Apps	Selection of research problems, analysis of literature, individual investigations, preparing reports, and proposal writing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	560	Managerial Decision Making	Focuses on structural thinking to make informed and optimal managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	570	Advanced Project Management	Planning, organizing, coordinating, and controlling staff and project groups to accomplish the project objective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only OMT 570 or TMC 470
OMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	112	Identity Service America Democ	Introduces the history of American democracy and civic engagement, while developing civic identity through hands-on democracy-in-action assignments. Examines the rich history of civic engagement as it applies to different races, sexes, genders and religions to unpack the what, why and how of getting involved and making a difference in public service. Examines cultural identity, including diversity of race, sex, gender and religion, as it contributes to social, civic, political and democratic life. Understanding how to participate in civic society culminates in the creation of a plan to contribute to the ongoing mission of sustaining a vibrant, healthy and unifying American democracy.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB & C	Credit is allowed for only CPP 112 or CPP 194 (National Service and American Democracy) or PAF 112 OR Visiting University Student
PAF	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	200	Public Serv & Policy in 21st C	Provides a broad introduction to the field of public service and leadership. Topics include an overview of management, policy, urban studies, and leadership in the public sector. Covers the history and development of the public sector, as well as how it serves contemporary society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	201	Economics and Public Policy	Introduces the terminology and methods of analysis in microeconomics. In particular, examines the behavior of individual consumers and firms, with a focus on market failures and the role of government policy in correcting those failures. Applies microeconomic principles to the distribution of income, policies for eliminating poverty and discrimination, the problems of environmental pollution, and the impact of different market structures on economic activity.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	
PAF	203	Cross-Sector Collaboration	Examines how public, private and nonprofit organizations seek to address social challenges and explores how the three sectors work together and in isolation to tackle social problems. The motivation of employees in the public, private and nonprofit sectors and the ways in which organizational structure, environment and legal contexts differently constrain or facilitate action within and across these organizations. Explores effective strategies for collaboration among the public, private and nonprofit sectors and identifies organizational similarities and points of contrast that could enhance or create barriers to such collaboration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): enrollment in the second year of Next Generation Service Corps or Reserve Officer Training Corps (all branches) and completion of first year in Next Generation Service Corps
PAF	220	Introduction to Urban America	Investigates traditional and evolving forms of civic engagement and management. Examines leadership and organizational models to urban development and decision making.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	240	Urban Policy	Examines major theories about the purposes and processes of urban policy formulation, adoption, and implementation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	C	
PAF	300	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student
PAF	301	Applied Statistics	Focuses on statistical techniques used in social science research. Applies concepts such as measures of central tendency and dispersion as well as statistical techniques, including the following: one-sample z and t tests, two-sample t tests, chi-square, and correlation. Goals include helping students understand the mathematical and statistical concepts presented and assisting them in using these concepts in everyday life and in the study of social sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	CS	Prerequisite(s): MAT 142 or higher OR Visiting University Student
PAF	302	Public Service Research Method	The philosophy, scope, and methods of public sector research. Examines quantitative and qualitative research methods and research design.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Urban and Metropolitan Studies BA or BS major OR PAF 301 with C or better OR Visiting University Student
PAF	305	Urban Governance	Examines major shifts and trends in urban America. Concentrates on the changing approaches to governance and policies of urban areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	311	Leadership and Change	The leader's role in bringing about significant organizational and societal change with special attention to group and organizational behavior dynamics, establishing a vision, mobilizing and empowering individuals and groups, and assessing outcomes of the change process in a variety of settings.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student

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PAF	340	Contemporary Policy Challenges	Develops conceptual, critical, and practical understanding of public policy, the policy process, and policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
PAF	350	Intro Science & Tech Policy	Explores the variety of ways in which governments make policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	351	Urban and Metropolitan Studies	Examines the city using a multidisciplinary approach drawing from different historical, cultural, social, philosophical, and economic issues and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	352	Urban Theory	Examines the sociological, economic, and political theoretical positions underlying the development and evolution of metropolitan areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	360	Emergency Management I	Emergency management, including basic issues of all-hazards management, phases of emergency management and basic operational systems of incident command and the broader incident management system in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	361	Hazards and Risk Management	Overview of natural and technological hazards and disasters, including core concepts and evidence in the field. Introduces concepts of risk and risk management and how they are used in emergency and disaster preparedness, response and mitigation operations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	363	Tech in Emergency Management	Explores latest apps, software and social media used in planning (e.g., GIS for hazard mitigation), public crisis communications (via apps or social media platforms) and incident response platforms (for resource and operations coordination). Emphasizes hands-on experience with such tools.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): MAT 142
PAF	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	400	Senior Capstone Project	Teaches students to solve problems related to the public sector by applying theory, knowledge, and methods from previous courses to a hands-on project in the community. Seminars include guest speakers and discussions on professional development. Students work as individuals and as a team to prepare research papers and a professional report that is presented to the community.	N	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 200 with C or better; PAF 201 with C or better; PAF 301 with C or better; PAF 302 with C or better; PAF 311 with C or better; PAF 340 with C or better; PAF 460 with C or better OR Urban and Metropolitan Studies BA or BS student
PAF	405	Citizen Engagement & Com Bldg	Develops a conceptual, critical, and practical understanding of urban dwellers' involvement in community affairs as citizens and as builders of vital neighborhoods and vibrant cities.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	406	Public Admin & Community Dev	Critically examines the concepts community and development and considers how important forces such as diversity, civic life, changes in social space, and globalization, affect our understandings about these concepts and influence our actions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	410	Building Leadership Skills	Introduces understanding and developing leadership skills, including an examination of leadership theories and models from multidisciplinary and crosscultural points of view, an assessment of the student's leadership capabilities, and practical applications to improve individual leadership capabilities.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours; Credit is allowed for only PAF 410 or URB 410 OR Visiting University Student
PAF	420	Managing Across Boundaries	Within the U.S. system of federalism, thousands of governments interact at different levels on issues ranging from taxation and education to zoning and water. Further, governments at all levels interact with nonprofit and industry sectors to provide public services and collaboratively address complex regional and, increasingly, global challenges. Finally, governments and other service providers interact across local, state, regional and national boundaries. Examines how to manage across boundaries (e.g., governmental, nongovernmental, stakeholders, communities, sectors). Emphasizes intergovernmental relations from the perspective of local and state governments; also exposes students to interstate and international forms of intergovernmental relations. Exposes contemporary public management frameworks and applies these frameworks to understand how leaders manage increasingly complex public challenges.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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PAF	421	Leadership Capstone	Builds upon leadership courses in the Leadership and Ethics certificate program by applying concepts and examples from the readings as well as individual experiences.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): CPP 301 or PAF 410; PAF 311
PAF	424	Emergency Management II	Accidents and emergency situations have plagued man since the beginning of history and will undoubtedly occur during our conceivable future. Armed with knowledge and skills for managing such occurrences can lessen their impact on society. Presents the theories, principles and approaches to emergency management. Discusses the philosophy of comprehensive emergency management with the four attendant steps which include mitigation, preparedness, response and recovery. Presents an analysis of past disasters along with their impacts on policy formation leading to the current FEMA all-hazards approach. Discusses the role, duties and importance of the emergency manager throughout the course. Reviews contemporary threats such terrorism. Finally, presents legal issues involving emergency management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 360 with C or better
PAF	425	National Incident Mgmt System	Covers concepts, terminology, players, compliance requirements, including doctrine of National Incident Management System per HSPD-5. Discussion of National Response Plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	460	Public Service Ethics	Role, values, and issues of public management in democratic governance, citizen participation, power structures, and professional codes of conduct.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	461	Homeland Security	In-depth analysis of policies, procedures, and organizational structure for effective homeland security program. Covers all hazard/all risk philosophy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PAF 461 or CRJ 554 OR Visiting University Student
PAF	468	Planning and Exercises	Requirements, planning, conduct, and critique of exercises related to emergency planning. Emphasizes realism using moulage and props.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	469	Terrorism Defense	Explores the background and evolution of terrorism. Presents specific tactics for preparation for and response to acts of terrorism.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 598 (Terrorism Defense) or PAF 469 OR Visiting University Student
PAF	470	Topics Public Econ & Fin Mgt	Provides an analysis of public economic practices and problems in a federal system. Presents detailed descriptions, where appropriate, of significant institutions and applies modern economic theory to the ways that these institutions finance and deliver services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): ECN 212 or PAF 201 with C or better
PAF	471	Public Policy Analysis	Provides further study in the concepts, models, and operational methods used in public policy decisions and analysis. Enables students to develop higher skills needed for defining policy issues, identifying alternative solutions, and predicting the potential impact of policy alternatives.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 301 with C or better; PAF 340 with C or better
PAF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6		Prerequisite(s): Barrett Honors student
PAF	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student
PAF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-7		
PAF	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-3		
PAF	501	Public Service Research I	Philosophy, scope, and methods; public service research design, values, and ethics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	502	Public Service Research II	Quantitative techniques including multivariate analysis, data analysis, decision making, and computer applications in public affairs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501 with C or better

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PAF	503	Public Affairs	Development and context of American public administration and policy, role of administration in governance, and values and ethics in administration.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	504	Microecon of Public Policy I	Provides key principles of microeconomics. Places particular emphasis on developing the analytic tools of economic reasoning and using these tools to examine policy interventions of interest to public managers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	505	Public Policy Analysis	Institutional and formal analysis of policy processes, decision making, and problem solving; values, ethics, and the uses of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	506	Public Budgeting and Finance	Legal, social, economic, political, institutional, and ethical foundations of governmental finance, budgets, and budgeting.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	507	Public Human Resource Mgmt	Personnel systems, behavior and management of people in public organizations, collective behavior, unionism, conflict management, motivation, productivity, and ethics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	508	Organization Behavior	Theory and application in the management of organizational behavior with emphasis on leadership and the public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	509	Public Affairs Capstone	Capstone application of core course knowledge, skills, and abilities required for public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501, 502, 503, 504, 505, 506, 507 and 508 with C or better
PAF	520	Public Management	Management process in government and public agencies, with emphasis on the executive leadership within the public sector.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	521	Managing Public Money	Overview of public financial management, including budget planning and execution; capital budgeting, debt management and administration; funds management and investment; and financial control.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 506
PAF	522	Adv Govt Financial Mgmt	Focuses on capital budgeting and infrastructure financing. Covers information required to finance a capital improvement plan, specifically for infrastructure items such as streets, parks, public utilities, airports, highways, bridges and tunnels, and other public works. Combining strategy as well as process, examines financial management from different perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Public Administration MPA student
PAF	523	The City and County Manager	Manager's role and resources in the differing forms of administrative, legislative, and community sectors.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	525	Public Entrepreneurship	Explores entrepreneurship in the public sector from various angles, including small and large communities and nonprofits.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	529	Org Change and Development	Explores the nature and management of change and development as a tool to achieve organizational goals; effecting planned change.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	530	Mgmt of Urban Government	Administrative practices and behavior within the urban political administrative environment. Functional areas such as citizen participation, urban planning, urban transportation, and the conflicts between urban politics and administrative efficiency.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	531	Community Conflict Resolution	Interdisciplinary approach to understanding the dynamics of community conflict. Strategic considerations in policy design and advocacy; potential reaction to conflict. Relevant models and research findings generated by both case studies and comparative methods.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	534	Urban Services Infrastructure	Provides an overview of the network of services being provided in the urban environment by a variety of governmental and nongovernmental agencies. Discusses coordination, cooperation and overlap of services by local, special district, county, regional and state levels, alternate delivery methods including nonprofits, and the evolving relationship of these services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	540	Adv Policy Analysis	Emphasizes the structure of policy problems, forecasting policy alternatives, optimizing resources, and reducing uncertainty in policy making.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 505 with C or better
PAF	541	Program Evaluation	Various methodologies available for the evaluation of public policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501 with C or better
PAF	544	Urban Policy	Understands major theoretical frameworks, methodological approaches and substantive issues emphasized in urban policy research. Hones skills in policy analysis.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545
PAF	546	Environmental Policy and Mgmt	Analyzes environmental policy and planning issues and principles related to the analysis and management of natural and urban/regional resources.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	547	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
PAF	548	Women/Politics/Public Policy	Explores how political philosophy, politics, and public policy affect and are affected by women.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	552	Integrated Emergency Mgmt	Theory and practice of comprehensive emergency management. Explores scope and function of Department of Homeland Security.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	555	Information Tech in Emerg Mgmt	Provides theory and application of computer-based programs in emergency management and the use of various emergency modeling programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	560	Community Resilience	Examines community resilience from a systems perspective, embracing governments, private, nonprofit and civic roles. Presents research, case studies, and strategies for policy planning and implementation. Provides an understanding of how community members respond to the need to prepare for, endure and recover from disasters and the ability to utilize multiple communication methods to help community members before, during and after these emergencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	561	Interoperability Emergency Mgr	Enables understanding of the multiple technologies and skills utilized by emergency managers to enhance successful coordination and communication between all levels of emergency managers and responders during emergency mitigation, prevention, preparedness, response and recovery operations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 554
PAF	562	Higher Education Policy	Broad overview of higher education policy. As used here, the term "policy" in higher education refers to government-produced policies (e.g., federal grants policy, state policies for university budgets) but also university-produced policies (e.g., strategic alliances, policies for faculty or student conduct). Despite the breadth of coverage, there is one theme permeating the course: universities as "public values-based institutions," including social impact, social engagement, outreach and economic impact.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PAF 562 or PAF 591 (Higher Education Policy)
PAF	565	Theories & Practices Democracy	Critically explores the wide range of ideas, issues, challenges, and promises related to democracy in theory and practice. Intended for all students interested in democratic leadership, public service, civic engagement, and participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	566	Part Govern & Civic Engagement	Examines classic and current theoretical debates on participatory governance and civic engagement, discusses theoretical and practical implications, and analyzes different models of participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	570	Microecon of Public Policy II	Provides the policy tools to solve economic problems such as market concentrations, market failures and externalities, and asymmetric information. Increasingly, government interventions are moving away from a command-and-control-style of direct provision of goods and services and toward a large menu of indirect approaches implemented through a complex system of third-party actors. Government intervention in private markets now entails loans and loan guarantees, grants-in-aid, contracts, vouchers, social and economic regulation, and many other policy tools. Each of these instruments involves vastly different behavioral distortions, policy technologies, political considerations and technical sophistication. Analyzes the economics of four policy interventions: grants, tax expenditures, social regulation and vouchers. Provides an overview of each tool (including its key design features) and combines economic theory with background information on how public policies actually operate.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 504 with C or better
PAF	571	Geographic Info Sys/Analysis	Provides foundational information related to application of GIS technology to meet various needs within governmental operations, administration, and public policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	573	Applied Econometrics	Applied treatment of the most important modern econometric methods used to evaluate public policies. Help students become savvy consumers of econometric methodology and develops the methodological skills necessary for implementing quantitative evaluations of public policies. Accordingly, course stresses critical thinking and creativity.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 502 with C or better
PAF	574	Diversity,Ethics,Public Change	Focuses on leadership, ethics, and benefits and tensions of the multicultural city to develop leadership and multicultural competence.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	579	Public Policy Capstone	Integrative, client-based project course.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	582	E-Public Administration	Explores how new techniques and technologies for using, processing and managing information are changing how we interact, work and serve. As an example of this very concept, this course is offered online. During the semester, managers explore current trends, use a wide variety of information and communication tools, and have manager-created content consistent with new trends of online participation. By the end of the course, managers have experience with tools (including Wikis, Blogs, search engines, collaboration tools, reputation systems, social networks, virtual worlds); are familiar with current information issues (transparency, privacy, equal access, governance); and explore how they are relevant to a variety of contexts (local government, non-profits, public service).	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	585	Strat Planning Public Leaders	In an age of diminishing resources, the tools of strategic planning have become crucial for every public sector and non-profit manager. How can a public sector agency (or non-governmental organization) achieve its goals and advance its mission? How can it motivate its people given the absence of the sorts of incentives often found in the private sector? How can these organizations respond to a rapidly changing political, economic and social environment? These are among the questions that are addressed.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	586	Data Analytics for Public Good	Explores techniques used for data extraction, analysis and visualization. In particular, students engage with social media data, devise solutions to address data-poor scenarios, and explore the potential of sentiment analyses to elucidate opinion trends and predict future attitude shifts. Discusses data visualization techniques and engages students with Tableau software. Also explores the social, political and ethical considerations associated with building and managing data analytics programs in the public sphere. Explores issues-critical dilemmas when it comes to issues such as data privacy, data protection, predictive analytics, personalized service delivery and resource provision, algorithmic regulation, and large-scale data analytics for administrative efficiencies and resource management optimization, among others.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	587	Federal Budgeting & Tax Policy	Provides a broad understanding of federal budget and tax policy issues. The knowledge acquired in this class enable students to act as competent parties in the formulation of public policy within the federal budget and tax policy domains. Approximately one half of the class is devoted to federal budget processes and concepts including purposes, coverage, scoring, performance evaluation and proposed options for reform. The second half covers tax policy issues. Throughout the course, focuses on those budget and tax policy issues that are the current subject of political attention.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	588	Global Public Policy	The study of public policy has traditionally focused on the operations of government agencies within national borders. Increasingly, however, public officials at all levels of government must confront challenges and opportunities that exist across borders. Whether the issue is immigration, national security, trade and finance, or the environment, public managers must be aware of global pressures and, in many cases, respond to them. This course gives managers the analytical tools to understand how global issues are currently being managed and what they might do to make the most of global opportunities.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	589	Leadership in Public Orgs	Provides the foundation of theory and practice of administrative leadership. While students learn about all the major theoretical frameworks, focuses on an applied action research model that is useful in analyzing and developing oneself and others in organizational settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	601	Advanced Public Policy Seminar	This advanced seminar in public policy has a single objective: to develop a critical thinking of theoretical perspectives developed to analyze several dimensions of public policy. Focuses on theories and perspectives across specific policy areas since the objective is to get used to analytical lenses, not a specific policy area. This objective is achieved by reading required books each week. This class requires the ability to critically analyze a body of literature as a prerequisite for advancing that literature. The general format of this course includes reviews of class material and discussion. Prior to each class, students are expected to read the required books listed in the syllabus. Students are responsible for contents included in the readings, even if it is not explicitly reviewed in class.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	602	Adv Rsrch Desgn for Public Pol	The logic, design and conduct of applied social research for students interested in public management and policy. Traditional scientific explanatory research is a necessary prerequisite for any prescriptive research. The primary orientation of this course is to focus on development of social science explanations for public administrative phenomena and the development of research designs which permit testing of hypotheses derived from these explanations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	603	Adv Econ Public Admn & Policy	Theory of utility and demand, theory of the producer, organization, operation of product and factor markets, market equilibrium, regulation, risk and uncertainty, general equilibrium and welfare policy, market failure, public goods and taxation, and game theory.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 504 with C or better; doctoral major
PAF	604	Intellect Foundns Public Admn	Explores significant developments and themes in the theory of public administration, especially American public administration. Major foci in this seminar include the historical development of public administration as a body of thought and as a theory of politics; the enduring theme of public administration and democracy; various possible unifying themes, theories, and criteria; and prospects for future theory and research. Aimed at encouraging advanced students to refine their abilities to identify, analyze, interpret, critique, evaluate, and contribute to the literature and intellectual developments of this field of scholarship, as well as to place current and emerging trends in broader context. Builds on more basic courses in public administration and is intended in part to assist students in preparation for doctoral preliminary examinations in public administration. Assumes that students have a solid understanding of American government and bureaucracy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	605	Org. Theory and Behav. Seminar	Advanced survey of organization theory (OT) and organization behavior (OB) literatures for doctoral students. The seminar pursues multiple goals. It examines the intellectual foundations and historical progression of OT/OB research and explores the craft of conducting social science research related to OT/OB. Specifically analyzes how current literature in public management and administration applies organization theory for research. Develops a research-based understanding of main schools of organization theory so that students gain skills to enable them to engage OT/OB theories in their own research.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to doctoral program
PAF	609	Adv. Quant. Methods Sem.	Provides opportunity to learn the tools necessary for carrying out empirical work through hands-on data work and analysis. Students learn how to specify and estimate linear regression models and test hypotheses about model parameters under different statistical assumptions. Students become proficient in programming statistical routines.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to doctoral program
PAF	610	Adv Qualitative Methods	Explores a number of qualitative research approaches and methods, including ethnography, ethnomethodology, participant observation, interviews, focus groups, content analysis, discourse analysis, and some comparative/historical methods. Also exploreS the important theoretical and ethical issues that bear on these approaches.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Pre-requisites: PhD student
PAF	620	PA Prof Development Workshop	Prepares doctoral students to become productive and effective public administration scholars, teachers, and researchers.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Pre-requisites: Doctoral PAF student
PAF	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-15		

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PAF	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Public Affairs	1		
PAF	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Watts College of Public Service & Community Solutions	School of Public Affairs	1-15		
PAX	230	Intro to Peace Studies	Intensive, one-semester introductory course. Explores multidisciplinary approaches to the study of peace, conflict and human rights as well as the historical background of peace studies (trans)disciplinary orientation. Knowledge gained in peace studies can be applied toward education, policy, law, cross-cultural communication, community-based organizations, nongovernmental organizations and ethics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G	
PAX	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
PBH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
PBH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests..	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300
PBH	310	Epidemiology in Public Health	Essential principles and practices of public health epidemiology. Increases an undergraduate student's ability to analyze problems and make decisions based on application of epidemiologic concepts and methods in a variety of settings. Students gain experience communicating epidemiologic findings in both written and oral formats. Includes applied hands-on exercises in analysis of epidemiologic data, case studies and critical review of epidemiologic methods used in scientific literature.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 300; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	355	Research Methods Public Health	Society incurs high opportunity costs when public health interventions which yield a high health return on investment are not implemented, or when resources are expended on interventions with low health returns. Public health practitioners should, therefore, incorporate the best scientific evidence in planning, implementing and evaluating public health policies and programs. Covers concepts and tools of public health research where the research objective is to provide evidence that informs and improves decisions regarding the allocation of public health resources. Covers basic components that inform evidence-based decision making, namely: accessing the best available scientific evidence; developing research questions, collecting and analyzing qualitative and quantitative data; using data and information systems methodically; and adhering to standards of ethical research.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 310; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402

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PBH	410	Public Mental Health	Explores public mental health research and practice. Considers social determinants, social theory, population assessment methods, ecological models, risk, resiliency, and behavioral health systems of treatment and prevention.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
PBH	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
PBH	435	Environ & Occupational Health	Environmental health designed to address public health issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
PBH	455	Pub Health Program Evaluation	Federal, state and local policies shape the nature of the public health programs implemented in communities. Public health professionals are often responsible for evaluating, at multiple levels, the programs that result from such policies. Provides public health students with the analytical tools necessary to manage the implementation and evaluation of public health programs. Program evaluation serves many important functions. It supplies information to managers who are charged with implementing public health programs and to policymakers who face decisions about which programs to fund, scale back, expand, modify or eliminate. Evaluation is an accountability tool: when a public health agency decides to finance a program, they have a right to ask what their funds bought. Evaluation is also a vehicle for improving public health programs. By identifying what works and what does not--and how new programs fare relative to existing practice--policymakers and managers can improve program designs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 355
PBH	482	Capstone I	First course in capstone sequence wherein a student identifies a project to complete in Capstone II and conducts background research. Projects are related to broad topics explored during prior coursework in the student's program.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours
PBH	483	Capstone II	Independent study in which a student, under the supervision of capstone coordinator, conducts research that is expected to lead to a specific project such as a thesis, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript. Capstone II projects can be done in conjunction with a health care organization or health agency.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 482 (or HCD 482)
PBH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PHI	101	Introduction to Philosophy	Explores issues that philosophers have traditionally considered, including morality, reality, and knowledge.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	103	Principles of Sound Reasoning	Fallacies, validity, and soundness of arguments. May include syllogistic, elementary symbolic, inductive logic, and scientific method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
PHI	105	Intro to Ethics	Philosophical examination of such questions as, How should we live? Is morality a social invention? Does anything matter?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	107	Intro Philosophy of Sex & Love	Examines philosophical views of the nature of sex and love, their relation to gender and sexual ethics. Focuses on the historical development of these concepts and contemporary moral and political debates over issues such as same-sex marriage, polyamory, pornography and free speech, objectification, cybersex, and consent to sex.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Credit is allowed for only PHI 107 or PHI 394 (Philosophy of Sex and Love)
PHI	120	Intro to Medical and Bioethics	Philosophical examination of moral problems that arise in medicine and biology, e.g., end-of-life, reproduction, and patient's rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman student; Maximum 25 hours
PHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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PHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	300	Philosophical Argument/Exposit	Develops techniques of philosophical argument and exposition. Frequent written exercises. Course content may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): Philosophy major; ENG 102 with C or better; minimum 25 hours OR Visiting University Student
PHI	303	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 102, 105 or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions), PHI 303 or REL 300
PHI	304	Existentialism	Covers such topics as absurdity, authenticity, the meaning of life and death, responsibility, and subjectivity. May include readings in phenomenology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	306	Applied Ethics	Philosophical discussion of contemporary moral and political issues, such as abortion, euthanasia, animal rights, affirmative action, and sexual rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	307	Philosophy of Law	Nature and source of law and its relation to morality. Legal rights, legal enforcement of morals, civil disobedience, liability and responsibility, punishment, judicial reasoning, justice, property, and differences between theories of natural and positive law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	310	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student
PHI	311	Philosophy and Literature	In-depth study of selected literary and philosophic texts. Addresses philosophical problems such as the nature of moral goodness and human relations; the purpose of life; or the relations among beauty, truth and justice. Also addresses whether literary aspects of philosophical texts such as myth, image, metaphor or rhetorical devices contribute to meaning or promote ethical insight as well as interdisciplinary tensions and bridges between rhetoric and philosophy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
PHI	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
PHI	318	Philosophy of Religion	Classical arguments for the existence of God. Argument from evil against the existence of God. Justification of religious belief.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	319	Philosophy, Computing & AI	Philosophical problems surrounding artificial intelligence (AI). Thinking as computation and AI; the ethics, epistemology and metaphysics of computing.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	320	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
PHI	322	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
PHI	324	Existential Ethics	Ethical aspects of theistic and atheistic accounts of existentialist philosophy. Freedom and responsibility and their significance in human experiences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	

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PHI	325	Philosophy of Social Science	Philosophical problems surrounding the aims, structure, and methods of the social sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	
PHI	326	Philosophy of Happiness	Examines ancient and contemporary philosophical models of happiness and consideration of criteria for living a life of human flourishing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	328	History of Ancient Philosophy	History of Western philosophy from its beginnings through the Hellenistic period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	329	History of Modern Philosophy	History of Western philosophy from the Renaissance through Kant.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	330	Theory of Knowledge	Nature, sources, and limits of human knowledge. Topics may include truth, a priori knowledge, empirical knowledge, perception, induction, and skepticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	331	Philosophy of Language	Problems pertaining to the nature of language, including meaning, reference, truth, definition, analyticity, translatability, synonymy, and contributions of contemporary linguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours
PHI	332	Metaphysics	Problems pertaining to the nature of reality. Topics may include nature of person, minds, substance, universals, space, time, causation, and modality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	333	Symbolic Logic	Studies symbolic techniques to represent knowledge, deductive arguments, refutation by counter-example, and model-theoretic representation. Covers propositional and first-order predicate logic and provides a deeper understanding of theories about the world and of reasoning in life generally. Students gain a valuable tool for any field or discipline in which rigorous thinking is necessary such as science, medicine, business and the legal profession.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 243 or MAT 300 or PHI 103 with C or better; minimum 25 hours OR Visiting University Student
PHI	334	Philosophy of Mind	Nature of consciousness. Common sense view of mind, behaviorism, materialism, dualism, functionalism, self-knowledge, and knowledge of other minds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	335	History of Ethics	Major works of moral philosophy, both ancient and modern, such as those by Plato, Aristotle, Hobbes, Hume, Kant, and Mill.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	336	Social/Political Philosophy	Alternative principles and methods relevant to problems of human association and conflict; discusses justice and power, freedom and equality, and autonomy and order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	337	Ethical Theory	Theories in normative ethics about the nature of what is right and wrong, good and bad, virtuous and vicious. May include issues in metaethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	338	Metaethics	Concerns questions about the nature of value, morality, and normativity in general, such as "Is morality objective, subjective, or relative?"	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 25 hours. Credit is allowed for only PHI 338 or PHI 420 (Metaethics)
PHI	339	Philosophy of Art	Central problems in philosophy of art, e.g., the nature of a work of art, modern and traditional theories of art, aesthetic perception and experience, and objectivity and relativity in art criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	347	Phil Theories of Constitut Law	In-depth study of the philosophical theories surrounding constitutional rights and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	360	Business & Professional Ethics	Examines moral theories applied to cases of corporate responsibility, property rights, environment, fairness, profit, employee rights, and responsibilities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	370	Sports Ethics	Studies moral issues in sports, including but not limited to the nature and application of sportsmanship, the prohibition of performance enhancing drugs, ethical issues in the economics of sports, the role of violence, and fandom.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours; Credit is allowed for only PHI 370 or PHI 394 (Sports Ethics) OR Visiting University Student
PHI	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
PHI	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 357, PHI 391 or REL 391
PHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4	HU	

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PHI	401	Rationalism	Examines classical philosophical rationalism, as in Descartes, Spinoza, Malebranche, or Leibniz. Contemporary rationalist thought may also be examined.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours
PHI	402	Empiricism	Examines representatives of either classical or contemporary philosophical empiricism, e.g., Bacon, Hobbes, Locke, Butler, Berkeley, Reid, Hume, Mill, Carnap, and Ayer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy student; minimum 56 hours
PHI	403	Contemp Analytic Philosophy	Aims and methods of such 20th-century philosophers as Frege, Moore, Russell, Wittgenstein, Carnap, Ayer, Wisdom, Ryle, Austin, Strawson, Quine, and Sellars, with application to metaphysics and epistemology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy BA major or Philosophy (Morality, Politics and Law) BA major; minimum 56 hours
PHI	405	Moral Psychology	Advanced study of key, contemporary authors and issues in moral psychology as a subfield of philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
PHI	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
PHI	408	Feminist Ethics	Philosophical exploration of the theoretical and practical aspects of ethical issues affecting women from diverse feminist viewpoints.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409
PHI	411	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the 19th and 20th centuries. Kant's critique of the theoretical, practical, aesthetic and religious foundations articulates this crisis in Western philosophy, society and culture. Explores Continental thinkers and schools of thought in light of Kant's understanding of this crisis. Figures might be Nietzsche, Marx, Freud, Kierkegaard, Husserl, Heidegger, Benjamin, Adorno, Marcuse, Sartre, de Beauvoir, Irigaray, Kristeva, Spivak, Habermas, Lévinas, Marion, Derrida and others. Schools of thought considered may include existentialism, phenomenology, hermeneutics, critical theory, poststructuralism, deconstruction, feminist theory, critical race theory, postcolonial theory, and comparative philosophy. Continental philosophy dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours. Credit is allowed for only PHI 411 or PHI 494 (Continental Philosophy & Religion) or PHI 494 (Studies in Continental Philosophy)
PHI	412	Philosophy & Lit Criticism	Explores dynamic tensions between philosophical and literary critical approaches to texts. Aims to identify distinct ways that literature and critical practices "philosophize" about truth, moral dilemmas or existential struggles. Probes the challenges that each form of inquiry, philosophical and critical, poses for the other. Seeks to enhance understanding of the philosophical underpinnings of key literary works. May address poetry, novels and other media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; minimum 30 hours. Credit is allowed for only PHI 412 or PHI 494 (Philosophy and Literature) or ENG 401 (Philosophy and Literary Criticism) OR Visiting University Student
PHI	413	Advanced Symbolic Logic	Properties of formal systems axiomatizing propositional and 1st-order predicate logic. May also include modal logic, number theory, and limits of logicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy student; minimum 56 hours; Credit is allowed for only PHI 413 or PHI 556
PHI	415	Philosophy & Film	Introduces philosophical themes via the medium of film. Students read classical and contemporary literature in philosophy, view films that portray philosophical concepts, and demonstrate their understanding through writing assignments and class presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only PHI 415 or PHI 294 (Philosophy and Film)

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PHI	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
PHI	420	Topics in Philosophy	Course descriptions on file in department.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours OR Visiting University Student
PHI	421	Philosophical Topics	Focuses on important issues within the discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	422	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
PHI	439	Philosophy: Love & Sex	Advanced introduction to historical and contemporary philosophical writings and sociological case studies on the philosophy of sex and love.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only PHI 439 or PHI 494 (Philosophy of Love and Sex)
PHI	448	Justice and Reparations	Advanced study of the moral basis of reparations and reparative justice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 420 (Jus/Reparations) or PHI 448 or PHI 527
PHI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
PHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student
PHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
PHI	520	Topics in Applied Philosophy	Selected topics in applied philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	521	Bioethics	Addresses current controversies and major topics in bioethics and biosciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Found-Bioethics) or PHI 521
PHI	522	Ethics of Sustainability	Explores the normative framework of sustainability.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Topics in the Ethics of Sustainability) or PHI 522
PHI	524	Disaster Ethics	Investigates moral and political questions connected to disasters and emergencies such as obligations of aid workers, responsibilities for preparedness and rebuilding, and related social justice questions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Ethics and Disaster) or PHI 524
PHI	525	Rational Choice	Recent philosophical work on rational decision making.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Rational Choice) or PHI 525
PHI	526	Evol and Strategic Interaction	Recent work on the philosophical significance of evolutionary models of social interactions and social structures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	529	Feminist Philosophy	Examines contemporary feminist work in some of the subfields of philosophy, such as ethics, political philosophy, epistemology.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Feminist Philosophy) or PHI 529

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PHI	530	Moral Psychology	Central issues and texts in moral psychology including the impact of psychological research on philosophical theorizing.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	532	Experimental Philosophy	Examines experimental work taken to directly bear on important philosophical theories.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Experimental Philosophy) or PHI 532
PHI	540	Topics in Value Theory	Selected topics in value theory.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	541	Normative Ethics	Explores one or more leading normative ethical theories that inform the contemporary discussions in ethics, applied ethics, issues of justice and human rights, and public policy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Normative Ethics) or PHI 541
PHI	545	Studies in Philosophy of Law	Selected topics in the philosophy of law.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	546	Political Philosophy Studies	Selected topics or figures in political philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	555	Topics in Formal Methods	Selected topics in formal methods.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	556	Advanced Symbolic Logic	Advanced topics in logic relevant to philosophical theorizing such as modal, deontic and temporal logic.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	560	Topics in Epistemology	Selected topics in epistemology.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	562	Perception	Recent work on the nature and content of perception.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Perception) or PHI 562
PHI	565	Probabilism	Recent work on rational belief, evidence and belief change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	566	Studies in Phil of Science	Selected topics in philosophy of science.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	570	Topics in Metaphysics	Selected topics in metaphysics	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	571	Studies in Phil of Mind	Selected recent philosophical work in philosophy of mind such as the nature of sensation and perception, theories of consciousness, and the unity of the self	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	572	Studies in Phil of Language	Selected recent philosophical work in philosophy of mind language as theories of meanings, direct reference and vagueness.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MA or PhD Philosophy major. Credit is allowed for only PHI 420 (Philosophy of Language) or PHI 572
PHI	576	Realism	Recent work on realism and anti-realism, starting with Michael Dummett, and including philosophers such as Hilary Putnam, Donald Davidson, John McDowell and Kit Fine. Global realism and anti-realism and more specific realisms/antirealisms about the past, the mind, theoretical entities, mathematics and ethics.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	581	Studies in Ancient Greek Phil	Selected topics in ancient philosophy from 585 BC to 529 AD.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student; Credit is allowed for only PHI 420 (Studies in Ancient Greek Philosophy) or PHI 581
PHI	582	Studies in Modern Philosophy	Selected topics and significant figures in the modern period.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	587	Topics in the History of Phil	Selected topics in the history of philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisites: Masters or Doctoral Philosophy student.
PHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		

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PHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHS	110	Fundamentals Physical Science	One-semester survey of the principles of physics and chemistry. Presumes understanding of elementary algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHS	115	Science of Musical Instruments	Science class set in a musical context where students learn about music, musical instruments, and also about the underlying scientific and mathematical principles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only PHS 115 or PHS 194 (Science of Musical Instruments)
PHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only MSE 208 or PHS 208
PHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	505	Energy and the Environment	Current problems in energy resources, production, consumption, and conservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	530	Methods of Physics Teaching I	Inquiry approach to high school physics teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	531	Methods of Physics Teaching II	Extension of modeling techniques introduced in PHY 580.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	534	Teaching Phys Sci I, II, III	Design of curriculum and conduct of instruction for physical science courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
PHS	542	Integrated Mathematics/Physics	Mathematical models and modeling as an integrating theme for secondary mathematics and physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	550	Physics and Astronomy	Astronomy curricula and projects for secondary school, with emphasis on the role of physics in astronomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PHS	556	Astrophysics	Structure and evolution of stars, galaxies, and the universe. For secondary school teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560

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PHS	570	Spacetime Physics	Special and general theories of relativity with implications for space and time travel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	581	Structure of Matter/Properties	Models of matter and its properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581
PHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	101	Introduction to Physics	Emphasizes applications of physics to life in the modern world. Presumes understanding of elementary algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHY	105	Basic Physics	One-semester survey of the principles of physics. Primarily for students who intend to take PHY 121, 131 but have not taken high school physics.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	111	General Physics	Noncalculus treatment of the principles of physics for nonphysics majors. Students whose curricula require a lab course must also register for PHY 113. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 170 or higher with C or better, or minimum score of 56% on the Mathematics Placement Test, or ALEKS score of 61 or higher, or Corequisite(s): MAT 210 or higher OR Visiting University Student
PHY	112	General Physics	Continuation of PHY 111. Students whose curricula require a lab course must also register for PHY 114. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): PHY 111 with C or better OR Visiting University Student
PHY	113	General Physics Laboratory	Elementary experiments in physics. Requires outside preparation for experiments and report writing. May be taken concurrently with, or subsequent to PHY 111. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 111 with C or better if completed OR Visiting University Student
PHY	114	General Physics Laboratory	See PHY 113. May be taken concurrently with, or subsequent to, PHY 112. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 112 with C or better if completed OR Visiting University Student
PHY	118	Explorations in Sci Teaching	Examines the field of physical science education via in-class meetings and classroom settings. Discusses the theory, pedagogy and practice of teaching physical science. Reviews various curricula available for the teaching of physical science with a focus on state and national standards. Students work with course instructor(s) to design three lessons that work toward some of the objectives of each cooperating teachers' class. Students are aided in developing materials, guided in planning to teach the lesson, and given time to prepare and practice the lesson.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Pre-requisite: Mathematics or Physics or other science major
PHY	121	Univ Physics I: Mechanics	Kinematics; Newton's laws; work, energy, momentum, conservation laws; dynamics of particles, solids, and fluids. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	122	University Physics Lab I	Lab accompanying PHY 121. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 121 with C or better if completed OR Visiting University Student
PHY	131	Univ Physics II: Elctrc/Magnet	Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
PHY	132	University Physics Lab II	Lab accompanying PHY 131. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 131 with C or better if completed OR Visiting University Student
PHY	150	Physics I	Introductory physics for majors. Kinematics, Newton's Laws, basic forces, energy, momentum.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	151	Physics II	Continuation of PHY 150. Electromagnetic fields; Ampere's and Faraday's Laws; Maxwell's equations; basic circuit elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 150 or PHY 121 and PHY 122 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
PHY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): freshman standing; maximum 25 hours OR Visiting University Student
PHY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	201	Math Methods Physics I	Differential equations, linear equations, vectors, matrices, Fourier series, and numerical methods.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	CS	Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	202	Programming for Physicists	Introduces programming in the Python programming language for physics majors.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 with a C or better or PHY 131 and PHY 132 with C or better OR Visiting University Student
PHY	241	University Physics III	Thermodynamics, kinetic theory, physical and wave optics, relativity, photons, matter waves, atomic physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 OR Visiting University Student
PHY	252	Physics III	Thermodynamics, kinetic theory, physical optics and diffraction, modern physics, special relativity, quantum mechanics and Bohr atom.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 or PHY 131 and 132 with C or better OR Visiting University Student
PHY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	302	Mathematical Mthds Physics II	Vector calculus, complex variables, partial differential equations, special functions, numerical methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better OR Visiting University Student
PHY	310	Classical Parts/Field/Matter I	Particle kinematics, mechanics, conservation laws of single- and multi-particle systems, potentials, oscillations, Lagrangian dynamics, central force problems, dynamics in non-inertial reference frames, rigid body motion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s) with C or better: (PHY 201; PHY 252) or (PHY 201; PHY 202; PHY 241); Corequisite(s): PHY 302 OR Visiting University Student
PHY	311	Classical Part/Field/Matter II	Electrostatic and gravitational fields, Poisson and Laplace equations, dielectric materials, magnetic fields and materials, magnetic induction, Faraday's Law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 310 with C or better OR Visiting University Student
PHY	312	Mechanics and Electromagnetism	Covers two major topics in physics, both dealing with forms of energy and momentum and how they are transmitted in space. Covers mechanics and dynamics, describing how bodies with mass move under various types of forces. Also covers electromagnetism, which describes how electric charges and magnets, and their motions, generate fields of force. Also describes how time-varying electric and magnetic fields are associated with electromagnetic waves, which include light.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 252 with C or better
PHY	314	Quantum Physics I	Photons, models of the atom, wave properties of matter, introduction to wave mechanics, 1-D systems in quantum mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better; PHY 252 with C or better, or both PHY 202 and 241 with C or better OR Visiting University Student
PHY	315	Quantum Physics II	General principles of quantum mechanics, 3-D problems, approximation methods, spin, relativity, introduction to many-particle systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 314 with C or better OR Visiting University Student
PHY	321	Vector Mechanics and Vibration	Vector-based formulation of Newtonian mechanics of particles and rigid bodies, including oscillatory systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	331	Prin Modern Electromagnetism	Studies the unified description of electromagnetic phenomena provided by Maxwell's equations in differential and integral form.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		

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PHY	333	Electronic Circuits/Measuremnt	Basic principles of electronic circuit analysis and measurement techniques using modern instrumentation and computer-aided analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	334	Advanced Laboratory I	Selected experiments from contemporary physics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report form writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	L	Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 (or PHY 131 and 132) with C or better; Pre- or corequisite(s): PHY 314, 361, CHM 345, or EEE 434 with C or better if completed OR Visiting University Student
PHY	361	Introductory Modern Physics	Special relativity and introductory quantum theory with applications drawn from atomic, nuclear, and solid-state physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 or 151 with C or better; MAT 272 or 267 with C or better OR Visiting University Student
PHY	371	Driving Forces in Biology	What are the stable states of biomolecules? How do molecules interact? What forces drive molecules to bond and associate, to adsorb, to permeate through membranes, to undergo chemical reactions, to undergo conformational changes? Why are some changes gradual, as in the weakening of a ligand interaction with temperature, and others sudden (cooperative) such as protein folding or the insolubility of oil in water? Addresses these questions by statistical thermodynamics, a collection of principles and models that when combined with thermodynamics, aim to explain molecular forces and flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346
PHY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	412	Classical Part/Field/Matter III	Electromagnetic fields of moving charges, Maxwell's equations, harmonic phenomena, oscillations, waves, electromagnetic radiation, covariant electromagnetism, introduction to general relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better OR Visiting University Student
PHY	416	Quantum Physics III	Introduces the quantum theory of atoms, molecules, solids and nuclei, Dirac's equation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 315 with C or better OR Visiting University Student
PHY	441	Statistical/Thermal Physics	Statistical and experimental basis of heat, temperature, and entropy. Mechanical and statistical basis of the laws of thermodynamics. Applies macroscopic thermodynamics. Phase equilibrium.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better OR Visiting University Student
PHY	444	Fundamentals of Nanoscience	For senior science majors and beginning graduate students teaching the cross-disciplinary subject of nanoscience. There is a strong emphasis on basics, so the course starts with a fairly rigorous introduction to quantum mechanics, statistical mechanics and chemical kinetics, though enough material is provided to allow nonphysics majors to come up to speed in these areas. This is followed by a survey of experimental techniques in nanoscience: microscopy, optical spectroscopy and scanning probe methods, and nanofabrication methods including "top down" and self assembly. Finally we survey applications: electrons in nanostructures, molecular electronics, nanomaterials and bio-nanoscience.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): junior or senior standing; Credit is allowed for only PHY 444 or PHY 494 (Intro to Nanoscience)
PHY	452	Physical Optics	Principles of reflection, refraction, diffraction. Additional topics from contemporary optics may include Fourier transform spectroscopy, linear systems theory, holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 311 with C or better OR Visiting University Student
PHY	456	Laser Optics	Theoretical and experimental aspects of applied optics including basic concepts of lasers, properties of optical beams, resonators and interferometry. Course consists of two parts: preparatory labs and applied projects. Preparatory labs provide theoretical and technical background for understanding of general features of electromagnetic wave propagation and technical features of optical lasers including high-power laser systems. Applied projects give students the opportunity to use laser optical systems to solve real-world problems.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): PHY 361; Credit is allowed for only ABS 494 (Advanced Laser Laboratory), ABS 494 (Laser Optics) or PHY 456
PHY	460	Numerical Methods in Physics	Advanced numerical methods with an emphasis on electromagnetism, quantum mechanics and materials science with computer labs on a multiprocessor cluster.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): PHY 315
PHY	462	Particle and Nuclear Physics	Nuclear properties, models, decays and reactions; fundamental forces, field theories, symmetry principles; hadrons, quarks, and leptons; the Standard Model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better

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PHY	465	Advanced Laboratory II	Continuation of PHY 334. Students may substitute a short laboratory research project for one of the elective experiments of the course, in consultation with a faculty sponsor and the course instructor.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 334 with C or better OR Visiting University Student
PHY	472	Advanced Biophysics Lab	Offers selected experiments from contemporary biophysics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report writing. Emphasizes the importance of good notebook keeping.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346 OR Visiting University Student
PHY	473	From Molecules to Cells	Offers selected subjects from biological physics covering the length scales from biomolecules to cells. Builds on knowledge acquired from thermodynamics and statistical mechanics to formulate basic principles behind the working of life systems. Free energy, entropic forces, chemical potentials and electrostatic interactions rule the "nanometer soup" of a living cell. Proton gradients across cell membranes are behind all the energy consumed by life. Random walks, dissipative dynamics, and hydrodynamic fluxes rule time-dependent phenomena. Covers systems including biomolecules, membranes, cells and nerves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 371 with C or better; Pre- corequisite(s): PHY 472 with C or better if completed
PHY	480	Methods of Teaching Physics	Evaluates various approaches to the teaching of high school physics. Preparation of demonstrations and experiments. Organization of a lab. Designed for secondary school physics teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	481	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better; Credit is allowed for only MSE 526 or NAN 511 or PHY 481 or PHY 511 OR Visiting University Student
PHY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		Prerequisite(s): minimum 45 hours
PHY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6		Prerequisite(s): Barrett Honors student
PHY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6	L	Prerequisite(s): Barrett Honors student
PHY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	495	Project Research	Supervised project in physics or astrophysics.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-7		Prerequisite(s): minimum 45 hours
PHY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours
PHY	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Degree- or nondegree-seeking graduate; Credit is allowed for only MSE 526, NAN 511, PHY 511
PHY	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 511; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
PHY	521	Classical&Continuum Mechanics	Variational principles, Lagrange's and Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, introduction to chaos and nonlinear dynamics, fundamentals of elasticity theory and fluid mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	523	General Relativity	Special and general theories of relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	531	Electrodynamics	Special theory of relativity, covariant formulation of electromagnetic interactions, Maxwell's equations, electrostatics and magnetostatics, dielectric media, inhomogeneous wave equations, Lienard-Wiechert potentials, interactions of charged particles and electromagnetic waves, scattering and diffraction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	541	Statistical Physics	Postulates of statistical mechanics, equilibrium ensembles, Bose and Fermi statistics, density matrix, modern theory of phase transitions, fluctuations, and linear response theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		

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PHY	542	Topics in Biophysics	Overview of modern biology, length scales: emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542
PHY	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics; measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
PHY	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
PHY	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, SEM 552, or PHY 552
PHY	553	Electron Microscopy Lab I	Lab support for PHY 552.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553
PHY	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent beam diffraction, and electron holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE or PHY 554
PHY	555	Electron Microscopy Lab II	Lab support for PHY 554.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
PHY	576	Quantum Theory	Operator methods in quantum mechanics, time-independent perturbation theory, variational methods, angular momentum and group representation theory, identical particles; quantum dynamics, including time-ordered operators, time-dependent perturbation theory, and Fermi's golden rule.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	577	Intro to Quant Field Theory	Explains necessity of generalizing quantum mechanics to a field theory viewpoint. Studies properties of scalar, spinor, and gauge fields; incorporates interactions; and learns to compute amplitudes, cross sections, and decay rates using formalism of Feynman diagrams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PHY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	581	Quantum Theory of Solids I	Band structure models: pseudopotentials, density functional theory; optical and magnetic response; elementary excitations; transport theory, electron-photon interactions and superconductivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	582	Quantum Theory of Solids II	Continuation of PHY 581: broken symmetry, phase transitions; disorder, topological defects; nano-structures topics; soft condensed matter and current research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		

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PHY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PHY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Physics	1		
PHY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PIT	501	Prin PublicInterest Technology	Fundamentals of public interest technology. Identifies and analyzes stakeholders, value chains, societal dimensions, and legal and policy issues in the context of emerging technologies such as smart cities, the internet of things, robotics and autonomous systems, and artificial intelligence. Covers the importance of socio-technical change, responsible innovation, public values, accountability, oversight, corporate responsibility and other key concepts when considering technologies working for the public interest. Students work on critical issues such as data ownership, consent, governance, privacy, security, accessibility and the digital divide.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	502	Co-Designing the Future	Explores how new technologies for using, processing and managing information are changing how we interact and work. This practical learning and mentoring program helps students design and implement solutions to public interest problems using civic technology. Explores current trends, uses a wide variety of information and communication tools, and develops content to help develop a project from idea to implementation. Takes advantage of the latest innovations in open and participatory problem solving, including the application of open data, crowdsourcing, expert networks and systems. Unlike traditional accelerators, focuses only on public interest projects that work with real-world institutions and partners such as nongovernment organizations.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	503	Technology Impact Assessments	Trains students to conduct a technology assessment—a systematic effort to anticipate and understand the impact of a technology. Serves as an "early warning" for policymakers, forecasting technological change and its consequences, to facilitate the prudent procurement of technologies, to plan R&D more effectively, to create the basis for evidence-based regulatory approaches, and to achieve other purpose that serve the public interest. Covers the uses of technology assessment and practices various methods. Each student carries out an abbreviated technology assessment on a topic of his or her choice and communicates it to their colleagues.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	504	Public Engagement Strategies	Covers the concepts, tools, institutions and strategies to appropriately and effectively engage with a variety of stakeholders, including scientific and technical experts, policymakers and advocates for responsible research and innovation, and general publics. Students learn how to elevate the societal discourse about emerging and contemporary issues in science and technology through inclusive, informed, equitable, sustainable and democratic engagement with the public. Explores real-world case studies and provides students the opportunity to design and develop a public engagement strategy for stakeholders.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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PIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PLB	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s): BIO 181 (or BIO 188) with C or better and BIO 182 (or BIO 187 or PLB 200) with C or better OR BIO 281 with C or better and BIO 282 with C or better; Credit is allowed for only BIO 303 or ENV 300 or PLB 300
PLB	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
PLB	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
PLB	310	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
PLB	388	Research for Natural Sciences	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; Credit is allowed for only LSC 388 or LSC 498 (Research Fundamentals for the Natural Sciences) or ENV 388 or FOR 388 or PLB 388 or PTX 388 OR Visiting University Student
PLB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
PLB	502	Perspectives in Plant Biology	Introduces major areas of research within the department with the goal of broadening knowledge to enable multidisciplinary research and communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
PLB	558	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		

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PLB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
PLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLC	101	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	102	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	201	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	202	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: PLC 201 with D
PLC	311	Advanced Polish I	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 202 with C or better. Credit is allowed for only PLC 311 or PLC 394 (Polish Comp and Conversation) OR Visiting University Student
PLC	312	Advanced Polish II	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 311 with C or better
PLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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POP	100	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
POP	333	Systems Thinking in Pop Health	Covers systems science and its application to population health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
POP	444	Pop Health Field Experience	Provides opportunity to gain experience working in community and population health settings. Course meetings provide guidance during the field experience and an opportunity for students to share their projects.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 450; HCD 101 or POP 100 OR Visiting University Student
POR	101	Elementary Portuguese I	Introduces the Portuguese language. Encourages meaningful and contextualized use of the language through reading, writing, listening and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students who have credit for POR 102 or 201 or 202 or 313 or 314 or 320 or 321 may not enroll in POR 101 OR Visiting University Student
POR	102	Elementary Portuguese II	Continues to develop students' abilities at the elementary level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 101; Students who have credit for POR 201 or POR 202 or POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 102 OR Visiting University Student
POR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	201	Intermediate Portuguese I	Develops students' skills at the intermediate level of Portuguese language and culture through reading, writing, listening and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 102 with C or better; Students who have credit for POR 202 or 313 or 314 or 320 or 321 may not enroll in POR 201 OR Visiting University Student
POR	202	Intermediate Portuguese II	Continues to develop students' skills at the intermediate level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 201 with C or better; Students who have credit for POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 202 OR Visiting University Student
POR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	313	Portuguese Conv & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on speaking and listening, and a focus on Brazilian culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student
POR	314	Portuguese Comp & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on reading and writing. Each class focuses on topics of personal and general interest, with a focus on Brazil.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student
POR	320	Portuguese Spanish Spkrs I	Intensive introduction to the Portuguese language for Spanish speakers. Designed for students with an active competence in Spanish who wish to learn the essential elements of the Portuguese grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension," which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities with Spanish, students master the four basic skills of listening, speaking, reading and writing of in Portuguese at a faster pace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 202, 204, 210, 313, 314, 315, 316, or 412 with C or better; Credit is allowed for only POR 101 or POR 201 or POR 313 or POR 314 or POR 320 or POR 321 or POR 394 (Portuguese Spanish Speakers I) OR Visiting University Student
POR	321	Portuguese Spanish Spkrs II	Intensive intermediate-level Portuguese language class designed for Spanish-speakers. Further develops the students' communication skills in Portuguese. Makes use of the many common elements between Spanish and Portuguese (particularly vocabulary and grammar) to achieve an accelerated learning of linguistic, sociolinguistic and pragmatic competences required for fluency. The class is mostly conducted in Portuguese; do not be afraid of making mistakes while speaking Portuguese because this is a natural part of the learning process.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): POR 101 or 320 with C or better; Credit is allowed for only POR 201 or POR 313 or POR 314 or POR 321 or POR 394 (Portuguese Spanish Speakers II) OR Visiting University Student

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POR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	472	Luso-Brazilian Civilization	Lectures, readings, and discussion of important aspects of Luso-Brazilian civilization. Topics from music, art, folklore, literature, history, and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): POR 313 with C or better; Credit is allowed for only POR 472 or POR 598 (Luso-Brazilian Civilization)
POR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
POR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
POR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
POR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POS	110	American Government & Politics	Major institutions of modern government and processes of individual and group political activity, with emphasis on the American experience. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	Credit is allowed for only HST 112 or POS 112 or HST 194 (Foundations of Democracy)
POS	150	Comparative Government	Political institutions and processes in selected foreign countries, including origins, strengths, and weaknesses of contemporary political systems and political development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	160	Global Politics	Nature of contemporary world politics through the study of both general theoretical topics and specific geographical areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 360 or POS 362 OR Visiting University Student
POS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		Pre-requisites: Freshman status; Maximum 25 hours
POS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): maximum 25 hours OR Visiting University Student
POS	210	Political Ideologies	Leading political ideas and belief systems, e.g., Marxism, liberalism, conservatism, theories of democracy, and alternative futures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	211	Arizona Constitution/Governmnt	Constitution and government of the State of Arizona. Meets the Arizona constitution requirement for teacher certification. May not be counted for the major or a teaching major or minor in Political Science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	2		Credit is allowed for only POS 211 or POS 216 or POS 417
POS	216	State and Local Government	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	230	Curr Issues/Natl Politics	Major issues facing national governments in the domestic field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L or SB	
POS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
POS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
POS	247	Intro to Latin Amer Politics	General introduction to the politics and socioeconomic structures of Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	260	Curr Issues in Intl Politics	Analyzes major current problems in world politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	

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POS	270	American Legal System	Concepts, institutions, classifications, and functions of law. Role of the courts and impact of judicial decision making on social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	300	Contemp Global Controversies	Explores key controversies in global politics including security, economic stability, poverty, gender, race, and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	301	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
POS	305	Politics and Film	Examines portrayal of political events, ethnic groups, and sociopolitical situations in film, a major medium addressing questions of human values. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	310	American National Government	Powers, functions, and agents of American political institutions. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	313	The Congress	Lawmaking process in the U.S. Congress.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POL 313 or POS 313 OR Visiting University Student
POS	314	The American Presidency	Office, role, and power of the American presidency in the American political system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	315	The Supreme Court	Role of the Supreme Court in American society and politics; examines decision-making process and impact of decisions; restraint versus activism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	316	American Political Institutions	Explores current issues involving American political institutions including electoral systems, legislative bodies, executive agencies, executive leadership, judicial bodies, political parties, interest groups, social movements, the media, and their interactions.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 316 or POS 394 (American Political Institutions) OR Visiting University Student
POS	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student
POS	325	Public Policy Development	Examines one or more aspects of public policy development including agenda setting and policy formulation, implementation, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	331	Public Opinion	Formation, expression, and influence of individual and organized opinion on political institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	332	American Political Parties	Development of the American party system. Party organization and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	333	Interest Groups	Examines how minority, corporate, labor, farm, consumer, environmental, health, education and public interest groups, and single-issue movements influence government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)
POS	336	Voters in America	Voting behavior and the attitudes, perceptions, and activities of the citizenry in the political process.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	337	Political Psychology	Political psychology is an interdisciplinary field that applies theories from the study of human psychology to the study of politics. Focuses on how psychological processes influence political thoughts and actions. Thus, the initial portion of the course discusses the structure of political attitudes and opinions and some of the primary ways that politicians and the media can influence public opinion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 337 or POS 394 (Political Psychology) OR Visiting University Student

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POS	338	Fake News:Identify & Refute	Critically analyzes the implications of fake news for our democracy and democratic way of life. Examines why we should care about whether or not citizens consume fake news and how it affects our individual lives and public policy. Looks at a variety of topics, rooted in social science research drawing from psychology and political science. Also examines students and how they process fake news, the origins of fake news, elected officials' reliance on false information, fake news and statistics, fact-checking, and fake news and political bias. Additionally, students analyze elected officials' communications, including U.S. Presidents' State of the Union addresses.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 338 or POS 394 (Fake News) or POS 394 (Fake News: How to Identify and Refute it)
POS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101,105 or 107 with C or better; Credit is allowed for only ASB 339, POS 339 or SBS 339 or SOC 339
POS	340	History Political Philosophy I	Western political philosophers and their theories to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	341	History of Political Phil II	Western political philosophers and their theories from the 17th to the 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	342	Political Theory	Surveys ancient, modern, and contemporary political theorists and ideas in European and American contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU or SB	
POS	346	Problems of Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	348	Do You Want to Build a Nation	Requires students to critically assess their assumptions about nation-states through a series of debates and simulation games. Through in-class, interactive games, students answer: What are the sources of legitimacy and defining elements of statehood? How do those defining elements, such as democratic structures, support or challenge certain functions of the nation-state? How does a nation's purported moral basis affect its foreign policy decisions and negotiations with other nations?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): minimum junior standing or minimum 45 hours; Credit is allowed for only POS 348 or POS 394 (Do You Want To Build a Nation?) OR Visiting University Student
POS	350	Comparative Politics	Theoretical approaches and political institutions, such as parties, pressure groups, legislatures, and executives, from a cross-national perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	351	Democratization	Examines the consolidation of democracies in postauthoritarian and postcommunist settings (e.g., Latin America, Eastern Europe, Asia).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	352	European Democracies	Addresses questions such as, How has the relationship between European citizens and the democratic process changed in the post-WWII period? How do domestic political institutions influence this process? Explores different approaches to some of the most important questions facing the study of comparative and European politics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 25 hours OR Visiting University Student
POS	353	Compar Politics of Middle East	Examines the historical, social, and economic context of contemporary Middle East politics; explores political dynamics of selected Middle Eastern regimes; and offers a comparative examination of key political trends and themes.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing or minimum 45 hours; Credit is allowed for only POS 353 or POS 360 (Politics of the Middle East) OR Visiting University Student
POS	354	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
POS	356	European Union	History and workings of EU member states, including single market, Euro, legal system, ethnonationalism, immigration, expansion, trade wars, and defense.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	357	South Asia Politics	Political culture and systems of South Asia examined through study of political writings, novels, and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	358	Southeast Asia	Political background, governmental institutions, political dynamics, and developmental problems of Southeast Asian nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	359	African Politics and Society	Comparative analysis of socioeconomic forces, political processes, government institutions, and political novels in Sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	

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POS	360	World Politics	Theory and practice of statecraft as applied to selected issues, regions, or eras. Emphasis may vary with instructor, but cannot be repeated for credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 160 or POS 360 OR Visiting University Student
POS	361	American Foreign Policy	United States in world affairs; foreign policy since World War I. Techniques in formulating American foreign policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	362	World Politics Theory	Theoretical examination of one or more aspects of international politics, e.g., foreign policy, negotiations, alliances, crises, wars, and international systems.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 362
POS	364	Natl Security/Intell/Terrorism	Theoretical and empirical assessment of U.S. national security policy in the post-cold war era.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	365	Terrorism & Insurgency	Insurgency, civil war, revolution and terrorism are traditionally thought of as domestic events or "intrastate" conflicts between one violent domestic political group and the state. However, recent conflicts in Afghanistan, Libya and Syria, as well as the 9/11 attacks on the U.S. demonstrate that insurgencies often spill across borders and draw in actors far removed from the original conflict site. These conflicts also demonstrate that insurgencies and terror campaigns necessitate global policy responses. The international character of insurgency, therefore, requires students of political violence to consider a wide array of both international and domestic factors in order to better understand the origins, dynamics and resolution of modern insurgencies and terror campaigns.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 365 or POS 394 (Terrorism and Insurgency)
POS	367	World Pol & Global Inequality	Examines the topic of global inequality and the numerous challenges that arise from it, including perspectives and theories pertaining to third world development, the historical background to the political and economic relations between the wealthy countries of the world and the poorer countries, and policies and strategies designed to promote development and alleviate poverty. Studies some contemporary issues that are related to global inequality including ethics and third-world development, sweatshop labor, corporate responsibility, and the tension between globalization and the movement of people across sovereign borders.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 25 hours OR Visiting University Student
POS	368	Ethics and Human Rights	Explores issues of ethics, morality, and human rights in the global community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	370	Law and Society	Analyzes debates among social scientists and legal theorists concerning the relationship between law and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
POS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
POS	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only POS 378, REL 378 or REL 394 (Religion, War and Peace)
POS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
POS	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
POS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		

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POS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
POS	410	Governing American Cities	Reviews modern urban problems, their sources, and potential solutions, including structural and policy alternatives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
POS	417	Arizona Politics	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	426	Elements of Public Policy	Each section may cover one of the following topics: consumer protection, natural resources, criminal justice, environmental protection, science and technology, or theories of public policy. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours
POS	427	Social Welfare & Health Policy	Examines the political conflicts and debates that underlie social welfare and health policy, and the provisions of major welfare-state programs in the U.S., with comparisons to other developed democracies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for POS 427 or POS 394 (Social Welfare & Health Policy)
POS	431	Campaigns and Elections	Examines campaigns from a multitude of perspectives including the politician, reporter, campaign strategist, and voter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	434	Media and Politics	Studies mass media and politics in the United States, e.g., media and elections, media and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	435	Women and Politics	Focuses on the uniqueness of women in modern political systems and political thought. Emphasis may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	
POS	436	Gender/Sexuality/Nation-States	Issues and problems related to the interface of gender, sexualities, nationalisms, and states in various world contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
POS	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437
POS	438	Latino Politics	Examines contemporary political issues in the diverse Latino community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours
POS	439	Minority Grp Politics America	Role of minority groups in American politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	442	American Political Thought	Political theories and movements from the colonial period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	443	Contemporary Political Theory	Major problems and theories in contemporary political thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	446	Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU	
POS	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
POS	452	China	Background of the Communist revolution, political processes, and developmental problems in China from a comparative perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	453	Latin America	Political institutions, process, and developmental problems of South American states examined through comparative analysis, novels and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours
POS	454	Mexico	Politics, economy, institutions, and cultures in Mexico in historical and contemporary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	456	Latin American Cities	Urban studies of Latin American world cities, e.g., Mexico City, Santiago, emphasizing integration with U.S. cities, including Los Angeles, Phoenix.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	464	Border Cities:Action Rsrch/Glo	Examines the effects of globalization on U.S.-Mexico border cities and towns with particular emphasis on Mexican border cities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	

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POS	465	International Organization/Law	History, practical political significance, and future of international institutions, transnational regimes, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	467	International Security	Examines issues affecting the international security of states and peoples, e.g., military, economic, technological, environmental, and demographic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	468	Comparative Asian Foreign Pcls	Foreign policies of the Asian states, emphasizing their security relations and movements toward regionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	470	Law and the Political Order	Investigates concepts of justice, political rights, adjudication and legislation, legal ordering, constitutional law, law as an instrument of change.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 470 or CMN 598 (Law and the Political Order) or JHR 598 (Law and the Political Order) or MAS 598 (Law and the Political Order)
POS	471	Constitutional Law I	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; jurisdiction and organization of the federal courts; judicial review; separation of powers; federalism; the commerce clause; national taxing and spending power; state police power.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	472	Constitutional Law II	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; due process; equal protection of laws; individual rights; civil liberties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	475	Morality and Politics	Should morality play a role in politics? Machiavelli gives us one sort of answer, urging politicians to be dishonest, deceptive and even cruel. Kant disagrees, arguing instead that politicians should adhere to their personal morality over political calculations. Explores this question in two ways. First, looks more at the disagreement between great thinkers in the Western political tradition. Second, investigates contemporary political actors who bring moral concerns to the fore, including dirty politicians and extremist citizens (for example, radical animal rights activists, militant environmentalists or global poverty zealots). Seminar course that incorporates in-class discussion and writing, options-based grading and creative assignments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only POS 394 (Morality and Politics) or POS 475
POS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
POS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	485	Political Economy	Problems, policies, and possibilities of various political-economic systems and the interrelationship of capitalism, socialism, and democracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	486	Internatl Political Economy	Contending approaches to historical and contemporary issues of international political economy, including global welfare, equality, ecology, and peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student
POS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7	L	
POS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
POS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	503	Empirical Political Inquiry	Research methods and techniques of the discipline, emphasizing empirical foundations and analytic methods employed in subfields.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Political Science student
POS	530	American Politics	Examines major debates in the study of American political processes and institutions. Covers parties, media, elections, public opinion, interest groups, and the three branches of government.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		

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POS	540	Ancient Political Theory	Surveys the historical and philosophical developments in political thinking from the ancient Greeks up to the Renaissance. The world studied predominantly is one of profound political conflict and change. Moves from the Greek cities to the edge of modern political developments. The movement encompasses the political transformation from city-states to empires to the establishment of an overarching Christian world order that balances secular and sacred power, only to be challenged if not foundationally shaken by Machiavelli and realism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Graduate Political Science major
POS	541	Modern Political Theory	Surveys the development of modern political thought from Machiavelli-through Hobbes, Locke, Hume, Rousseau, Burke, Kant, Montesquieu, Constant, Bentham, Mill, and Hegel-to Marx. Focuses on the primary writings of these thinkers as well as reading secondary literature. In addition to focusing on the distinctive contribution and relevance of individual thinkers, further explores certain recurring themes among which are the following: Are freedom and equality foes or friends? What allegiance do we owe the state and why? Do we have rights against the state? What is a just state? Is private property essential to individual liberty? Do laws enhance or threaten liberty? Is self-interest an adequate basis for political allegiance? Why should we pursue the common good, if at all? Are self-interest and the common good reconcilable?	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD major; Credit is allowed for only POS 541 or 591 (Modern Political Thought)
POS	550	Comparative Politics	Surveys major approaches across topical areas such as revolutions, authoritarianism, policy processes, interest groups, and electoral politics. Focus varies with instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	552	Women and Politics	Serve as an introduction to the comparative study of women and politics. Not a course on feminist theory; instead focuses on questions such as: Does the descriptive representation of women guarantee their substantive representation? Which electoral rules favor the election of women? Do the negative effects of gender quotas outweigh their impressive ability to increase the number of women in office? Have the news media helped or harmed female candidacies? Once in power do women govern differently than men? Focuses on the obstacles that women face in obtaining positions of power.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 552 or 598 (Women and Politics)
POS	560	International Relations	Surveys major theoretical approaches and debates in international relations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	565	Games, Strategy and Politics	Provides an overview of game theory for graduate students in political science. Covers classical game theory, extensive form games, games of incomplete information and non-cooperative games. Applies game theory to international relations, political economy, comparative politics and American politics. Gives special attention to bargaining games, voting in elections and deterrence. Basic mathematical knowledge is helpful; reviews basic algebra and calculus in the class as needed.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 565 or POS 598 (Games, Strategy and Politics)
POS	570	Politics of Public Policy	Examines the political dimensions of public policymaking. Emphasizes major theoretical explanations of the policy process--particularly elements such as agenda setting, implementation, and policy change--rather than on the substance of particular policies. Focuses primarily on U.S. domestic policy, with some comparative reference to other developed democracies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 570 or 598 (Politics of Public Policy)
POS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	586	Intl Political Economy	International political economy (IPE) focuses on the relationship between the pursuit of wealth and power during the development and evolution of the global political economy. Assigned readings take an analytical approach to the subject, drawing on methods and theories developed in political science, economics, history and sociology. In addition to an overview of the methods and theories employed in the study of IPE, also examines a variety of current empirical research programs in the subfield. This seminar should enable students to read the academic literature, conduct independent research in the subfield, and understand contemporary problems in the global political economy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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POS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	596	Professionalization Workshop	Serves as a professionalization workshop and is intended for new political science doctoral students. However, graduate students at all levels in the program are welcome to take the course. Introduces the professional side of political science. Surveys topics such as attending conferences, applying for grants, publishing an article or a book, and going on the job market. Jointly builds a professional resource bank on our course page that serves as a resource for all students.	N	SEM	N	OP2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 596 or POS 598 (Teaching and Writing Worksh)
POS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
POS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	601	Advanced Experimental Research	Introduces experimental and quasi-experimental research designs in political research, including lab techniques and topics in the analysis of variance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	603	Polimetrics I	Introduces theory and practice of linear regression analysis. Provides skills to read, understand, and evaluate professional literature using regression analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	604	Polimetrics II	Applies quantitative techniques to research topics producing publishable papers through exposure to time-series, logit and probit, and simultaneous equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	652	Religion and Politics	Analyzes the complicated and often conflictual relationship among major religious faiths, religious activists, and the state in the 20th and 21st centuries. Cover topics: secularization theory and its problems; religion as a cultural or attitudinal variable in politics; the rationality of religion, organized religions and their activists; the bases for conflicts between religion and the state; religion's role in conflict; the terms of reconciliation and collaboration; the conditions under which religion is politicized and becomes the basis of a political movement or party; and the means by which organized religions and/or their adherents seek to maintain an influence in 20th- and 21st-century politics and society. Does not provide a survey of religion and politics for all major world religions, or other religions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD student; Credit is allowed for only POS 652 or 598 (Religion and Politics)
POS	663	Ethnic Conflict	Acquaints students with a variety of theoretical and empirical approaches to the study of conflict between nations and states, which is often called ethnic conflict. Aims to understand the nature of ethnic identity, the reasons it persists and changes over time, and the conditions under which it can be mobilized for political ends. Discussions are theoretical and comparative. Draws on empirical results and cases to support, qualify and refute propositions, and draw inferences. Prior social science course work preferred.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 598 (Ethnic Conflict) or POS 598 (Deadly Ethnic Conflict) or POS 663
POS	664	War/Peace/Conflict Processes	Systematic analysis of the causes of war, the preconditions for peace, and approaches to the resolution of conflict.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		

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POS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
POS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
PPE	215	Teaching Team Sports	Practical application of biomechanical, physiological, psychological, and learning principles in the analysis of skill acquisition and performance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	220	Teaching Lifetime Activity	Participating in and teaching sequenced activities K-12.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	230	Teaching Group Exercise	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 230 or 294 (Teaching Group Exercise)
PPE	235	Tchng Strength Cond for Health	Fundamental principles, strategies and assessments of strength training and conditioning methodologies that are necessary to effectively operate in a school-based setting. Most secondary schools offer some form of strength training in a physical education setting, either as a stand-alone course or as part of a traditional class structure. Therefore, new physical education teachers should be well informed on the scientific rationale for the use of strength and conditioning programs in schools, and be able to design and implement these programs safely. Provides prospective physical education teachers with the knowledge and skills needed to safely and effectively operate in a school-based strength training setting, whether it is for physical education or sport performance.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 235 or PPE 294 (Teaching Strength Conditioning for Health)
PPE	240	Physical Activity	Recognizing individual interests and abilities, the program provides courses covering a wide variety of physical activities. We make an effort to address contemporary trends and student, faculty and staff interests. Offerings may include but are not limited to classes in the areas of: aquatics, artistic and social dance, fitness development, martial arts, mind/body, outdoor recreation, resistance training, sports and games.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		
PPE	300	Intro to PE, Fitness and Sport	Introduces the fields of physical education, exercise science, sports medicine, and related fields. Discusses the history and trends of physical education as well as key concepts, programs, problems, and issues related to teaching physical education. Teaches essential background knowledge, better preparing for career success. The online (blackboard) component of this class provides practical experiential learning and assesses knowledge and comprehension of the key concepts presented in the course.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Minimum 60 hours; Junior or senior standing; Credit is allowed for only PPE 300 or 394 (Intro to Physical Education, Fitness & Sport) OR Visiting University Student
PPE	310	Healthy Learning Communities	Prepares educators with the knowledge, skills and dispositions to support learners' overall health. Focuses on educator's roles in creating healthy and active learning communities and addresses a variety of educational settings and learner ages.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours

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PPE	315	Ped Movement Sci for PPE	Provides a general overview of the functional anatomy of the human body as it relates to movement and the biomechanical principles underlying the execution of a given motor skill. Also examines the influence of physical growth and maturation on the development of motor skills.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): BIO 201; BIO 202 OR Visiting University Student
PPE	320	Exercise Physiology Concepts	Provides an introductory-level understanding of how the body responds prior to, during, and after participation in dynamic and static exercise. Examines the physiological basis of human movement, with emphasis on reviewing what exercise physiologists have learned about the diversity of physical activity, specifically in children. Although many physiological responses to activity are predictable, the magnitude and pattern of responses are unique depending on the age, gender, and previous experience of the individual. Also examines the role an active lifestyle plays in the overall health and well-being of school-aged children and adolescents.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: BIO 201; BIO 202; Credit is allowed for only PPE 320 or 394 (Pediatric Exercise Physical)
PPE	335	Move & Phys of Child in PE	Provides an introductory-level understanding of mechanical principles underlying human movement, the developmental patterns reflected in human movement birth through childhood and adolescence, basic principles of motor learning and the physiological basis of human movement. Covers how these principles directly affect the development of physical activity opportunities in in community-based sport and recreation settings with a specific eye toward the role an active lifestyle plays in the overall health and well-being of children and youth between the ages of 6 and 18.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing
PPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	396	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	397	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	450	Phys Educ for the Elem School	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 450 or PPE 550
PPE	455	Phys Educ in the Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 455 or PPE 555
PPE	460	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 460 or PPE 560
PPE	465	Teaching Phys Act Concepts	Focuses on teaching physical activity concepts in physical education settings and other settings such as fitness clubs or community health organizations. Analyzes and critiques state physical activity standards and national guidelines for promoting physical activity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): minimum 45 hours. Credit is allowed for only PPE 465 or PPE 565
PPE	477	Student Teaching: PE EED	Student teaching in elementary physical education setting grades 1-8; synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	478	Student Teaching: PE SED	Student teaching in middle/secondary physical education setting grades 6-12; synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	480	Prof Seminar for Physical Educ	Methods of instruction, organization, and presentation of appropriate content in elementary and secondary physical education.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
PPE	485	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; Credit is allowed for only PPE 485 or PPE 586
PPE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501

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PPE	535	Intro to Sport Ed	Introduces a grade 5-12 school physical education curriculum that focuses on providing more complete and more authentic sport experiences.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (Degree or non-degree) students; Credit is allowed for only PPE 494, 598 (Sport Education) or PPE 535
PPE	550	Physical Educ-Elementary Sch	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Students who have credit for PPE 450 may not enroll in PPE 550
PPE	551	Innovative Programming in EPE	Provides an understanding of current trends and issues in elementary school physical education curriculum and how to implement the curriculum in a school environment. Students become familiar with a variety of best practices in curriculum and instruction specific to elementary children in physical activity settings. Emphasizes incorporating methods of effective teaching and activity organization, enhancing student learning, and effectively managing student behavior and the learning environment.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only PPE 451 or 551
PPE	555	Physical Educ-Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and non-degree); Credit is allowed for only PPE 455 or PPE 555
PPE	560	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and Non-degree); Credit is allowed for only PPE 460 or PPE 560
PPE	565	Teaching Phys Act Concepts	Teaching physical activity concepts in PE settings. Analyzes and critiques state and national physical education standards.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only PPE 465 or 565
PPE	567	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	568	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	586	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PPE 485 or PPE 586
PPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	501	Fundamentals Political Psych	Core course focuses on the interdisciplinary study of political psychology and teaches the tools necessary to evaluate the application of political psychology to political marketing, campaigns and policy advocacy. Covers both the theoretical foundations underlying research in political psychology as well as foundational and contemporary applications. Examines topics including personality, emotions and genetic bases of behavior as well as approaches to the design and interpretation of experimental research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	502	Cognition/Emotions Political	Focuses on key concepts in cognitive psychology and the scientific study of mental processes. Covers how people acquire, store, transform, use information. Topics may include perception, attention, language, memory, reasoning, problem solving, decision making and attributions. Also covers the relation between emotions and cognition.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	503	Prejudice/Intergroup Relations	Interrogates various theoretical approaches to intergroup conflict; why stereotypes and prejudice exist; the different forms these attitudes take (e.g., ethnocentrism, racial attitudes); and their implications for politics. Also introduces social identity theory and demonstrates how this theory can elucidate group processes. Moreover, covers theoretical arguments for and concrete examples of how prejudice can be reduced and tolerance increased.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	504	Attitudes and Persuasion	Focuses on the individual and contextual factors responsible for changes in beliefs, attitudes and behaviors. First covers the concept of attitudes and their measurement before examining in depth various theoretical approaches that explain how people come to change their attitudes. Also covers meta-cognitive as well as implicit factors in persuasion. Ends with a more applied look at persuasion, focusing on how persuasive messages can be crafted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	505	Biopolitics	Builds a foundational understanding of biological, evolutionary, genetic and neurobiological perspectives in political psychology. Draws on these perspectives to explain political attitudes and behavior, considering literature on nonhuman animals, developmental psychology, personality, psychophysiology, neurobiology, genetics, hormones, disgust sensitivity and mating.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	506	Experimental Design	Focuses on the experimental paradigm that permeates political psychology. Introduces the logic of experimentation and how to design and evaluate experimental studies. Focuses on a variety of different experimental designs, highlighting the various benefits and drawbacks of laboratory experiments, survey experiments and field experiments. Readings combine both theoretical and methodological pieces on the design, analysis and interpretation of experiments with empirical applications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	511	Public Opinion	Provides an advanced examination of the political opinions of citizens. Covers how citizens structure their opinions and what factors can cause these opinions to change. In so doing, also evaluates various theoretical perspectives and methodological approaches used to study public opinion. Topics include political knowledge, ideology, partisanship and values. Moreover, provides insight into how these factors shape people's evaluation of government and how individual-level opinions are aggregated to produce public opinion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	512	Political Polarization	Advanced exploration of the concept of political polarization from a political psychology perspective. Introduces the concept of political polarization and provides an overview of recent trends in polarization in the U.S. while covering debates such as whether polarization has increased over time, whether Americans are polarized around issues or social identities, and how value divergence can culturally conflict. Also explores how the media and other external factors can affect citizens in ways that can either fuel or attenuate polarization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	513	Elite Decision Making	Provides a comprehensive examination of political psychology approaches to understanding and evaluating elite decision making. Introduces paradigms for analyzing elites' decisions that focus on the role of personality, leadership styles and prospect theory among others. Also focuses on covering frameworks that students can apply to systematically study how elite actors make decisions on the domestic and international stage. Combines conceptual readings explaining these approaches with applied readings that analyze the decision-making processes of elites through a range of case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	514	Campaigns and Elections	Provides a political psychology perspective on campaigns and elections. Topics include the effect of election rules, campaigns, social networks and the media on turnout and vote choice. Students engage with research that addresses these topics through psychological lenses focusing on the role of emotions, negativity, persuasion and learning. Combines theoretical literature with applied papers leveraging a variety of experiments conducted in campaign contexts. Also discusses implications for campaign organization and management.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	515	Advances in Media Effects	Provides an advanced examination of contemporary research and debates on media effects. Covers the paradigms of agenda setting, priming and framing. Considers key issues in the field of media effects by paying particular attention to the underlying psychological mechanisms through which the media can affect citizens' attitudes and social judgment. Draws on a variety of examples to demonstrate both the power and limits of media to affect citizens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	550	Capstone	Serves as the culminating experience of the Masters in Political Psychology. Students apply the theories, frameworks and evidence encountered during the course to explore a novel question or contribute to a contemporary research debate. In the process, students apply a multitude of tools to which they were exposed during the course of the program. Develops final products individually or in a small group based on consultation with course faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): Political Psychology MA student
PPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PRM	120	Leisure and Quality of Life	Conceptual foundations for understanding the role of leisure in the quality of life. Social, historical, psychological, cultural, economic, and political foundations of play, recreation, and leisure.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	
PRM	145	Special Events Management	Principles of programming and managing special events for diverse populations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
PRM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
PRM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student

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PRM	210	Leisure Delivery Systems	Introduces development, management and organization of the public, nonprofit and private sectors for the leisure services professions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): NLM 160 or PRM 120 with C or better if completed OR Visiting University Student
PRM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
PRM	304	Rec Planning/Facility Develop	Surveys development and management of public, private, and commercial recreation areas and facilities with a focus on meeting program needs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): CRD 210 with C or better; MAT 142 or higher with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
PRM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
PRM	310	Volunteer Management	Studies volunteer administration practices integral to community organizations providing an introduction to management techniques including program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
PRM	315	Community Recreation Systems	Explores and assesses community recreation delivery systems in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 120 with C or better OR Visiting University Student
PRM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
PRM	340	Outdoor Survival	Interdisciplinary approach to outdoor survival, including attitudes, psychological stress, physiological stress, preparation, hypothermia, navigation, flora, and wildlife.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
PRM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
PRM	364	Foundations of Rec Therapy	Overview of the fundamentals of therapeutic recreation. Introduces the delivery of treatment services for individuals with a variety of illnesses and disabling conditions experienced throughout the lifespan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	370	Public Lands Management	Introduces outdoor recreation resource delivery systems; history of wilderness and outdoor recreation resources; the role of outdoor recreation in society; outdoor recreation agencies; related environmental issues.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	380	Wilderness & Parks in America	Examines the American Conservation Movement and the relationships between the environment and recreation behavior.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB & H	
PRM	384	Recreational Therapy Practicum	Facilitates a structured fieldwork experience with classroom instruction to integrate knowledge and develop skills and abilities in recreational therapy. Students gain direct service experience with health care, human services, education or recreation programs under the supervision of recreational therapists.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3-12		Pre- or corequisite(s): PRM 364
PRM	400	Intervention in Rec Therapy	In-depth analysis of theoretical and philosophical approaches to therapeutic recreation practice with emphasis on various facilitation techniques used in therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre/Co-requisite: PRM 364
PRM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student

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PRM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
PRM	406	Program Dsgn&Admn in RecTherpy	In-depth analysis of assessment, treatment planning, program implementation, documentation, and evaluation strategies employed in therapeutic recreation practice.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 364 with C or better
PRM	413	Ldrship & Prof Dvlpmt in RT	Examines therapeutic recreation leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	422	Special Event Programming	In-depth analysis of the theoretical and philosophical aspects of special event management relative to talent and entertainment, protocol, etiquette, ethics, and programming. Requires some field work in event management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	423	Operations and Design	Expands on the concepts of event programming with in-depth examination of the theoretical and philosophical aspects of event operations, festival site design, and working with subcontractors and vendors.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	427	Revenue Generation	Examines theoretical and philosophical aspects of revenue generation relative to special events through in-depth exploration of budgeting, accounting, and sponsorship opportunities. Requires field work at an event.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	440	Advocacy in Therapeutic Rec	Explores trends and issues facing therapeutic recreation professionals and advocacy practices integral to therapeutic recreation service delivery. Investigates a variety of topics; community engaged experiences facilitate the development of competencies needed to effectively lead therapeutic recreation programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 563 or PRM 440 or CRD 598 (Advocacy in Therapeutic Recreation)
PRM	450	Therapeutic Rec & Comm Health	Students gain an in-depth understanding of the functional limitations experienced by older adults and individuals living with chronic illness or disability. Studies and applies the theories and models of leisure education through the provision of therapeutic recreation. The interprofessional course combines field exposure and classroom instruction to maximize understanding and skill mastery for assessing, planning and facilitating services to prevent and remedy health and social problems experienced by individuals living in independent and subsidized community housing.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 450 or PRM 550 or CRD 494 (Therapeutic Recreation and Community Health) or CRD 598 (Therapeutic Recreation and Community Health) or PRM 494 (Therapeutic Recreation and Community Health)
PRM	451	Grant Writing	How to increase grant funding: creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
PRM	453	Inclusive and Adaptive Sports	Provides an overview of adaptive community recreation, the importance of inclusion in the recreational field and how to facilitate programs in this growing field.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or CSM 494 (Inclusive and Adaptive Sports and Recreation) or PRM 453 or PRM 494 (Inclusive and Adaptive Sports and Recreation) OR Visiting University Student
PRM	455	Rec Therapy w/Children, Youth	In-depth study of the philosophical concepts, principles and techniques of play and recreation applied in practice to promote holistic health and well-being among children, youth and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CDE 244 or PRM 364 with C or better if completed OR Visiting University Student
PRM	460	Assessment&Documentation in RT	In-depth study of the therapeutic recreation assessment process, including examination of interview techniques, assessment instruments, treatment planning, outcomes, evaluation, research, and documentation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 364 with C or better OR Visiting University Student
PRM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
PRM	470	Environmental Communication	Park interpretation and environmental education that includes theories, principles and techniques.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 60 hours
PRM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student

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PRM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student
PRM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): CRD 210, CSM 201, NLM 220, or TDM 205; minimum 72 hours; minimum 2.50 GPA
PRM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
PRM	487	Advanced Special Events Mgmt	Advanced principles of special event sponsorship, public relations, marketing, contracting, risk management, and financial management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	488	Event Marketing and Promotion	In-depth look at the influence and role of print and social media in special event management. Studies theory, strategies, and planning relative to experience marketing, including the use of promotions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
PRM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student
PRM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
PRM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	
PRM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
PRM	550	Therapeutic Rec & Comm Health	Students gain an in-depth understanding of the functional limitations experienced by older adults and individuals living with chronic illness or disability. Studies and applies the theories and models of leisure education through the provision of therapeutic recreation. The interprofessional course combines field exposure and classroom instruction to maximize understanding and skill mastery for assessing, planning and facilitating services to prevent and remedy health and social problems experienced by individuals living in independent and subsidized community housing.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PRM 450 or PRM 550 or CRD 494 (Therapeutic Rec & Community Hlth) or CRD 598 (Therapeutic Rec & Community Hlth) or PRM 494 (Therapeutic Rec & Community Hlth)
PSB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	501	Basic Principles of ABA	Fundamental principles of behavior including the history, theory, definitions, processes, concepts and characteristics of applied behavior analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	510	Basic Principles Exp Analysis	Practical applications of research methodology to examine the effects and evaluate the efficacy of behavioral interventions. Provides an empirical science approach to designing, conducting and critically evaluating research involving applications of the experimental analysis of behavior in the use of graphic displays, single-case, ABAB, multiple baselines, changing criterion and alternating treatment designs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	511	Advanced Research Methods	Focuses on research techniques such as time-series methods for single-case assessment, behavior measurement and the effectiveness of treatment interventions on behavior. Topics include conducting component and parametric analyses and use of experimental designs such as withdrawal, reversal, criterion and multiple baselines.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		Pre-requisite: PSB 501; PSB 510
PSB	520	Ethics & Prof Standards in ABA	Ethical standards and legal responsibilities including regulatory requirements and Arizona licensing statutes for ABA professionals who provide services to individuals with special needs and their families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	530	Behv Obs & Functnl Assessment	Focuses on how to conduct behavioral observations and functional analyses using various methods for assessment and for data collection, organization and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSB 501; PSB 510

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PSB	540	Dev of Appld Beh Intervention	Techniques for conducting task analyses; developing target intervention outcomes; determining alternative behaviors and environmental changes; use of behavior change procedures such as reinforcement, extinction, punishment, shaping, modeling, training and teaching.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSB 501, 510. Corequisite(s): PSB 530
PSB	563	Basic Principles of OBM	Overview and the use of Behavioral Systems Analysis (BSA) and Performance Management (PM) as they relate to the identification and modification of environmental variables that can affect and improve individual and organizational performance as a system. Basic techniques include analysis of antecedents, behavior and consequences and development of interventions to support the desired performance improvements and increase system productivity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	573	Adv Prin Learn & Analy of Behv	Provides an in-depth review of the philosophy and theory of behaviorism and its scientific application. Includes Skinner's conceptual framework plus fundamental elements of behavior change and procedures.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	578	ABA in Dev Disorders	Provides an overview of the major theories and research related to the development of psychological disorders of childhood and adolescence including autism, attention deficit disorder, behavior disorders and intellectual disabilities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MS Applied Behavior Analysis major
PSB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		

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PSB	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSY	101	Introduction to Psychology	Major areas of theory and research in psychology. Requires participation in department-sponsored research or an educationally equivalent alternative activity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	
PSY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): Freshman; maximum 25 earned hours
PSY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	224	Intro Cognitive Neuroscience	Surveys topics relating brain activity to cognitive processes and behavior. Begins with an overview of neurophysiology and techniques to measure brain activity. Discusses perceptual and motor processes before investigating neural responses related to attention, memory and cognitive control. Concludes with a discussion of brain processes related to reward, decision making and social cognition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Credit is allowed for only PSY 224 or PSY 294 (Introduction to Cognitive Neuroscience)
PSY	230	Introduction to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): PSY 101 (PGS 101) with C or better; MAT 119, 170, 242, 243, 251, 260, 261, 262, 270, 271, 272, 274, 290 or 291 with C or better OR Visiting University Student
PSY	231	Honors Intro to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology for honors students. Lab includes learning to use statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	CS	Prerequisite(s): Barrett Honors student; MAT 119, 170, 242, 251, or higher with C or better; PSY 101 with C or better
PSY	244	Intro to Directed Child Study	Developmental theories and methods of social interaction with preschool children and supervised practicum in the Child Study Laboratory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSY	290	Research Methods	Planning, execution, analysis, and reporting of experiments. Literature, procedures, and instruments in representative areas of psychological research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	L or SG	Prerequisite(s): ENG 102, 105 or 108 with C or better; PSY 101 (PGS 101) with C or better; ECN 221, JUS 302, POS 401, PSY 230, 231, QBA 221, SOC 390 or STP 226 with C or better OR Visiting University Student
PSY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	302	Psych of Positive Leadership	To thrive in the 21st century world requires innovation, collaboration and the ability to lead during times of change and complexity. There is increasing demand for leaders who can combine a high level of technical ability with the social skills that are necessary for groups of people to live and work productively and in harmony with each other. Focuses on helping students to understand and apply key psychological and social processes that create the conditions for leaders and teams to thrive in dynamic, collaborative environments. Students become familiar with foundational research insights through an "action learning" format that integrates theory with structured opportunities for self-reflection and individual- and group-level practice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; PSY 101; Credit is allowed for only PSY 302 or PSY 394 (Positive Psychology) or PSY 394 (The Science Behind Well-Being and Happiness) or PSY 394 (Positive Psychology: The Science of Happiness)
PSY	304	Effective Thinking	Understanding and improving intellectual and behavioral skills; information analysis, inference, logic, problem solving, and decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): MAT 119, 170 or higher or PSY 230 with C or better OR Visiting University Student

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PSY	306	Environmental Psychology	Concepts and research strategies in the study of behavior in interaction with physical environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 (PGS 101) with C or better
PSY	307	Your Brain on Drugs	Provides an overview of the effects of addictive drugs on the brain from a psychobiology and neuroscience perspective. Covers all classes of addictive drugs, from alcohol to nicotine to heroin to crystal meth. Also discusses topics related to many popular questions about addiction, such as: Is addiction really a disease? Is marijuana a gateway to harder drug use? Do drugs really kill brain cells? Which drug is the most addictive?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 181 or PSY 101; minimum 45 hours; Credit is allowed for only PSY 307 or PSY 394 (Your Brain on Drugs) OR Visiting University Student
PSY	315	Personality Theory/Research	Definition and description of personality in terms of theoretical and methodological approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	320	Learning and Motivation	Principles of conditioning and motivation; approaches to learning, including acquisition of verbal materials, concepts, and motor skills; memory and transfer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	323	Sensation and Perception	Underlying processes of vision, audition, and the other senses. Integrates theory, research, and application.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	324	Memory and Cognition	Processes underlying information storage and retrieval, including different kinds of memory, forgetting, depth of processing, and control processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PSY	330	Statistical Methods	Advanced application of statistics to psychology. Highly recommended for students interested in attending graduate school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): ECN 221, JUS 302, POS 401, PSY 230, PSY 231, SBS 304, SOC 390, or STP 226 with C or better OR Visiting University Student
PSY	341	Developmental Psychology	Analyzes behavior development in terms of psychological principles. Current research in human development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	344	Directed Child Study	Theories and methods of intervention with preschool children and supervised practicum in the Child Study Laboratory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): CDE 232, ECD 211 or PSY 341 (PGS 341) with C or better OR Visiting University Student
PSY	350	Social Psychology	Human social behavior, including such concepts as aggression, attraction, attribution, conformity, groups, helping, person perception, and persuasion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; Credit is allowed for only PSY 350 or PSY 351 OR Visiting University Student
PSY	351	Honors Social Psychology	Critical analysis of human social behavior for honors students; topics include stereotyping, social influence, attraction, aggression, helping, groups, and attitudes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): Barrett Honors College student; PSY 101 (PGS 101); Credit is allowed for only PSY 350 (PGS 350) or PSY 351 (PGS 351)
PSY	360	Cognitive Science	Examines cognition from the varied perspectives of philosophy, linguistics, psychology, computer science (artificial intelligence), and neuroscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 101 with C or better OR Visiting University Student
PSY	365	Community Psychology	Mental health and psychological well-being in the community, emphasizing current issues and related research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 315 (PGS 315), PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	366	Abnormal Psychology	Historical and current definitions, theory, and research concerning abnormal behavior. Major categories of psychopathology, including related treatment approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	368	Forensic Psychology	Clinical practice of forensic psychology: the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101; PSY 290 or minimum 45 hours OR Visiting University Student
PSY	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student

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PSY	370	Interpersonal Relationships	Development of personal skills for competent functioning in interpersonal relationships across multiple social contexts. Principles of mental health adjustment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better OR Visiting University Student
PSY	375	Psych of Addictive Behavior	Offers a psychological perspective on addictions, including those related to drug use, gambling, sex, eating and Internet use. Specific topics include basic pharmacology, behavioral processes in addiction, behavioral economics, impulsiveness, delay discounting, self-control, self-regulation, and prevention and treatment of addictions. Some of the data presented in the course derive from animal models; an evolutionary perspective is assumed throughout. Encourages students to think critically about drug use and dependence and about addictions in general. Students achieve these objectives through assigned readings (primarily empirical research), writing assignments, and active participation in, and facilitation of, class discussions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PSY 375 or PSY 394 (Psychology of Addictive Behaviors) OR Visiting University Student
PSY	384	Psych Undergrad Teaching Asst	The UTA experience allows students to work with the faculty to contribute to the effectiveness of a particular class and provides them with a unique educational benefit commensurate with their receiving upper-division course credit. Provides students with experience in teaching and interacting with faculty and students. These experiences help students make a decision about whether to pursue a graduate degree in psychology and to develop a personal philosophy of learning and teaching.	N	PRA	Y	P/F	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 101 with C or better; minimum 30 hours; Credit is allowed for only PSY 384 or PSY 394 (Undergraduate Teaching Assistant) OR Visiting University Student
PSY	385	Psychology of Gender	Examines, from a psychological perspective, the similarities and differences in beliefs, attitudes, and behaviors of women and men.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
PSY	390	Experimental Psychology	Continuation of concepts in PSY 290, with emphasis on multifactor designs and programmatic sequence of experiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 101 with C or better; minimum 30 hours OR Visiting University Student
PSY	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	Y	RSC	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		
PSY	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	Y	RSC	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		
PSY	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
PSY	414	History of Psychology	Historical development of psychology from its philosophical beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): PSY 290 with C or better
PSY	420	Analysis of Behavior	Research, applications, and philosophy of the analysis and control of human behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 290 and 320 with C or better
PSY	424	Genetic Psychology	Introduces the concepts, methodologies, and findings of behavioral genetics for Psychology majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 290 with C or better
PSY	425	Biological Bases of Behavior	Critical study of physiological psychology, e.g., brain mechanisms underlying motivation, learning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 325 with C or better OR Visiting University Student
PSY	426	Neuroanatomy	Structure and function of mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): PSY 325 with C or better; Credit is allowed for only PSY 426 or PSY 526 OR Visiting University Student
PSY	430	Industrial Psychology	Organizations and management systems: motivation and work performance; human factors in systems design and evaluation; personnel selection and testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MGT 301 or PSY 101 with C or better OR Visiting University Student

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PSY	432	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines makes it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 290 with C or better; Credit is allowed for only PSY 432 or PSY 498 (Embodied Cognition) or PSY 529
PSY	434	Cognitive Psychology	Human organism as a processor of information, from perception to cognition. Abstract concepts, semantic memory, attention, and mental imagery.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 323 or 324 with C or better
PSY	437	Human Factors	Emphasizes human factors in high-technology systems. Specific topics include systems development, systems analysis techniques, displays, and controls.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 290 with C or better
PSY	440	Industrial/Org Psychology	Examines personnel selection, performance assessment, job and workplace design, job satisfaction, organizational behavior, management systems, and industrial safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): PSY 101 with C or better
PSY	441	Cognitive Development	Experimental and theoretical literature in child development and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): PSY 341 (PGS 341) with C or better; PSY 290 with C or better
PSY	443	Abnormal Child Psychology	Covers the major disorders of childhood and adolescence (e.g., autism, hyperactivity, phobias, and delinquency), including cause, diagnosis, treatment, and prevention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): PSY 315, 341, or 366 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	444	Adolscnt Psych/Psychopathology	Advanced-level survey of normal adolescent psychological development and psychological disorders of this age period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 341 with C or better
PSY	446	Social Development	Discusses theory, research, and issues regarding social development. Topics may include formation of attachments, prosocial development, and gender-role development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): PSY 341 (PGS 341) with C or better; PSY 290 with C or better
PSY	447	Psychology of Aging	Analyzes loss, maintenance, and gain associated with cognitive and affective aging. Individual differences in coping with normative life transitions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	451	Stereotyping/Prejudice/Discrim	Critical investigation of the processes underlying, and the factors contributing to, stereotyping, prejudice, and discrimination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	453	Organizational Behavior	Surveys psychological theory and research as applied to the behavior of individuals in organizational settings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): PSY 350 with C or better; Credit is allowed for only PSY 453 or PSY 598 (Organizational Behavior) OR Visiting University Student
PSY	458	Group Dynamics	Theories and methods of group leadership, group effectiveness, communication within groups, and relations between groups and individual members.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	461	Interpersonal Influence	Principles and procedures that affect the process of social influence; consideration of attitudinal, compliance-inducing, and perceptual influences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better; PSY 350 (PGS 350) or 351 with C or better
PSY	462	Health Psychology	Contributions of psychology to health promotion and illness prevention, adaptation to acute and chronic illness, and to the healthcare system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	465	Psychology of Stress & Coping	Readings in theory and research in the area of stress and coping. Lecture, discussion, class presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 315 (PGS 315), 350 or 351 with C or better; PSY 290 with C or better
PSY	468	Psychology and Law	Theories, research, and practice in psychology as related to law, including criminal, civil, domestic relations, and professional issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): CRJ 302; Law and Human Behavior certificate student OR PSY 290 with C or better OR Visiting University Student
PSY	470	Psychopharmacology	Basis of drug action at physiological and behavioral levels. Psychological and medical applications and limitations of drugs used in the treatment of mental illness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 325 or one of the following: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only PSY 470 or PSY 570 OR Visiting University Student
PSY	471	Psychological Testing	Methods and theory of psychological testing; various types of psychological tests; consideration of ethical, social, and legal aspects of testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better
PSY	472	Clinical Psychology	Clinical psychology as a science and profession. Historical development, methods of interviewing, assessment, and therapeutic intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 366 (PGS 466) or 443 with C or better OR Visiting University Student

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PSY	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
PSY	475	Multicultural Clinical Psych	Discussion-based course that focuses on cross-cultural conceptions of mental illness, diagnosis and treatment approaches, and beliefs and practices of specific ethnocultural groups in the United States. Encourage students to critically think about diversity issues in clinical psychology, one's own attitudes, and culture and psychology more broadly. Students achieve these objectives through reading empirical articles and chapters; taking quizzes and exams; completing hands-on exercises, essays and other writing assignments; and actively participating in and facilitating class discussions.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Minimum 45 hours; Credit is allowed for only PSY 475 or 498 (Clinical Psychology: Multicultural Issues)
PSY	482	Soc Influence/Consumer Behav	Discusses social influence principles, emphasizing strategies employed by professionals that affect consumer behavior. Analyzes consumer defenses against manipulations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): PSY 350 with C or better
PSY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): minimum 45 hours
PSY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6	L	Prerequisite(s): Barrett Honors student
PSY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-7		Prerequisite(s): PSY 290 with C or better
PSY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 399
PSY	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	501	Supervised Teaching	Experience in and examination of perspectives on teaching undergraduate psychology.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	502	Professional Issues in Psych	Introduce graduate students to various aspects of the professional roles of psychology, as well as to the ethical standards of the profession.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only PSY 502 or PSY 598 (Seminar on Professional Issues in Psychology)
PSY	512	Advanced Learning	Principles and theories of learning, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	515	Quantitative Analysis I	Introduces advanced experimental and quasi-experimental analysis. Focuses on group-based design and analysis of variance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	516	Quantitative Analysis II	Advanced experimental and quasi-experimental analysis. Focuses on principles underlying linear regression and related statistical techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 515 with B or better; Credit is allowed for only PSY 516 or PSY 598 (Psychological Methods II)
PSY	517	Quantitative Analysis III	Covers basic multivariate statistical techniques currently utilized in psychology with a primary focus on factor analysis and structural equation modeling.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 516 with B or better; Credit is allowed for only PSY 517 or PSY 598 (Quantitative Research Methodology & Statistics III)

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PSY	526	Neuroanatomy	Covers the structure and function of the mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): graduate; Credit is allowed for only PSY 426 or PSY 526
PSY	528	Sensation and Perception	Principles of sensory and perceptual processes, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	529	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines make it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): graduate standing in Psychology; Credit is allowed for only PSY 432 or PSY 529 or PSY 591 (Embodied Cognition)
PSY	530	Intermed Statistics	One-way and factorial designs; contrasts; post-hoc tests; probing of interactions; mixed designs; power; computer applications; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or PSY 530
PSY	531	Multiple Regression/Psych Res	Multiple regression and correlation; hierarchical regression; interactions; curvilinear relationships; categorical predictors; ANOVA in regression; regression diagnostics; regression graphics; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	532	Analysis of Multivariate Data	Matrix algebra for multivariate procedures, component and factor analysis, canonical and discriminant analysis, classification, MANOVA, logistic regression, hierarchical linear model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	533	Structural Equation Modeling	Path analysis; exploratory and confirmatory factor analysis; recursive and nonrecursive latent variable models; mean and covariance structures; latent growth models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	534	Psychometric Methods	Theory and practice of psychological measurement using classical and modern test theories. Reliability assessment, test validation, test construction, test usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	535	Cognitive Processes	Theoretical/empirical treatment of the human organism as a processor of information, including abstraction, memory structure, problem solving, and thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	536	Stat Mthds Prevention Research	Statistical methods used in prevention research including epidemiological methods, logistic regression, program effect estimation, estimation, and mediation analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	537	Longitudinal Growth Modeling	Growth modeling methodology to describe individual variation in development over time. Employs multilevel and structural equation modeling frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	538	Adv Structural Equation Model	Mean and covariance structure analysis. Includes multiple-group modeling, two-level hierarchical modeling, longitudinal growth modeling, analysis with categorical outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	539	Multilevel Models Psych Resrch	Multilevel (i.e., hierarchical linear) modeling, as described by Raudenbush and Bryk (2002) and others. Covers analytic strategies for analyzing a variety of different nested data structures (e.g., couples data, clients nested within group therapy settings, children nested within classrooms, longitudinal data). Covers two- and three-level models for cross-sectional and longitudinal data and also addresses related topics such as centering and estimation. Students perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 531; Credit is allowed for only PSY 539 or 591 (Multilevel Modeling)
PSY	540	Missing Data Analysis	Covers analytic strategies for analyzing data with missing values, with a special emphasis on modern approaches for dealing with missing data, in particular maximum likelihood missing data handling and multiple imputation, maximum likelihood estimation and multiple imputation. Familiarizes students with missing data theory, traditional analysis methods (e.g., deleting incomplete cases, single imputation methods), maximum likelihood estimation, multiple imputation, planned missing data research designs, and the inclusion of auxiliary variables. Students learn how to perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 532; Credit is allowed for only PSY 540 or 591 (Missing Data)
PSY	541	Research Cognitive Development	Theoretical and empirical issues in the study of children's knowledge and cognitive processes. Comparison of research in Piagetian and other traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	542	Social Development	Reviews and critiques major issues in the area of social development. Covers theory, research, and content.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	543	Stat Mediation Analysis	Specifically covers the substantive motivations for mediating variables and third-variable effects (interaction, confounder, covariate and mediator) in general. Mediation represents a chain such that one variable causes a mediating variable and the mediating variable causes a dependent variable. Describes the single mediator model in detail including assumptions, estimators and geometric interpretations. Once the details of the single mediator model are understood, analysis is extended to multiple mediator models, path analysis, and models with moderators and mediators. Discusses modern causal inference approaches for mediation along with latent variable models, multilevel models and special models for longitudinal data. Also describes research designs for investigating mediating variables. Students learn how to perform and interpret the results of analysis using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 530; PSY 531; Credit is allowed for only PSY 543 or PSY 591 (Mediation) or PSY 591 (Statistical Mediation Analysis)
PSY	545	Advanced Legal Psychology	Surveys psychological theory and research as applied to the cognitions, feelings and behavior of individuals in the legal system. Explores the implications of several subfields of psychology (e.g., social, cognitive, clinical) for legal settings, such as police departments, courtrooms, jury rooms. Provides foundation for those who are considering a career in forensic psychology, law, social work, criminal justice and should also be interesting to those who want to know more about the social and psychological issues at play in the legal system.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	546	Advanced Forensic Psychology	Advanced overview of the clinical practice of forensic psychology: the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	547	Correctional Psychology	Principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings and with incarcerated populations, establishing successful relationships with correctional staff and inmates.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	549	Capstone in Forensic Psych	Culminating experience for students in the Master of Science in Forensic Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Forensic Psychology MS student
PSY	550	Advanced Social Psychology	Theory and research concerning interpersonal perception, decision making, attitude formation and change, group processes, social motivation, and interaction processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	551	Advanced Social Psychology	Continuation of PSY 550.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	553	General Psychology Capstone	Culminating experience for online students only in the Master of Science in Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Psychology MS student
PSY	554	Item Response Theory	A collection of measurement models based on item response theory (IRT). The models express the probabilities of responses to test or questionnaire items as a function of latent respondent characteristics and item properties. IRT models form the basis for measurement in standardized educational testing, but generally are also now used in clinical, social and personality measurement in psychology, medicine and the social sciences. Assumptions underlying IRT models, methods of parameter estimation and fit evaluation. Also covers important applications of the models in computerized adaptive testing, the detection of measurement bias and multidimensional IRT. Uses several software tools useful in IRT modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 534; Credit is allowed for only PSY 554 or 591 (Item Response Theory)
PSY	555	Exper/Quasi-Experiment Designs	Reviews research techniques. Analyzes lab and field research; applications to specific topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	560	Advances/Theoretical Psych	Covers new empirical and theoretical work in psychology with emphasis on its applicability.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
PSY	563	Prev Plan & Eval Serv Setting	Provides the foundational and theoretical knowledge necessary for prevention planning and evaluation in service settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	564	Prev Educ, Comm, Serv Delivery	Provides the foundational and theoretical knowledge necessary for aspiring professionals planning to serve as a resource to community members and organizations regarding prevention education, the promotion of programs, services and activities as well as maintaining good public relations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	567	Prev Organization & CC	Provides the foundational and theoretical knowledge necessary for affecting organizational and community change to promote and engage in evidence-based prevention practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568
PSY	569	Prof Ethics, Grwth, Responsbty	Provides the foundational knowledge necessary for engaging and maintaining practices in prevention that are ethical, culturally responsive and adhere to the beneficence and non-maleficence principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	570	Psychopharmacology	Provides a broad overview of numerous classes of both psychotherapeutic and addictive drugs (which are sometimes overlapping). Focuses on the classification, mechanism of action, pharmacokinetics/pharmacodynamics, and clinical efficacy of medications that are currently used for the treatment of various psychiatric disorders including mood disorders, anxiety, schizophrenia, ADHD and other conditions. The latter portion of the class focuses on therapeutic drugs that also have abuse potential, including some psychostimulants, opiates, sedative/hypnotics, cannabinoids, steroids and hallucinogens.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 470 or PSY 570 or PSY 591 (Psychopharmacology)
PSY	573	Psychopathology	Theory and research relating to the contribution of psychological, social, physiological, and genetic factors to the development and persistence of abnormal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	574	Psychotherapy	Detailed survey of the theoretical and empirical literature relating to verbal psychotherapy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	576	Dynamical Systems in Psych	Analyzes patterns of behavior change in psychological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	578	Developmental Psychopathology	Covers major theories and research related to the development of psychological disorders of childhood and adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	601	Assessment & Diagnosis	Discusses scientifically informed approaches to assessment. Reviews research-based practical strategies for assessing the clinical symptoms, treatment needs and clinical outcomes of individuals who have problems with substance use. Students examine and explore how sociocultural views of substance use relate to patterns of use, and impacts individuals with substance use disorders, and their families. Uses a biopsychosocial approach to discuss the processes involved in addictive behaviors. Addresses how to weave assessment through the entire process of care, from initial screening, through treatment, to relapse prevention. Examines various screeners and assessments, and diagnostic interviews used to detect substance use disorders, along with the strengths and limitation of each. Also reviews how to communicate findings of assessments and diagnoses to individuals, parents and legal entities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	602	Comorbidity Substance Use	Reviews common co-occurring psychiatric, medical and legal problems with substance use related disorders. Discusses scientifically informed approaches to assessment and treatment. Examines and explores how mental illness in combination with chemical dependency and/or substance abuse plus other challenges, such as disabilities and legal problems, impacts individuals, families and society. Uses a biopsychosocial approach to explore and identify evidence-based practice and research in dual diagnoses. Addresses all of the DSM 5 major disorders, including mood, anxiety and psychotic disorders occurring with substance abuse. Examines various screeners and assessments used to detect the presence of and severity of co-occurring disorders. Students learn about the efficacy of psychopharmacology and psychosocial treatments in the treatment of dual diagnoses disorders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	603	Evidence-Based Interventions	Provides a comprehensive review of the evidence-based psychosocial and pharmacological treatments for substance use related problems. Although the current evidence base for the effects of psychosocial interventions is sizable, subsequent steps in the process of bringing a psychosocial intervention into routine clinical care are less well defined. This course details the reasons for the gap between what is known to be effective and current practice and offers recommendations for how best to address this gap by applying a framework that can be used to establish standards for psychosocial interventions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	604	Multicultural Issues	Cultural competence refers to an ability to interact effectively and respectfully with people of different cultural and socioeconomic backgrounds. Developing cultural competence results in an ability to understand, communicate with and effectively interact with people across cultures. Within the substance use field, programs with culturally responsive policies, assessments and treatment practices have been associated with higher retention of minorities in substance use treatment. Reviews the historical and cultural context of the most prominent cultures in the state of Arizona such as Hispanic Communities, Native Americans, African Americans, Asians and Pacific Islanders. Also reviews the historical and cultural context across sex, gender and sexual orientation as it relates to substance use. Spends the majority of the course time discussing the development of culture-centric approaches in practice, barriers to treatment and integrating diversity into treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	605	Grp Thrpy for Subst Rel Probl	Provides a comprehensive review of group dynamics and processes as they relate to addictions and substance use disorders. Reviews theories, research and evidence-based treatment interventions related to group therapy for addictions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	678	Prev Psychsoc Intervntions	Provides the foundational knowledge necessary for identifying evidence-based protocols.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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PTX	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
PTX	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
PTX	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
PTX	301	Basics Pharmacology&Toxicology	Human pharmacology and toxicology focusing on mechanisms of drug action, clearance systems and dose response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 234 OR Visiting University Student
PTX	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PTX	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
PTX	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
PTX	388	Research for Natural Sciences	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; Credit is allowed for only LSC 388 or LSC 498 (Research Fundamentals for the Natural Sciences) or ENV 388 or FOR 388 or PLB 388 or PTX 388 OR Visiting University Student
PTX	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286 OR BIO 353; LSC 347; Credit is allowed for only FOR 394 (Forensic Toxicology) or FOR 401 or PTX 401
PTX	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347; BIO 353; CHM 231 or 234; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student
PTX	450	Pharmacology & Toxicology Lab	Provides experimental and laboratory experience in conducting toxicology tests to determine the ED50 and LD50 for chemicals. Covers the pragmatic considerations of experimental design, implementation and data analysis. Experiments include whole organism tests as well as cell assays and numerical modeling experiments.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BCH 372 or BIO 354; Pre- or corequisite(s): FOR 475 or LSC 432 or LSC 475 or PTX 432 or PTX 475
PTX	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or BCH 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
PTX	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours

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PTX	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
PTX	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
PTX	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
PTX	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
PUP	190	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student
PUP	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
PUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	200	Cities in Cinema	Environmental, aesthetic, social, economic, political cultural, and other factors influencing global cities seen through films from around the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & H & G	
PUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	301	Introduction to Urban Planning	Theoretical and practical aspects of city planning. Interrelationships among physical planning, environment, government, and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
PUP	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
PUP	361	Planning Workshop	Basic site planning and design techniques. Collection and analysis of information and basic planning research. Report writing and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better; Minimum 45 hours

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PUP	362	Journey Stories	Explores journeys, storytelling and geographies—real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
PUP	363	History of Planning	Historical overview of western urban and regional planning and planning theory, focusing on the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	410	Public Participation Planning	Theory and practice of public participation in planning. Examines and critiques participation techniques and roles of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	412	History of the City	The city from its ancient origins to the present day. Emphasizes European and American cities during the last five centuries. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as analytical essays and an in-depth research paper are required in addition to regular tests and quizzes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better
PUP	420	Theory of Urban Design	Analyzes the visual and cultural aspects of urban design. Theories and techniques applied to selected study models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): PUP 301 with C or better
PUP	424	Planning Methods	Methods for urban planning research. Emphasizes research design, quantitative and qualitative methods, survey research, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	425	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better; Credit is allowed for only PUP 425 or PUP 525
PUP	430	Transport Planning/Environment	Overview of transportation planning from the perspective of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	432	Planning/Developmnt Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	434	Economic Development Planning	Provides a broad overview of urban economic development planning in the U.S. This overview includes the role and goals of economic development planning in today's global information economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L or SB	Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	436	City Structure and Planning	Political structure and organization of government as it relates to planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better
PUP	442	Environmental Planning	Environmental planning problems, including floodplains, water quality and quantity, solid and hazardous waste, air quality, landslides, and noise.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	445	Women and Environments	Examines the role women play in shaping the built environment; ways built/natural forms affect women's lives. Focuses on contemporary U.S. examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	C	Prerequisite(s): junior, senior, post-baccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or post-baccalaureate graduate
PUP	452	Ethics and Theory in Planning	Ethics and theory of professional planning practice in urban and regional communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	462	Graphic Design for Planners	Covers a synthesis of graphic design concepts for communication of complex data as well as advanced report production and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	465	Sustainable Urbanism	Examines the history, theory and practice of "sustainable urbanism," now defined by reform movements such as new urbanism, ecological urbanism, smart growth, and livable cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s) with C or better: Sustainability major in a sustainability concentration: SOS 110 or 111 or PUP 190; minimum 45 hours; All other majors: PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student

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PUP	481	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student
PUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban Planning undergraduate student
PUP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
PUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
PUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student
PUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): junior, senior, postbaccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or postbaccalaureate graduate OR Visiting University Student
PUP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
PUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
PUP	501	Planning, History and Theory	Comprehensive review of planning profession within a political, governmental, multicultural, and gender framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
PUP	510	Public Participation Planning	Explores the history, theory and practice of public participation in urban planning, including the emergence and uses of participation in the planning field; how to manage different types of processes; and the relationship between participation and social equity. Starts by addressing foundational concepts, the political context of planning, and the history of public involvement in planning decision-making. Next, delves into the process of preparing a public participation plan and explores a range of commonly used information sharing and consensus building techniques. Covers how to effectively lead public meetings and analyze information gathered. The latter part of the class focuses on special topics pertaining to public participation. These include bottom up, community-led processes, overcoming communication issues, changing opportunities for participation in the information age, engaging diverse groups, and participatory processes in the Phoenix region.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PUP 510 or PUP 598 (Public Participation Planning)
PUP	515	International Planning & Dev	Introduces globalization, international development, international planning practices and policies, urbanization and urban and regional planning in developing nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	520	Plan Practice, Ethics & Proces	Reviews past and current theoretical developments related to social change perspectives, the role and ethics of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	525	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 425 or 525

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PUP	531	Planning/Develop Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	535	Water Law and Planning	In-depth study of legal materials providing substantive knowledge of water law, water management issues, and land use planning options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 535 or GPH 535
PUP	542	Environmental Planning	Environmental policies and their relationship to environmental planning practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 442 or PUP 542
PUP	544	Urban Land Use Planning	Theory and methods of urban land use planning, including the rational planning process, comprehensive, functional, and neighborhood plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	548	Global Perspectives Urban Res	Theory and applications connecting sustainability sciences and practice to urban environmental planning. Sustainable urban development, restoration, and preservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	550	Transportation/Environment	Examines transportation planning from the perspectives of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	553	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
PUP	561	Urban Design Workshop	Workshop course focuses on applying knowledge and skills in a "real world" setting, developing meaningful planning and design proposals for existing urban areas.	N	STO	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	562	Tribal Community Planning	Study of tribal planning and best practice including underlying social, political and environmental issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	564	Transportation Systems Pro Sem	Provides a cross-disciplinary exploration of multimodal transportation systems, with particular emphasis on those issues affecting the state of Arizona. Designed for graduate students in the interdisciplinary Transportation Systems Certificate program (though open to all graduate students), the course offers a broad overview of key concepts; transportation modes (road, rail, air, transit, non-motorized); geographic settings (rural, urban, parks, tribal lands, international trade); and issues (economics, equity, planning, safety, finance, regulation, environment, public participation and alternative fuels). Features speakers from various fields and academic disciplines related to transportation, introducing a variety of perspectives, terminology and methods. Designed as a graduate-level seminar, emphasizes active participation by all students in group discussions based on required readings and information presented by guest lecturers and the instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 564 or PUP 591 (Transportation Systems Pro Sem)
PUP	565	Sustainable Urbanism	Examines the history, theory and practice of "sustainable urbanism," now defined by reform movements such as new urbanism, ecological urbanism, smart growth, and livable cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 465 or 565
PUP	571	Planning Methods I	Theory, methods, and techniques of demographic and economic analysis utilized in urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	576	GIS Workshop	GIS as a tool to address large, multifaceted problems.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 515 or PUP 576

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PUP	577	Communctn & Visualization Tools	Covers graphic and verbal skills required to effectively communicate planning information and ideas. Emphasizes digital graphics and other computer-based tools and presentation formats, focusing on applying visual strategies and tools most often used by planners to make a persuasive argument.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): degree- seeking or nondegree- seeking graduate student; PUP 570 and 571 with C or better
PUP	579	Planning Methods II	Covers key qualitative skills and techniques that planners require, including research design and the understanding of validity and reliability issues, case study research approaches, qualitative data collection strategies, and strategies for analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree- seeking graduate student; PUP 571 with C or better
PUP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	581	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree- seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581
PUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Urban/Environmntl Planning MUEP student
PUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Graduate student
PUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Pre-requisites: Urban and Environmental Planning graduate student
PUP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	642	Urbn & Regnl Economic Analysis	Land use and locational impact of economic activity and the urban real property market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree- seeking graduate student
PUP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		

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PUP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		
PUP	701	Urban Planning Colloquium	Presents and discusses new research findings and methods in urban planning.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	710	Planning Theory	Explores and critically evaluates planning theories and approaches with the objective of articulating new ideas for planning research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	724	Planning Methods	Tools useful for urban planning research; emphasis on research design and survey methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
PUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
QBA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: Graduate Students only (degree and non- degree seeking)
RDG	291	Children's Literature	Focuses on selecting and using children's literature and related nonprint media to support the elementary school curriculum. Covers the elements, genres and applications of children's literature as well as the resources available for elementary classroom teachers. Constructs criteria for the selection of trade books for educational and personal use. Also explores the role of digital media in children's literature.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
RDG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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RDG	322	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
RDG	323	Literacy Process/Content Areas	Principles and practices for planning subject matter units of instruction that explicitly address learning with texts across academic disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
RDG	413	Lang Literacy 2 in Elem Schls	Applies effective practices for literacy instruction in authentic classroom settings. Prepares teacher candidates to plan and deliver balanced literacy approaches with diagnostic assessment strategies and adaptations to support second language learners and struggling readers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
RDG	505	Lang and Lit Across Lifespan	Provides a foundational understanding of language and literacy development over the course of the lifespan. Addresses early literacy skills, decoding, comprehension, and affective factors of literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	507	Content Area Literacy	Theory, teaching strategies, and practical application concerning learning from text across subject matter disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	508	Elem Content Area Lit	Presents theory, rationale, and teaching strategies concerning learning from oral, print, and electronic texts across subject-matter disciplines. Emphasizes practical application of content area literacy principles. Familiarizes participants with the literate lives of today's youth, facilitate participants' inquiry into strategies to motivate students in content learning, and provide strategies to improve students' comprehension and application of content material. Readings, online inquiries, and assignments focus on application of course content. Emphasizes implications of recent research and theory in content literacy and adolescent literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	510	Literacies, Dig Tech, Lrning	Explores how literacies are changing as a result of emerging digital media and technologies, and the implications of these cultural and technological shifts for literacy teaching and learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	512	Theory Founds-Lang/Literacy	Introduces theoretical lenses useful in understanding issues in language and literacy education and research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	515	Mltimdl Lit for Chld & Adiscnt	Designed for classroom teachers, librarians and other interested literacy educators as part of the Masters of Arts degree in Literacy Education. Focuses on the analysis of children's, young adult and multimodal literature; understanding the modes of representation and communication used in these texts; and the various sociocultural roles these texts play in contemporary society. Provides participants with the opportunity to read, enjoy, analyze and discuss a wide variety of children's and young adult literature. Also explores numerous authors, illustrators, genres, formats and themes of children's and young adult literature.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	518	Lang & Lit for Diverse Lrnrs	Provides a foundation of theory and research related to literacy instruction for culturally and linguistically diverse learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	519	Writing Thru The Lifespan	This language and literacy course provides a foundational understanding of writing development, instruction and assessment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	520	Ess Elemnts EED Lit	Intended for practicing teachers, focuses on the development of a comprehensive approach to Reading and Writing Instruction K-8.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	530	Lit Mthd, Asst, Reflectn PreK-5	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for children in pre-kindergarten through fifth grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512

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RDG	531	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538
RDG	532	Language and Literacy II	Builds on the theoretical knowledge and pedagogical skills presented in the previous course. Uses diagnostic assessments in the planning and implementation of intervention literacy lessons for struggling readers/writers in a classroom setting as part of the course case study assignment. Includes differentiated instructional and assessment strategies to address the needs of diverse learners to include English language learners. Also includes an emphasis on writing and composition to ensure future teachers have the knowledge necessary to teach all forms of writing in the elementary classroom. Includes an overview of the historical development of children's literature and the criteria necessary for analyzing and selecting all genres of quality children's literature.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Pre- or corequisite(s): RDG 531
RDG	540	Lit Mthd, Asst, Reflectn 6-Adlt	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for adolescents (grade 6-12) and adults (age 16 and above not in K-12 setting).	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	550	Practicum Exper-Elem/Sec Read	Practicum experience utilizing assessment and instructional techniques for classroom settings. See RDG 557 for State of Arizona reading endorsement.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	555	Formal Measures of Lit	Understanding the attributes of standardized tests and applying this information to analyze, select, and explore their use.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	556	Assess/Proc-Elem/Sec Reading	Techniques for classroom and clinical reading/literacy assessment and instruction. Emphasizes continuous assessment. May be taken concurrently with RDG 550 or 557. Recommended for State of Arizona reading endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	563	Children's Literature	Selects and uses children's literature and related nonprint media to support the elementary school curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	572	Literacy Teacher Leader	Provides a foundation in educational and instructional leadership that support continuous school literacy improvement. Also provides opportunities to apply these fundamentals by creating and conducting literacy workshops/professional development for a group of teachers or other literacy educators. Meets the leadership requirement for the AZ Reading Endorsement and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Curriculum and Instruction (Literacy Education) MA student; Credit is allowed for only RDG 572 or RDG 598 (Literacy Teacher Leader)
RDG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student

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RDG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	597	Capstone	Provides a foundation in practitioner action research and literacy leadership with opportunities to apply these fundamentals by creating, conducting and researching literacy professional development for literacy educators and other community practitioners. Meets the leadership requirement for the AZ Reading Endorsement, addresses the International Literacy Association Standards for Literacy Professionals, and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		
RDG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student

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REA	380	Real Estate Fundamentals	Real estate for the student/consumer with an emphasis on the applied aspects of each area of real estate specialization. Not open to Real Estate majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA, OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	401	Real Estate Appraisal	Factors affecting the value of real estate. Theory and practice of appraising and preparation of the appraisal report. Appraisal techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey BA or BS major OR Non-Business majors; FIN 300, 302 or 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	411	Real Estate Law	Legal and ethical aspects of land ownerships, interests, transfer, finance development, and regulations of the real estate industry.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereq(s): W.P. Carey BA or BS BUS mjr or non-BUS stdnt w/ min 56 hrs & min 2.50 gpa; FIN 300, 302, or 303 or REA 380 w/ C or better OR degree- or nondegree-seeking grad stdnt; Credit allowed for only LES 411 or REL 411 OR Visiting University Student
REA	441	Real Estate Land Development	Neighborhood and city growth. Municipal planning and zoning. Development of residential, commercial, industrial, and special purpose properties.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey BA or BS Business major or non-business student with minimum 56 hours and minimum 2.50 GPA; FIN 300, 302, or 303 or REA 380 with C or better OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	456	Real Estate Investments	Analyzes investment decisions for various property types. Cash flow and rate of return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey BA or BS major OR Non-Business majors; FIN 300, 302 or 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		
REA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey BS or BA major or non-business major with minimum 56 hours and 2.50 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
REA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		
RED	501	Urban Econ & RE Dev Principles	Explores the basic principles of urban economics and their application to real estate decision making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	502	Real Est Valu-Fin & Capt Mkts	Addresses the concepts of valuation applied to real estate and teaches how to apply these principles. Intermediate- to advanced-level course in mortgage finance, and associated capital market innovations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	503	Real Estate Market Analysis	Focuses on market analysis and market data gathering methods, means, and techniques necessary in identifying market opportunities and developing specific market strategies for successful real estate development.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	504	RE Site Analy Mstr Plan Design	Analyzes the physical characteristics of a property, including the site and physical area, legal, political, economic, and financial facts that impact the highest and best use of a property and what can be built upon the property.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 504 or 591 (Real Estate Develop Principles)
RED	505	Land Use&Public Entitlement Pr	Covers a basic understanding of the legal and practical zoning and governmental land entitlement process. Examines the legal history, structure, and implications of zoning, as well as the fundamentals of "real life" situations that occur in the entitlement and real estate development field. Provides a broad overview of this process from a legal and development viewpoint, but is not intended to be a comprehensive analysis of all entitlement issues.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 505 or 591 (Mkt Segmentation/Analysis)

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RED	506	Real Estate Law for Developers	Covers the nature of property and the legal system as it relates to purchase agreements, title, surveys, declarations of covenants, defining easements, and licenses among other related topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	507	Synthesis Project #1 Residenti	Employs the students learning through application of developing a specific parcel of land.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate
RED	508	Real Estate Engineer. & Constru	Explores the basic principles of engineering and construction of real estate development projects. Reviews construction technologies within the framework of architectural design and engineering as well as construction means, methods, and systems.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	509	Adv. Fin Analy for Com RE	Teaches more complex financial analysis of income-producing property, including various decision-making tools such as Monte Carlo, option pricing, assessing alternatives, and how to build these into financial models. Also teaches financial analysis of business structures to determine potential outcomes such as debt and equity structures, waterfalls, claw backs, and other business and ownership concepts. Emphasizes strategic alternatives, assessing risk and conversion events.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	510	Re Est Devp. Bus & Proj Mgmt	Teaches management of real estate development companies and process. Students learn the various aspects of project management, financial management and project accounting, lending relations and managing loans and pay applications as well as dispute resolution and strategic partnerships.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	511	Design of the Built Environmen	Teaches the built environment and how that applies to creation of places, market positioning, capturing value and the importance of good design to the business of real estate.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 511 or 691 (Real Estate Dev Project Mgmt)
RED	512	Real Estate Law for Developers	Teaches issues faced by developers such as various types of financing structures, including special districts, TIF and bond financing. Covers issues and process of raising capital and various forms of securing equity. Discusses private placement memorandums, limited liability companies, partnerships and public private partnerships. Students also learn about environmental law, income tax issues, negotiation, and alternative dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 512 or 691 (Adv Real Estate Finance/Analys)
RED	513	Adv Real Est Engineer, Constru	Covers various construction delivery methods, construction project management and scheduling, construction contracts, mechanics and materialmans liens, and pay applications. Students also learn about sustainability and the built environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 513 or 691 (Real Estate Dev. Project Mgmt)
RED	514	Synthesis Project #2 Income Pr	Through application to a specific problem given by faculty, students work in teams to analyze and seek solutions to development of land for an income-producing property. Students investigate a specific parcel of land, performing due diligence, preparing a market and segmentation analysis, defining highest and best use(s), designing a solution, preparing residual land value analysis, defining a product offering, pricing points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Real Estate Development MRED student
RED	515	Synthesis Project #3 Capstone	Employs all that the students have learned through application to a specific problem given by faculty. Students work in a team to analyze and seek solutions to development of land for a complex, mixed-use project. Students investigate a specific parcel of land and are required to perform due diligence, prepare a market and segmentation analysis, define highest and best use(s), design a solution, prepare residual land value analysis, define a product offering, price points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	4		Pre-requisite: Master of Real Estate Development major; Credit is allowed for only RED 515 or 598 (Ret Analys; High Dens Mix Use)
RED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
RED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		

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REL	100	Religions of the World	Introduces the history of religious traditions of the world, including Buddhism, Christianity, Hinduism, Islam, Judaism, and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 100 or REL 200 OR Visiting University Student
REL	101	Religion, Culture, Public Life	Explores how religions are conditioned by cultural values and operate in the political sphere.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	
REL	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
REL	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 111 or REL 111
REL	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
REL	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
REL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
REL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	200	Exploring World's Religions	Writing-intensive course introducing analytical skills necessary for understanding religious traditions, Beliefs, practices, and communities of several religious traditions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): maximum 75 hours; Credit is allowed for only REL 100 or REL 200 OR Visiting University Student
REL	201	Religion and the Modern World	Introduces the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	
REL	202	Religion and Popular Culture	Explores various intersectors between religion and the popular media, including music, news, advertising, the visual arts, literature, performance, and film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Credit is allowed for only FMS 202 or REL 202 OR Visiting University Student
REL	203	Saints/Sins-Explore Sacred Bio	Comparison of the role of biography across religions to examine the process of categorizing people as saints or sinners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	205	Life, Sex and Death	Ways that religions have understood birth, sexuality, death, and the passing of generations. Examples from traditions throughout the world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	207	Ritual, Symbol, and Myth	Ritual, symbol, and myth as types of religious expression, with examples selected from the nonliterate religions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	
REL	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
REL	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211
REL	225	African American Religion	Introduces the history and development of the African American religious tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	

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REL	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
REL	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
REL	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
REL	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
REL	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
REL	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
REL	270	Introduction to Christianity	Beliefs, ceremonies, festivals, and institutions of Christianity, emphasizing the contemporary era. Assumes no previous knowledge about Christianity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	282	PreHispanic Native Am Wridview	Surveys cosmological traditions of indigenous civilizations on the Pre-Columbian American continents	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	287	Topics Film, Media & Religion	Explores specialized topics in the study of film, media and religion. Analyzes how religious values, identities and practices related to various cultural traditions are constructed, communicated and presented through films and media.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only FMS 287 or REL 287
REL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	300	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions) or PHI 303 or REL 300
REL	301	Comparative Mysticism	Comparative examination of Eastern and Western mystical traditions from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	307	Religion: Theory and Practice	Examines the intellectual history of academic study of religion through various theoretical approaches, major themes, and thinkers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; REL 101 with C or better OR Visiting University Student
REL	310	Western Religious Traditions	Religious traditions of Judaism, Christianity, and Islam, comparing their doctrinal, institutional, and ritual systems and social histories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours

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REL	311	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
REL	312	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
REL	313	Anti-Semitism in the Media	By examination and discussion of various media, explores the phenomenon of modern anti-Semitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better
REL	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 390 or JST 314 or PHI 390 or REL 314
REL	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 315 or REL 315 OR Visiting University Student
REL	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): minimum 45 hours. Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 or HEB 394 (Literary Readings of the Bible)
REL	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375
REL	319	Religion, Violence and America	In-depth study of ways in which religion and violence have shaped American history, culture and identity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 319 or 394 (Religion, Violence & America)
REL	320	American Religious Traditions	Examines the formation, development, and interaction of major American religious traditions (indigenous, African American, Asian American, and Euro-American).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	321	Religion in America	History of religion in America with attention to issues of historiography, pluralism, gender, race, ethnicity, politics, and social reform.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	323	African American Religion	Examines the experiences, motivations, and contributions of a number of figures associated with African American religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	324	Spirituals and the Blues	Multidisciplinary exploration of the African American religious and musical response to the North American diaspora experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	326	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only TCL 328 or REL 326 or REL 326
REL	330	Native American Worldviews	Presents worldviews through the art, architecture, writing, mythology, ritual and folklore of tribes in Native America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	331	History of Native Am Religions	Explores the role of religion in Native American history, including missionization; adaptation; and prophetic, messianic and religious revitalization movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	338	The Daoist Bible: Daode jing	At 5,000 words, the Daode Jing (Tao-te ching) is arguably the shortest religious book in the world. It is also the most widely translated, after the Christian Bible. Introduces the wisdom of the Old Boy, Laozi himself, and to some of the startlingly wide variety in which his short, gnomic utterances have been interpreted. No knowledge of Chinese required; all readings and lectures in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338, 394 (Daoist Bible: The Dao De Jing) or REL 338

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REL	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Prerequisite(s): minimum 24 hours; ENG 102, 105, or 108 with C or better; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
REL	344	Religion/Values-Japanese Life	Japanese values expressed in the life and annual cycles of the family, local and national identities, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	345	Asian Religious Traditions	Introduces the major concepts of religious beliefs, rituals, and practices in Hinduism and Buddhism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346
REL	347	Relig of India: Peace&Conflict	In-depth analysis of major Indian religious traditions in historical and contemporary context, with attention to theologies, textual genres, doctrines, rituals, political and cultural expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	348	Religion & Culture in SE Asia	In-depth study of the religious diversity of Southeast Asia including Hinduism, Buddhism, Islam, Christianity, spirit cults and ancestral religions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 294 (Southeast Asia Global Crossroads) or REL 348
REL	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
REL	350	Hinduism	Studies diverse forms of Hinduism through its institutions, literature, folklore, art, and architecture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	351	Buddhism	Doctrines, practices, and institutions of the Buddhist religion, emphasizing its role in the history and culture of Asian societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	352	Modern Buddhism	Focuses on modern issues related to Buddhism with special attention to colonialism, nationalism, the development of the nation-state and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 352 or 394 (Modern Buddhism)
REL	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieus. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
REL	355	Japanese Cities/Cultures-1800	Relations among ideas and literary, visual, and performing arts of the ancient aristocracy, medieval samurai, and early modern townspeople.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	356	Buddhism in America	Examines diverse Buddhist traditions in the U.S. among Asian-American communities and converts to this religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	357	Buddhism in S & Southeast Asia	Examines Theravada Buddhist institutions, practices, and communities in ancient and contemporary south and southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	360	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
REL	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student

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REL	362	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
REL	363	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
REL	364	Islam in Eurasia&Central Asia	Examines the changing role of Islam in Eurasia and Central Asia through history and interprets current transformations in the region.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 364 or 394 (Islam in Eurasia & Central Asia)
REL	365	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student
REL	366	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
REL	369	Women in Islam	Examines the roles women have played through Islamic history (Middle East) and the changing discourse on gender identity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	371	New Testament	Origins and literature of early Christian communities; historical investigations of the types of oral and written tradition in the New Testament.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	372	Formation/Christian Tradition	Origins, development, and expansion of Christianity; major themes and tensions from the New Testament world to the beginning of the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	374	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
REL	375	Lost Scpt Lost Christianities	Wide diversity of early Christianity and its suppressed and lost texts, which have been found in modern times.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	376	Virgin Mary:Hist,Film,&Culture	Introduces formation and development of cult of the Virgin Mary; analyzes transformations of Mariology within historical, cinematic, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; Credit is allowed for only FMS 376 or REL 376
REL	377	Religion in Russia	Examines the history of the various religious traditions of Russia and the former USSR from an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 371 or REL 377
REL	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only POS 378, REL 378 or 394 (Religion, War and Peace)
REL	379	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
REL	381	Religion and Moral Issues	Manner in which human religiousness relates to social concerns, e.g., sexuality, the environment, bioethical issues, and violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	
REL	382	Magick, Religion and Science	Relationship and conflict among magic, religion and science in the West from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours

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REL	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)
REL	385	Contemp Western Rel Thought	Introduces contemporary Jewish and Christian thought. Topics include religion and politics, problem of evil, interpretations of God, and feminist theology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	387	Rel & Confl: Theories & Cases	In-depth study of religion and conflict across multiple traditions and regions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 387 or 394 (Religion and Conflict: Theories and Cases)
REL	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
REL	389	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Erotism)
REL	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
REL	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391
REL	393	Religion and Sex	Examines what issues are involved in incorporating sexuality into religion and how/why religious traditions seek to control sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	401	Sacred Scriptures&Soc Choices	Examines relationships among contemporary moral issues and the sacred scriptures to support choices at individual, group, and public levels.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Credit is allowed for only IAS 401, MAS 598 (Sacred Scriptures & Social Choices) or REL 401
REL	405	Problems in Religious Studies	Selected topics in religious studies; involves students in research interests of instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies major; REL 307 with C or better
REL	406	Religious Studies Capstone I	Develops skills necessary for conducting and presenting in-depth research in the field of religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): Religious Studies major; REL 307 with C or better; senior standing
REL	407	Religious Studies Capstone II	Uses previously developed research to produce original research project in religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	2		Prerequisite(s): REL 406
REL	410	Judaism in Modern Times	Variety of expressions of Judaism and Jewishness in the modern period. Topics may include American Judaism or religious responses to the Holocaust.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student

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REL	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
REL	420	Religion in Amer Life/Thought	Influence of religion on American society, culture, and ideas; the distinctive character of religion in America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
REL	459	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
REL	460	Studies in Islamic Religion	Issues in the interpretation and understanding of Islamic texts, history, society, culture, and rituals. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	
REL	461	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 480 or REL 461 or SGS 442
REL	470	Religion in the Middle Ages	Religious aspects of medieval life and thought; variety of forms of dissent, heresy, and reform movements from the 4th to 13th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	471	Reformation/Mod Christianity	Protestant Reformation to contemporary Christian movements; includes factors in the dissolution of the Medieval Christian synthesis, variety of reform movements and reformation patterns, Catholic counter-reform measures, formation of liberal theology, ecumenical movement, and the World Council of Churches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	480	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L & G	Credit is allowed for only REL 480 or SGS 441
REL	483	Religion and Science	Investigates the correlation between science and religion as an interdisciplinary study from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: Minimum CUM GPA of 2.00
REL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
REL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student
REL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		
REL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
REL	501	Research Mthds-Religious Study	Explores the major themes and methods in the study of religion, with primary focus on classical texts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	502	Research Mthds-Religious Study	Explores the major themes and methods in the study of religion, with primary focus on contemporary texts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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REL	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives—whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
REL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
REL	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	603	Teaching World Religions	Seminar designed to prepare participants to teach a course similar to ASU's REL 100.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisites: Phd or Masters student in Religious Studies
REL	620	Theories: Anthropology of Rel	Premised on the study of religion as formations of discourse that are embedded in cultural contexts and histories and involve people, practices and texts. This seminar provides the literacy and competence to critically examine and be conversant in the following areas of emphasis: (1) classical and contemporary theories in the anthropology of religion; including foundational authors such as Marx, Mauss, Durkheim, Weber, Geertz, Sahlins and Tambiah, and contemporary works by Cannella, Kean, Pels, Asad, and others; (2) themes like ritual, time, practice, discourse, memory, material culture and commodification; and (3) the anthropological study of particular religious traditions, e.g., the anthropology of Buddhism, Islam or Christianity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 620 or ASB 691 (AnthroTheories of Religion) or REL 691 (Anthro of Religion) or REL 691 (AnthroTheories of Religion) or REL 691 (Theories in Anthro of Religion)
REL	621	Ethnography Theory and Methods	Ethnographic theory and method approaches to recording and studying lived cultural practice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies MA or PhD student; Credit is allowed for only REL 621 or REL 591 (Ethnography Theory and Method) or REL 691 (Ethnography Theories and Methods)
REL	626	Themes:Anthropology of Rel	Under this rubric, faculty offer seminars on thematic concerns such as: the anthropology of ritual, memory, modernity, post-colonialism, conflict and revolution, hybridity, peacemaking and secularism, semiotics, conversion, iconography, embodiment, material culture. Topics may vary depending on instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 626 or CHI 691 (Buddhism in Chinese Society) or REL 691 (Religion & Colonialism) or REL 691 (Buddhism in Chinese Society)

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REL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
REL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
REL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
ROM	101	Elem Romanian Lang & Culture I	First course in a four-semester sequence that teaches Romanian as a foreign language at ASU. Provides the development of basic speaking, listening, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of simple tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in ROM 101 if credit with C or better earned in ROM 102, ROM 201, ROM 202, ROM 313, ROM 314, ROM 411, ROM 412 OR Visiting University Student
ROM	102	Elem Romanian Lang & Cultr II	Advances the development of basic speaking, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 101 with C or better OR Visiting University Student
ROM	201	Intermediate Romanian	Continuation of ROM 101. Intensive drill of fundamentals in class and lab directed toward conversational fluency.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
ROM	202	Intermed Romanian Lang Ctr II	Second part of an intermediate-level course placing emphasis on both oral and written communication through the development of speaking, writing, reading and cultural awareness skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 201 with C or better OR Visiting University Student
ROM	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
ROM	313	Romanian Comp/Conversation	Develops skills in written Romanian and correct oral expression. Must be taken in sequence with ROM 314.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 201 OR Visiting University Student
ROM	314	Romanian Comp/Conversation	Continuation of ROM 313. Develops skills in written Romanian and correct oral expression. Must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisite: ROM 313
ROM	411	Adv Spoken&Written Romanian I	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 101 with C or better; ROM 201 with C or better; ROM 313 with C or better; ROM 314 with C or better OR Visiting University Student
ROM	412	Adv Spoken&Written Romanian II	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s) with C or better: ROM 101; ROM 201; ROM 313; ROM 314; ROM 411

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ROM	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voevode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the Wrld) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student
ROM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ROM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ROM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ROM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	101	Elementary Russian I	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Students may not enroll in RUS 101 if credit with C or better earned in RUS 102 or RUS 201 or RUS 202
RUS	102	Elementary Russian II	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): RUS 101 with C or better OR Visiting University Student
RUS	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only RUS 141 or RUS 441 or SLC 141 OR Visiting University Student
RUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	201	Intermediate Russian I	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 102 with C or better OR Visiting University Student
RUS	202	Intermediate Russian II	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 201 with C or better; Credit is allowed for only RUS 202 or RUS 295 OR Visiting University Student
RUS	211	Basic Russian Conversation I	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295 OR Visiting University Student
RUS	212	Basic Russian Conversation II	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295
RUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	295	Russian for Heritage Speakers	Heritage speakers of Russian learn to consciously analyze their passive knowledge of Russian grammar and learn grammatical analysis so that they can master advanced grammatical structures which their native Russian peers use in college-level superior proficiency discourse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Students may not enroll in RUS 295 if credit with C or better earned in RUS 202
RUS	311	Russian Comp & Conv I	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better OR Visiting University Student
RUS	312	Russian Comp & Conv II	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better

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RUS	322	Scandals and Scoundrels 19th C	An in-depth study of the Golden Age of Russian literature, including novels of Pushkin, Lermontov, Gogol, Khvoshchinskaia, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
RUS	323	Russian Lit and Revolutn 20thC	An in-depth study of 20th-Century Russian prose and poetry by Zinovieva-Annibal, Gorky, Bely, Babel, Mayakovsky, Platonov, Pasternak, Erofeev, Petrushevskaia, and other writers. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Pre-requisites: ENG 102, 105 or 108; Credit is allowed for only RUS or SLC 323
RUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	411	Adv Comp/Conversation I	Improves aural discrimination and self-expression in oral and written skills, emphasizing vocabulary building. Subject materials drawn from current post-Soviet-Russian publications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better OR Visiting University Student
RUS	412	Adv Comp/Conversation II	See RUS 411.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better
RUS	421	Pushkin	Pushkin's poetry, plays, and prose fiction, including Eugene Oegin, The Little Tragedies, Tales of Belkin, Queen of Spades and The Captain's Daughter. Taught in English. Does not satisfy the Liberal Arts and Sciences language requirement for BA degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	
RUS	423	Dostoevsky and Tolstoy	An in-depth study of Dostoevsky's and Tolstoy's major works, including "Crime and Punishment", "Brothers Karamazov", and "Ana Karenina". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
RUS	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425
RUS	430	Russian Short Story	Detailed study of representative works of the Russian short story genre. Includes authors from both Imperial and Soviet Russia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): RUS 312 with C or better
RUS	439	Vladimir Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Priglasenie (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)
RUS	440	Russian Mass Media	Explores various aspects of modern Russian life through printed mass media, especially Internet media sources, and helps to develop advanced spoken, listening, reading and written skills in Russian. Students work with live television news broadcasts and investigate the most important general sources of electronic information, including electronic newspapers and the main Russian Web sites on a wide range of issues such as culture and the arts, government and politics, business and economics, armed conflicts, and accidents and catastrophes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 211 with C or better; RUS 212 with C or better. Credit is allowed for only RUS 440 or RUS 494 (Russian Mass Media) OR Visiting University Student
RUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
RUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
RUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
RUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
RUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SAO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	196	Study Abroad Office Placeholder	Reserved for undergraduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated by SAO following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 12 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to an ASU Study Abroad Office program is required.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		
SAO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	596	Study Abroad Placeholder	Reserved for graduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 9 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to a Study Abroad program is required.	N	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		
SBS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	200	Intro to Soc & Behavioral Sci	Overview of the social and behavioral sciences, indicating their contributions to society and emphasizing interdisciplinary integration	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
SBS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	300	Careers in Psychology	Professional and academic careers in psychology, with a focus on both career and adult development. Provides opportunities to enhance self-assessment and evaluation strategies for both academic planning and postbaccalaureate professional pursuits while also addressing current issues that affect us at any stage of development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SBS	301	Cultural Diversity	Critical analysis of the complexities of the cultural politics of difference in the contemporary United States. Through interdisciplinary and comparative study, examines a range of theoretical and public/popular cultural discourses about the cultural contributions, experiences, perspectives of, by, and about U.S. residents of diverse racial, ethnic, class, gender, sexual, and transnational origins or identities. Analyzes the social conditions and historical precedents that have shaped current diversity concepts and debates, deepening knowledge and understanding of multiple perspectives on these issues and their relevance to social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	(L or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
SBS	302	Qualitative Methods	Basic methodological issues in the systematic application of qualitative analysis of human social life. Surveys range of qualitative methods used by social and behavioral scientists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	303	Quantitative Methods	Concepts underlying design and implementation of quantitative research methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	304	Social Statistics I	Statistical techniques of the social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	
SBS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)
SBS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339
SBS	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
SBS	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SBS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB, POS, SBS or SOC 374
SBS	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SBS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	404	Social Statistics II: Multivar	Analysis of variance, multiple regression, dummy variable regression, path analysis, and related topics. Computer application to problem solving.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	Prerequisite(s): SBS 303 with C or better; SBS 304 with C or better
SBS	447	Citizenship/Nationalism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
SBS	450	Topics in Local/Global	Examines links among social, political, economic changes at local, national, global levels. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	

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SBS	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
SBS	460	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over "global cities" anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
SBS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
SBS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		
SBS	490	Senior Thesis I	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. First part of a six-semester-hour sequence, followed by SBS 491.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	491	Senior Thesis II	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. Second part of a six-semester-hour sequence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): Barrett Honors student
SBS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6	L	Prerequisite(s): Barrett Honors student
SBS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-7	L	
SBS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-3		
SBS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SCM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	300	Global Supply Operations	Explores modern global integrated supply chain management. Covers traditional supply chain topics such as procurement, inventory management, operations, quality management, customer service, performance management and analytics, logistics and transportation. Also discusses issues related to sustainability, humanitarian logistics, ethical business practices and supply chain analytics in the context of evolving supply chains around the world. Students discover how business processes, performance metrics and modern supply chain IT tools aid in the management and growth of effective and efficient supply chains.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prereq(s) w/ C or better: BUS, Engr Mgmt, or non-BUS major w/ min 2.50 GPA; ACC 231, 232, or 261; ECN 221, ECN 231, or IEE 380; MAT 211, 266, or 271; Pre- or corequisite(s): ACC 241, 242, or 271 w/ C or better if completed OR Visiting University Student

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SCM	303	Honors Global Supply Operation	Provides an overview of supply chain management, specifically for Barrett Honors students. Explains principles and concepts from a managerial perspective and how they are used for decision making. Course topics include supply management, operations management and logistics management as applied to a supply chain system. Discusses planning, forecasting, performance measurement and improvement, and collaboration from the perspective of providing excellent customer service. Current topics of interest include the impact of sustainability, security and globalization on managing today's supply chains with an emphasis on supply chain technology. Class methodology focuses on an open-forum discussion of principles and a detailed analysis of case studies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; Barrett Honors student; ECN 221 or 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271
SCM	314	Analytics for Logistics	Focuses on practical tools and technology for real-world decision making, financial and performance analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	315	Business Decision Models	Covers quantitative tools used to aid decision making in supply chain management. Focuses on analytics using technology and software to include Tableau and Microsoft Excel. Other topics include the use of tools in performance management, project management and supply chain finance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 300 or 303 with C or better OR Visiting University Student
SCM	344	Applied Logistics Management	Presents a synthesis of the principles in global logistics (and supply chain) emphasizing the operation and integration of activities such as transportation, inventory, warehousing, facility location, customer service, packaging and materials handling. Examines applicable technology supporting each activity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre- or corequisite(s): SCM 314 with C or better if completed OR Visiting University Student
SCM	345	Logistics Management	Provides a deep analysis of many logistics services to include: global logistics, customer service and order management, distribution/fulfillment operations, demand and inventory planning and management, network analysis and design, and transportation operations, carrier selection, costing and negotiation. In addition, reviews current logistics technology process support and integration, as well as how emerging technology is changing the future of logistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; Pre- or corequisite(s): SCM 315 with C or better if completed OR Visiting University Student
SCM	354	Procurement of Services	Discusses management of the supply function for logistics-based organizations. Allows students to better understand the nature of procuring a service, contracting that service and establishing appropriate performance metrics. Also focuses on supply chain finance, performance management and analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 300 or 303 with C or better OR Visiting University Student
SCM	355	Supply Management	Discusses management of the supply function, including organization, procedures, supplier selection, quality, inventory decisions and price determination. Students also review project management and governance, supply chain strategy and change management.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM or SOS 385 OR Visiting University Student
SCM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	432	Control Sys-Supply Chain Mgmt	Covers processes essential to the determination and direction of the flow of resources needed to produce goods and services. Uses Microsoft Excel for supporting analysis. Includes processes, methods, technology and financial impact to forecast, manage inventory, plan needed capacity, determine resources needed for production, determine priority and sequencing of activities, perform master scheduling and material requirements planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 315 with C or better; SCM 345 with C or better; Pre- or corequisite(s): SCM 355 OR Visiting University Student

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SCM	440	Quality Management/Measurement	Provides a broad introduction to quality management frameworks and tools, with an emphasis on supply chain and operations management issues. Introduces modern quality management approaches including Total Quality Management, Lean and Six Sigma. Students learn how to define quality for a product or service, develop appropriate measurement systems, and apply statistical and systems thinking to control and improve the underlying processes. Covers quality awards and performance excellence programs and quality management systems such as the ISO 9000 family of standards.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Business (Retail Management) BA or Supply Chain Management BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	445	Advanced Logistics Management	Logistics processes account for approximately 8% of U.S. GDP; therefore, the efficient and effective execution of these processes is critical to supply chain managers in corporations, government entities and nonprofit organizations. Includes an overview of the processes involved to include customer service, performance management, analytics, technology and supply chain strategy. Includes a survey of the institutions and players in the processes, and the analytical tools to evaluate their efficiency and effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 344 with C or better OR Visiting University Student
SCM	455	Research and Negotiation	Supply management ensures an organization has resources (i.e., materials, services, equipment) to deliver on promises to stakeholders. This happens by strategically designing supply systems for categories of spend and creating favorable supply agreements. A real-world class project and a real-time contract negotiation simulation helps students understand (1) the relationship among organizational, supply management and purchase category objectives; (2) frameworks and tools to analyze the supply conditions of a category, specifically spend analysis, market/demand analysis and price/cost analysis; (3) how to develop category strategies to ensure adequate and highest value resource supply into the future; (4) the translation of category strategies into manageable supply contracts; and (5) the requisite skills and processes for planning and executing successful contract negotiations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 355 with C or better OR Visiting University Student
SCM	463	Global Supply Chain Management	With increased globalization and offshore sourcing, global supply chain management is becoming an important issue for many businesses. Like traditional supply chain management, the underlying factors behind the trend are reducing the costs of procurement and decreasing the risks related to purchasing activities. The big difference is that global supply chain management involves a company's worldwide interests and suppliers rather than simply a local or national orientation. Enables students to appreciate the challenges of operating supply chains across international boundaries including how to manage various salient issues including sociocultural, economic, technological and political factors that may shape decisions relating to sourcing and moving goods and services across different geographical boundaries.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	G	Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	479	Supply Chain Strategy	Discusses supply chain strategy at the strategic level and from a systems point of view in an open-forum and detailed analysis of case studies. Students work in teams to investigate and report on key supply chain functions, drivers and metrics within an integrated system to include network design, innovation, technology enablement, customer service, sustainability, coordination and management of the critical areas of the supply chain. Includes additional focus on project management, corporate social responsibility and governance and financial implications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 355 with C or better; SCM 432 with C or better OR Visiting University Student
SCM	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SCM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-6		Prerequisite(s): Barrett Honors student

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SCM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-6	L	Prerequisite(s): Barrett Honors student
SCM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): minimum 60 hours OR Visiting University Student
SCM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-7		
SCM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-3		
SCM	501	Basics of Ops & Supply Mgmt	This contemporary class explores basic operations and supply chain management topics, including process analysis, managing waiting lines, inventory, quality and general supply chain issues and concepts. Designed for students with limited business experience and without an undergraduate supply chain degree to set a foundation of understanding.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): degree-seeking graduate student
SCM	502	Operations & Supply Chain Mgmt	Explores supply chain management topics including environmental, project and supply chain processes. Additionally, covers processes in the areas of new product introduction development; quality control; TQM (Total Quality Mgt).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey MBA students
SCM	515	Decision Mod-Supply Chain Mgmt	Covers decision modeling approaches for supply chain management such as optimization, simulation and decision analysis. Focuses on technology enablement, performance management and analytics, and strategy change and management. Emphasizes modeling using spreadsheet-oriented approaches. Additionally, focuses on financial spreadsheet analysis and its use in optimization.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): SCM 516 with C or better
SCM	516	Descriptv&Predctv Sup Chn Anlyt	Provides a solid foundation and deeper understanding of the use of quantitative modeling tools and techniques to solve problems faced in modern supply chains. Uses Excel workbooks to implement the appropriate quantitative methods, including forecasting demand, capacity planning of a manufacturing line and the line cycle time as it pertains to parts inventory management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey graduate student
SCM	517	Data-Driven Quality Management	Addresses the use of analytics tools and techniques to enhance the ability of quality management approaches to improve processes. Introduces modern quality management approaches including six sigma and design for six sigma. Covers the define, measure, analyze, improve and control (DMAIC) improvement cycle; the core process used to drive six sigma projects. DMAIC refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. Provides an analytics roadmap to help users work through the DMAIC problem-solving process.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): Business Analytics MS student
SCM	518	Analytical Decision Modeling I	Explains the skills and knowledge necessary for mastery of the use of quantitative modeling tools and techniques to support a variety of business decisions. Also explores deterministic optimization techniques, including linear programming, nonlinear programming, integer programming, network models and a brief introduction to metaheuristics. Covers the use of these models for a variety of common business problems. Practical application of these models uses Excel and standalone software. Also studies how to ensure that these solutions work in a wide variety of situations (what-if analysis).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): Business Analytics MS student
SCM	519	Analytical Decision Model II	Addresses the skills and knowledge necessary to model situations where uncertainty is an important factor. Covers models including decision trees, queuing theory, Monte Carlo simulation, discrete event simulation and stochastic optimization. Uses these models for a variety of common business problems and requires implementation of these models using Excel and standalone software. Studies how to ensure that these solutions work in a wide variety of situations (what-if analysis). Describes each of these methods in detail.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): Business Analytics MS student

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SCM	520	Strategic Procurement	Applies principles, philosophies and processes of supply management to facilitate the continuous improvement and strategic design of an organization's supply management system on a global basis. Focuses on topics like performance management and analytics, project management and governance and finance. Provides a comprehensive understanding of supply management and its impact on the organization.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 502 with C or better
SCM	521	Supply Management/Negotiation	Explores the supply management process of selecting, developing and executing of appropriate sourcing strategies and processes. Covers the importance of driving cost, quality and relationship management, as well as organizational change impacts on supply management of a business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): SCM 520
SCM	532	Supply Chain Cost/Design Issue	Strategic design and development of supply chains. Focus on cost-management tools applied to supply chain design and supplier management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	541	Logistics in the Supply Chain	Covers theories and practices of modern logistics management within a market-driven supply chain. Begins with an outline of reasons why some operations are not efficient, then introduces management tools to improve efficiency and responsiveness followed by application of analytical tools to evaluate the current logistic management practices. Topics include logistics strategy, demand management, distribution and warehouse management, distribution/warehouse design and location decisions, transportation and delivery frequency, reverse logistics, humanitarian logistics and responsive supply chains.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey degree-seeking graduate student
SCM	542	Lgstr, Glob, & Econ Developmnt	Global trade, global networks and the influence those networks have on economic development worldwide. Exposes geographic, economic and sociopolitical perspectives on these issues and invites students to draw conclusions from an increasingly informed perspective.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502 and 541; Co-requisite: SCM 515
SCM	545	Cases in Global Logistics	Capstone experience for students in the MS in Global Logistics program. Synthesizes learnings from previous courses and applies this learning to specific issues that have a major global logistics component.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502, 515, 541 and 542
SCM	551	Operations Planning/Execution	Studies management of the conversion of raw materials to finished goods including scheduling, work-in-process inventory management, and postponement/customization. Students gain a deeper understanding of the integrated supply chain of plan, source, make, deliver and return.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	581	Mgmt of Technology/Innovation	Technology life cycles, technology forecasting, new product development process, innovation teams, innovation best practices.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		
SCM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	587	Project Management	Provides a comprehensive understanding of project management with particular focus on planning, scheduling and control of business processes. Emphasizes understanding team dynamics and risk analysis, as well as program management tools, governance and enabling of technology to drive supply chain processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): W. P. Carey graduate student

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SCM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	N	Z3	W. P. Carey School of Business	Department of Supply Chain Management	1		
SCM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCN	201	Discovering Deserts of the SW	Introduces deserts of the Southwest. Explores the Southwest desert flora, fauna and geology with particular focus on the Sonoran Desert. Introduces desert habitats, identification of local animals and plants, ecology and adaptations of desert organisms, desert climates and geographical features and human cultures and impacts. This lab course requires field experiences.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		
SCN	205	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Credit is allowed for only SCN 205 or SCN 305 or SCN 505 or SCN 294 (Costa Rican Language, Culture, Society) or SCN 294 (Tropical Ecosystems of Costa Rica)
SCN	207	Introduction to Biomimicry	Foundational course that introduces everyone, no matter their discipline or background, to the emerging field of biomimicry. Biomimicry is the practice of looking to nature for strategies to solve human challenges. We are living in a time when scientists and researchers are finding sustainable solutions to solve local and global challenges by looking to nature and imitating how nature solves similar challenges. Get inspired and look at the world through a whole new lens—one inspired by nature!	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		
SCN	208	Intro Urban&Environmental Stu	This introductory course to environmental studies and urban environmental practices identifies and explores some of the pressing questions in the field regarding complex environmental problems and solutions. Explores social science and humanities approaches to environmental issues and addresses environmental practices that foster individual and community well-being, environmental quality in cities and urban sustainability. Focuses on issues that include global warming, consumerism, biodiversity conservation and energy reform.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Credit is allowed for only SCN 208 or SCN 294 (The Exploration of Environmental Studies)
SCN	209	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SCN	250	Physical Science by Inquiry	Laboratory-based development of concepts and reasoning skills in the physical sciences. Emphasizes open-ended investigations, dialogues between the instructor and individual students, and small group discussions. Helps students think of physical science as an active process of discovery in which they can participate. Helps preservice teachers understand inquiry and develop inquiry skills. Liberal arts students gain experience in the scientific process. Useful for students who wish to improve their science preparation before taking further science courses. Forms foundation for scientific literacy.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SQ	Credit is allowed for only SCN 250 or 294 (Physical Science by Inquiry)
SCN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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SCN	300	Found. of Environ. Ed	Introduces environmental education, including the philosophy, historical development, resource identification, curriculum development, field trips and other activities designed to provide the structure and development of the field of environmental education. Explores the antecedents to the present-day field and connects the field of environmental education to curricular programs that are an outgrowth of perceived and actual need in the field of environmental education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
SCN	301	Ecol & Nat Hist Sonoran Desert	Overview of the plants, animals, and geology of the desert ecosystem based on the Arizona K-12 Science Standards. Provides students with basic knowledge of the Sonoran Desert characteristics and its relationship to the total school curriculum.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG	Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	302	Environmental Education	Ignites questions, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of environmental education, experiential education and place-based education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
SCN	303	Environmental Ed Internship	Provides opportunities to learn more about natural sciences and local history; outdoor education and field trip course facilitation and training; individual and group development; facility care and maintenance including landscaping, gardening and carpentry; and the restoration and maintenance of the grounds and teaching materials. Supports and/or develops education projects and programs as outlined by the locations' Educational Outreach office. Various other tasks include: field trip coordination, development of curriculum and classroom materials, hands-on fieldwork, school outreach, off-site outreach events support, and Outdoor Education event support.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): minimum 45 hours
SCN	304	Sonoran Desert Flora: The Life	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SCN	305	Tropical Ecology:Cultural Exch	To better understand the astonishing diversity of tropical ecosystems. Investigates the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing. Introduces language, culture and society of people and communities in tropical countries of Central and South America. Also examines cultural perspectives and beliefs. Focuses on four areas: (1) background on history and present day society of Central or South America, introductory conversational Spanish for interacting with Central and South Americans; (2) living in Central and South America, community, family and education; visiting families and private and public schools; (3) debriefing and reflecting on Central and South America language and culture and (4) the location of Central and South America countries, the rain forests' impact on the world, climate, cultures and contributions to science.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 305 or SCN 494 (Tropical Ecosystems of Costa Rica)
SCN	307	Lrnng frm Ntre: Biomcry & STEM	Introduces biomimicry, an emerging discipline that seeks to learn from nature to solve human problems. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land around, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 307 or SCN 494 (Learning from Nature: Biomimicry & STEM) OR Visiting University Student

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SCN	308	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Provides opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists students in becoming more sensitive to and aware of earth systems and environmental change. Also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	309	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	310	Biodiversity Conserv:Education	The world is in a period of unprecedented environmental change. Examines the causes and consequences of one of the most prominent forms of change in the modern era--changes in biological diversity. Explores the scientific evidence that shows how and why Earth's biological resources are being altered, how these changes impact ecosystems and the benefits various ecosystems provide to society. Describes the social and economic consequences of biodiversity loss and understands current management strategies used to curb changes in our planet's biological resources.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 310 or SCN 294 (Biodiversity Conservation) or SCN 494 (Biodiversity Conservation) OR Visiting University Student
SCN	311	Nature Mindfully	Provides an opportunity for students to do in-depth exploration of the reciprocal relationship between human beings and the natural world. Introduces students to what is currently meant by the term ecopsychology, which studies the relationship between human beings and the natural world through ecological and psychological principles. Participants cultivate the knowledge and skills to integrate mindfulness-based best practices with natural settings. As a species, we came of age with nature, and a need for nature still resides within the architecture of our bodies and minds. Abundant research demonstrates physical and psychological benefits of interacting with nature.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SCN	400	Sustainabl for Sci Teacher	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Seeks sustainable solutions through science, technology and society acting at global and local levels. Covers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions. Focuses on how to teach sustainability concepts in the K-8 classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
SCN	401	SustainabilitySci,Tech&Society	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Prepares students to think and engage critically with the world around them. Seeks sustainable solutions through science, technology and society acting at global and local levels. Uncovers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student; minimum junior standing; Credit is allowed for only SCN 400 or SCN 401 or SCN 494 (Sustainability Science, Technology, and Society) OR Visiting University Student
SCN	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
SCN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SCN	501	Ecol & Nat Hist Sonoran Desert	Gives students an opportunity to study the common plants and animals of the southwest Sonoran Desert. Study also includes their distribution, adaptations, behavior and ecology. Also includes the physical geography and geology of the region.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SCN	502	Outdoor Education	Ignites question, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of outdoor, experiential education and place-based education.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	504	Sonoran Desert Flora	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	505	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	507	Lrnng frm Ntre: Biomcry & STEM	Offers an introduction to biomimicry, an emerging discipline that seeks to learn from nature to solve human problem. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	508	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Gives students an opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists in becoming more sensitive to and aware of earth systems and environmental change and also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	509	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SDO	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	501	US Law & Legal Analysis-Master	Introduces the U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete extensive written legal analysis exercises, draft case briefs and complete discussion board posts critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Laws LLM or Legal Studies MLS or Legal Studies (Patent Practice) MLS student; Credit is allowed for only SDO 501 or SDO 598 (US Law & Legal Analysis-Masters)
SDO	503	Prof Writing and Communication	Communication and writing strategies, techniques and genres for use in professional business environments. Presents techniques for crafting and using appropriate workplace grammar and spelling; written structure for memos, emails, reports and presentations; and communication style in a professional setting. Students practice and refine oral communication and interpersonal business communication skills.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 503 or SDO 598 (Prof Writing & Comm-Masters)

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SDO	510	Business Organization: Masters	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies and corporations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Laws LLM or Legal Studies MLS or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit is allowed for only SDO 510 or SDO 598 (Business Organizations-Mast)
SDO	511	Admin Agencies/Reg: Masters	Begins with an accelerated introduction to federal administrative agencies, the sources and boundaries of their authority, and options for redress for parties aggrieved by administrative actions. Also briefly examines state administrative agencies in the same light.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies (Patent Prac) or Law LLM stndt; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 511 or SDO 598 (Admin Agencies & Reg - Masters)
SDO	515	Criminal Law: Masters	Reviews and analyzes different principles of the fundamentals of criminal law, including: the principles of punishment, burdens of proof, actus reus (acts and omissions), mens rea (mental states), presumptions, causation, strict liability, defenses and homicide	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies (Patent Practice) or Law LLM student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 515 or SDO 598 (Criminal Law- Masters)
SDO	516	Criminal Procedure: Masters	Consider the basic principles of criminal procedure and the methods by which the criminal justice system functions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies(Patent Practice) or Law LLM student; Pre- or corequisite(s):SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 516 or SDO 598 (Criminal Procedure-Masters)
SDO	518	Fund of Contract Law: Masters	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 518 or SDO 598 (Fundamentals of Contract Law-Masters)
SDO	525	Tort Law: Masters	High-level introduction to torts. Covers various types of tort causes of action, their various elements, defenses and factual patterns that fit those specific tort causes of action.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 525 or SDO 598 (Tort Law - Masters)
SDO	529	US Constitutional Law: Masters	Surveys the law surrounding the allocation of governmental power between federal, state and tribal governments and the distribution of governmental authority within the federal government. It is a pervasive subject in the sense that such constitutional questions can emerge in such disparate areas of legal practice as immigration, corporations and securities, family law, criminal law, banking and insurance. Deals with individual rights protected by the U.S. Constitution. Specific areas include due process, freedom of expression and religion, and equal protection.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies (Patent Practice) or Law LLM student; Pre- or corequisite(s):SDO 501 or SDO 598(US Law/Legal Analysis-Masters); Credit is allowed for only SDO 529 or SDO 598(US Constitutional Law-Masters)
SDO	531	Employment Law: Masters	Covers employment law topics including testing, privacy, FLSA, benefits, rights to compensation, workplace emotional injuries, termination, and employer risk management strategies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 531 or SDO 598 (Employment Law - Masters)

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SDO	535	Negotiation: Masters	Offers a basic introduction to the concepts, instruments, functions and theories of modern negotiation giving students some of the information needed to better understand the dynamics of interpersonal, business and legally related negotiation. Begins with a discussion of negotiations as interpersonal communication. Examines avoiding exploitation in mixed-motive exchanges. Explores distributive bargaining strengths and weaknesses. Examines the use of integrative bargaining techniques and those settings in which they might be best used. Finally, reviews the landscape of legal jurisprudence in order to apply appropriate ideologies and techniques to the complex adaptive system of American business and personal interaction in the shadow of the law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies (Patent Practice), or Master of Laws student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 535 or SDO 598 (Negotiation-Master)
SDO	541	HR & Employment Law: Masters	Provides an introduction to the management of human resources, in an overview perspective. Students also gain a general understanding of the fundamentals of human resource management and employment laws and policies, and how they apply to organizations. Topics covered are: compensation and benefits, staffing, training and development, performance appraisals, organizational management, policy and maintaining effective relationships with employees. Exposes students to the dynamics of how the human resource department and the company strategically work together to balance employee morale and return on investment. Initiates a well-rounded learning experience of HRM and the effects on business operations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Law LLM, Legal Study MLS, or Legal Study (Pat Pract) MLS stndt; Pre- or corequisite(s): SDO 501 or 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for SDO 541 or LAW 598 (HR & Employment Law) or SDO 598 (HR & Employment Law - Mstrs)
SDO	542	Regulation of Small Businesses	Introduces the wide array of regulations that businesses must navigate, (licensure, taxation, insurance and employment rules as well as other laws and regulations triggered by commerce). Additionally, provides a background into the agencies that create and enforce many of the regulations that impact small business and the legal basis for their ability to do so.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 542 or SDO 598 (Regulation of Small Businesses)
SDO	543	Business Relationships: Masters	Introduces the legal frameworks that impact how business and individuals work together to achieve business and individual goals. Topics covered include contracts, strategic partnerships, IP licensing arrangements, franchising, and others.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 543 or SDO 598 (Business Relationships)
SDO	544	Evidence: Masters	Focuses on the principles and practices governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 531 or SDO 598 (Evidence - Masters)
SDO	545	Arbitration: Masters	Focuses upon the law, policy and practices relating to arbitration process, using a third-party neutral to render a decision for disputing parties, as it is utilized in consumer and commercial sectors. The class will focus on the Federal Arbitration Act, important policy implications of arbitration, and issues that organizations and individuals should consider when both contemplating entering an arbitration agreement and participating in an arbitration process.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies(Patent Practice) or Law LLM student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 545 or SDO 598 (Arbitration - Masters)
SDO	546	Mediation: Masters	Studies the process in which a trained neutral third party assists others in resolving a dispute or planning a transaction. Trains students in basic mediation skills through readings, lectures, video demonstrations and simulations, and discussions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Legal Studies, Master of Legal Studies (Patent Practice) or Law LLM student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 546 or SDO 598 (Mediation-Masters)

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SDO	547	Land Use Regulation: Masters	Surveys modern land use planning with an emphasis on the legal framework used to resolve conflicting land uses	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 547 or SDO 598 (Land Use Regulation-Masters)
SDO	548	Water Law: Masters	Provides an introductory survey of the fundamental concepts underlying water law, as well as the necessary legal foundation for understanding sustainable water policy and management.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 548 or SDO 598 (Water Law - Masters)
SDO	549	Family Law: Masters	Primarily focuses on the law of marriage and divorce including the law governing entry into marriage, the legal consequences of being married, and the dissolution of the marital status. Topics include: the law of marriage, child custody, child support, alimony, division of property, the rights and obligations of unmarried cohabitants, and the establishment of paternity rights and obligations. In addition, touches upon issues of domestic violence, child abuse and neglect and assisted reproductive technologies. Relevant Arizona Statutes are referred to throughout the course where appropriate as examples, but the course is not limited to Arizona law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 549 or SDO 598 (Family Law-Masters)
SDO	551	Duties,Obligation and Rights	Examines the fundamental employee rights and employer obligations established by federal law and encompasses an examination of the National Labor Relations Act; the Worker Adjustment and Retraining Notification Act; the Equal Pay Act; the Occupational Safety and Health Administration; Worker's Compensation; the Family Medical Leave Act; the Pregnancy Discrimination Act; and the Genetic Information Nondiscrimination Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 551 or SDO 598 (Duties, Oblig & Rts in Workplace-Mstrs)
SDO	552	Employ Discrimination: Masters	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 552 or SDO 598 (Employment Discrimination - Masters)
SDO	555	Pro Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry at the professional level, from both a legal and a business perspective. Exposes students to professional sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 555 or SDO 598 (Professional Sports Law - Masters)
SDO	556	Sports Analytics: Masters	Allows students to develop and apply analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 556 or SDO 598 (Sports Analytics - Masters)
SDO	557	Sport Business Strategy:Master	Explores the sports business ecosystem and the various stakeholders who play a role in sports business. Beyond stakeholders, the course discusses the various applications within sports business from marketing to venues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 557 or SDO 598 (Sports Business Strategy - Masters)

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SDO	558	Copyright Law: Masters	Includes topics such as copyright bundle of rights, registration, remedies, fair use, work made for hire contracts, licensing and assignments.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 558 or SDO 598 (Copyright Law - Masters)
SDO	559	Trademark Law: Masters	Trademark law is indisputably the most fun area of the law. This course covers, from a practical perspective, the basis and use of the trademark system; the requirements for, process of obtaining, opposing and enforcing trademarks and related rights; and the overlapping federal, state and common law rights and doctrines involved in trademark and unfair competition law including cybersquatting, false advertising and the right of publicity.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Pract) MLS student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 559 or SDO 598 (Trademark & Unfair Competition Law-Mstrs)
SDO	566	Adv Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry, at all levels. Exposes students to professional, amateur and international sports law issues, examining those issues in a problem-focused manner. A variety of industry professionals give the lectures, and each section focuses on a specific topic within the realm of sports. The requirements of the course are designed to challenge the students.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Pract) MLS; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Anlyns); Credit allowed for only SDO 559 or LAW 598 (Adv Topics in Sprts Law) or SDO 598 (Adv Topics in Sprts Law)
SDO	567	Adv Criminal Law: Masters	Considers principles of criminal procedure with analytical emphasis on the right to counsel during trial, appellate and post-conviction proceedings. Also examines developments in the criminal justice system derived from the study of wrongful convictions during the Innocence Era. Students read portions of a summary treatise relevant to specific subject areas of criminal law and procedure, case law, law review articles, periodicals and case materials.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Law LLM, Legal Study MLS, or Legal Study (Pat Pract) MLS stldnt; SDO 515 or 598 (Crim Law-Mstrs); Pre- or corequisite(s): SDO 501 or 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for SDO 567 or SDO 598 (Adv. Top in Crim Law-Mstrs)
SDO	568	Leg Princ/Bus Pract: Masters	Survey course covers various substantive topics with a focus on applying the basic legal principles covered via court decisions and other reading assignments. Requires a basic understanding of "black letter law," but this is not a course that asks MLS students to provide the same level of nuanced legal analysis as would be asked of law students. Instead, merging business acumen and legal analysis is valued above a depth of legal understanding.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): MLS, MLS (Patent Practice), or LLM student; Pre- or corequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 568 or SDO 598 (Integ Leg Principles & Busi Practices - Masters)
SDO	569	Adv HR & Employment Law:Master	Covers the laws that govern the rights and duties between employers and employees. Goes beyond knowledge of the law and focuses on the application of the legal knowledge to scenarios HR professionals encounter in both the private and public sector.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Laws LLM, Legal Studies MLS, or Legal Studies (Patent Pract) MLS; SDO 552 or 598 (Employment Law); Pre- or corequisite(s): SDO 501 or 598 (US Law/Legal Anlyns); Credit is allowed for only SDO 569 or SDO 598 (Adv Topics in HR & Employ Law)
SDO	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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SDO	598	Special Topics	Typical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Legal Studies student
SDO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Legal Studies student
SDO	701	Contract Review/Structure:Mast	Helps students learn how to work with contracts by exploring the general parts of a contract, the purposes of contracts, and reviewing contracts with an eye on supporting business interests. Although students learn some drafting techniques, the focus of the course is not on drafting entire contracts from scratch. Rather, students learn how to review contracts within a specific framework and recognize how contract language affects a party's legal rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); LAW 515 or SDO 518; Credit is allowed for only SDO 701 or SDO 598 (Contract Review & Structure for Prof - Masters)
SEC	501	Solar Engr Commercialization I	Examines the fundamentals of the solar energy enterprise regarded from a systems engineering perspective. Examines solar energy technology, economic issues and policy matters and reviews the impact of these three areas on the design process and system operation of photovoltaic systems at the residential and commercial scales. Objectives include learning the basic principles in photovoltaic system design; thinking critically and seriously about the nature of solar energy and its use; formulating views and insights regarding energy resources, conservation, photovoltaic economics, government subsidies; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SEC 501 or SEC 598 (PV Systems Engineering)
SEC	502	Solar Engr CommercializationII	Examines the fundamentals of the solar energy enterprise at the utility scale--the components, the design process, the economic issues, and the policy matters in large-scale photovoltaic systems--in both the design of these systems (both central plant and aggregated forms) and their interface with the existing (and future) electrical grid. The course educational Objectives include: learning the principles in utility-scale photovoltaic system design; thinking critically and seriously about the interaction of photovoltaic systems with the national grid; formulating views and insights regarding energy resources, conservation, economics, government incentives, and so on, at the utility scale; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): SEC 501; Credit is allowed for only SEC 502 or SEC 598 (Solar Commercialization)
SEC	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
SEC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	588	Solar Energy Colloquium	Discussion-oriented class focusing on topical issues in solar energy. Knowledge of thermodynamics or electric power systems is recommended to succeed in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisites: Graduate Engineering major; credit is allowed for only MAE 588 or SEC 588
SEC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SEC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		
SEC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		
SED	111	Exploration Science Teaching	General overview of the profession of the science educator with a look at student, teachers, curricula, and classroom techniques.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SED	322	Classroom Leadership/Sec Schls	Theories and practices for managing and maintaining secondary classrooms for learning; strategies for home/school communication; and leadership roles for teachers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program OR Visiting University Student
SED	396	Clinical Experience I	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	397	Clinical Experience II	Applies course content in a middle/secondary school setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-1		Prerequisite(s): admission to the Professional Program
SED	398	Clinical Experience	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
SED	403	SED PrinciplesCurriculumMethod	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in the secondary school. Requires observation/participation.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; minimum junior standing
SED	464	Middle-School Curr/Org	Educational implications of the characteristics of a diverse adolescent population on middle-level organization and components, curriculum, instructional strategies, assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	478	Student Teaching: SED 6-12	Student teaching in middle/secondary setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
SED	480	Spec Mthds Teaching Soc Studie	Interdisciplinary approaches; production and collection of materials.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	481	English Teach Methods/Sec Schl	Instructional, organizational, and presentation methods for English in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	482	Science Teaching Methods	Methods of instruction, organization, and assessment of science for secondary and middle grade schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SED	496	Clinical Experience III	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	501	Intro to Effective Instruction	Introductory course for certification program in secondary education. Emphasizes developing basic classroom management, instruction, and evaluation. Includes a field assignment of at least 120 hours.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	511	Eng/LA Tchng Mthds For Sec Sch	Instructional, organizational, and presentation methods. This course, which focuses on the general content and pedagogy of Secondary English/Language Arts, is aligned directly with the State of Arizona Professional Teaching Standards and NCTE standards for teaching secondary English.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): enrolled in the MAC or InMAC program
SED	512	Math Tchng Mthds For Sec Sch	Examines secondary school curricular material and analyzes instructional devices. Teaching strategies, evaluative techniques, diagnosis, and remediation and problem solving.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): enrolled in the MAC or InMAC program
SED	513	Sci Tchng Methods For Sec Sch	Methods of instruction, organization, and assessment of science for secondary and middle grade schools.This course, which focuses on the general content and pedagogy of secondary science, is aligned directly with the State of Arizona Professional Teaching Standards and INTASC Principals.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): enrolled in the MAC or InMAC program
SED	520	Sci Mthds Early Adolescence	Examines the interrelationships between theory and practice in teaching science.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SED	522	Second Schl Curriculum Develop	Social processes, issues, principles, patterns, and procedures in curriculum development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
SED	533	Mid/Sec Instr, Mgmt & Assess	Analyses of procedures, methods, techniques, and experiments in teaching in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Must be a graduate student
SED	544	Creating Classroom Climates	Emphasizes classroom management and instructional strategies for establishing positive classroom climates that facilitate learning. Includes field experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	547	Teaching Math-Middle Grades	Strategies and methodologies to teach mathematics in the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	560	Teaching Math with Technology	Strategies and methodologies to teach mathematics with technology, focusing mainly on the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	561	Teaching Sci with Technology	Strategies and methodologies for effective technology-enhanced science classrooms and improved learning. Models student-driven inquiry teaching throughout the course.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	567	Clinical Experience I	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	576	Clinical Experience II	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	578	Student Teaching: Secondary Ed	Student teaching in middle/secondary setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	579	Apprentice Teaching: SED 6-12	Apprentice teaching in secondary school classrooms. Synthesized experience in classroom management, curriculum, instruction and assessment. Must be taken four times for a total of 12 semester hours.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: postbaccalaureate undergraduate or graduate student (degree seeking or nondegree seeking)
SER	100	Object-Oriented Software Dev	Introduces problem solving with a state-of-the-art programming language. Expressions, statements, basic control flow and methods. Data, data aggregation and usage. Uses a structured personal software development process to implement solutions representative of common computing applications. Uses development kits for some course activities.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		
SER	101	Programming for IFT	Introduces problem solving with a state-of-the-art programming language. Expressions, statements, basic control flow and methods. Data, data aggregation and usage. Uses a structured personal software development process to implement solutions representative of common computing applications. Students create several small programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		
SER	200	Core Data Strs w/OOP	Design, implementation and use of core data structures; object-oriented software development: design, analysis and programming.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 100 or SER 100 with C or better; Credit is allowed for only ACO 102 or CSE 205 or CST 200 or SER 200
SER	215	Software Enterprise: Pers Proc	Software engineering; personal software processes for individual professionalism; time and defect estimation, yield, and productivity. Software tools. Project based.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better
SER	216	Software Enterpr:PersProc&Qual	Introduces software engineering, software lifecycle models, personal software processes for individual professionalism, time and defect estimation, yield and productivity, software testing and quality management.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Pre- or corequisite(s): SER 222 with C or better if completed OR Visiting University Student
SER	221	Pgmng Lang & Their Exec Envt	Introduces the fundamental programming language concepts of data, type, control, abstraction, and structure; software development and execution environments; programming language paradigms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better; Credit is allowed for only CST 220 or SER 221
SER	222	Dsgn & Analy: Data Strs & Algo	Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; MAT 243 or 300 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Master of Computer Science student OR Visiting University Student

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SER	232	Computer Systems Fundamentals	Logic design, number systems and arithmetic, Boolean algebra, digital systems components and hardware description languages.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	CS	Pre- or coreqs: SER 100 or CSE 110; MAT 117, 170, 171, 210, 251, 265, or 270 with C or better if completed or Math Placement Test score of 50% or higher or ALEKS score of 61 or higher; Credit allowed for CST 150 or SER 232 OR Visiting University Student
SER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	315	Software Enterprise: Dsgn&Proc	Software process from the design perspective. Engineering design process, user-centered design and software safety design. User interface, software architecture and design patterns and software design constraints.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 222 with C or better; Pre- or corequisite(s): FSE 100 with C or better if completed; SER 216 with C or better if completed OR Visiting University Student
SER	316	Software Enterprise: Cnstrct	Best practices in software construction in the context of a team project, including refactoring, defensive programming, unit testing, and configuration and release management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 216 with C or better; SER 222 with C or better OR Visiting University Student
SER	321	Software Systems	Design and implementation of distributed software components; process and memory management underlying software applications; sockets, protocols, threads, XML, serialization, reflection, security, and events.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Pre- or corequisite(s): SER 334 with C or better if completed; Credit is allowed for only CST 420 or SER 321 OR Visiting University Student
SER	322	Database Management	Fundamental methods in modeling and managing data-oriented systems. Relational, object, and hierarchical data modeling techniques. Query languages including SQL. Semantics of transaction processing. Database system architectures including cloud-based, client-server, and embedded databases. Security and privacy issues. Modern trends in data management including managing data on the cloud, unstructured data type management, data mining, and business analytics, and NoSQL data management platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 433 (or CST 433) or SER 322 OR Visiting University Student
SER	332	Intro Graphics & Game Devel	Foundations of graphics as used in modern rendering and basic principles of the game development pipeline. Graphics and math concepts and their application in games, graphics and visualization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better
SER	334	Operating Systems&System Prog	Fundamentals of operating systems: run-time environments, process management, scheduling, synchronization techniques, memory management and file management. Introduces programming concepts and tools for developing operating system modules, system utilities and low-level applications in POSIX environments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 with C or better; Pre- or corequisite(s): SER 222 with C or better if completed OR Software Engineering MS or Master of Computer Science student OR Visiting University Student
SER	335	Engin Secure Software Systems	Software engineering principles applied to securing software systems. Software life cycle processes contextualized to security needs of software. Software requirements analysis and software verification and validation practices for security. Software architecture security assessment. Software engineering organization policies for security, including threat modeling and assessment, vulnerability classification, risk management, and preparing for security audits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 216 with C or better; Corequisite(s): SER 315; SER 334
SER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	401	Computing Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better; senior standing or postbaccalaureate
SER	402	Computing Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 401 with C or better
SER	415	Software Enterprise: Inception	Third course in the four-course enterprise sequence. Students perform inception (project launch) and elaboration (requirements analysis) activities in project teams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	L	Prerequisite(s): Software Engineering BS major; SER 315 with C or better OR Visiting University Student
SER	416	Software Enterprise: Proj&Proc	Project-centric course focusing on applying software process, project management, and technical leadership. Final course in the software enterprise sequence.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better

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SER	421	Web-Based Applications	Distributed Web applications, their design, architecture and supporting technologies; user-interaction concepts and technologies; design and implementation of software servers for Web systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	422	Web Application Programming	Design and implementation of Web application. Languages, frameworks, technologies, tools and methods used to realize Web client and server solutions. Approaches for securing, testing as well as determining the quality and reliability of Web applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): IFT 433 or SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	423	Mobile Systems	Mobile applications, their architecture, design, and supporting technologies; mobile device operating systems and frameworks; synchronizing mobile applications, support for inter-application data-exchange; accessing and manipulating special-purpose device capability such as location, orientation and input modality. Practices for securing mobile runtimes and optimizing run-time performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Visiting University Student
SER	431	Advanced Graphics	Topics in real-time rendering and graphics hardware. Uses graphics processing unit hardware to implement rendering of higher-order surfaces and special effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	432	Game Engine Architecture	Functional requirements of a modern game engine architecture. Students work in teams to develop advanced features for a game engine.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	450	Computer Architecture	Price/performance analysis, instruction set design, RISC/CISC, processor design and implementation, pipelining, instruction-level parallelism, memory hierarchy, storage and I/O systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 or SER 250 with C or better OR Software Engineering graduate student
SER	456	Embedded Infr:Snrs&Actuators	Electromechanical sensors and electrical actuators, analog-to-digital and digital-to-analog conversion, hardware and software interfaces for embedded systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; SER 232 with C or better OR Software Engineering MS student; Credit is allowed for only SER 456 or CST 598 (Embedded Interfaces: Sensors and Actuators) OR Visiting University Student
SER	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stdnt; Credit allowed for CSE 460/SER 460 OR Visiting University Student
SER	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Cltr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grad st; Crdt only CSE 463 or SER 463 OR Visiting University Student
SER	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/C or better: Comp Sci or Comp Sys Eng mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stdnt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsm&Tstng) or SER 464 OR Visiting University Student
SER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		
SER	486	Embedded C Programming	Programming concepts for embedded systems. Interfacing and controlling LED, LCD, keypads, buttons. Embedded OS concepts. Timers and interrupts. Serial communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6		Prerequisite(s): Barrett Honors student
SER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6	L	Prerequisite(s): Barrett Honors student

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SER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): SER 334 with C or better OR Visiting University Student
SER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-3		
SER	501	Adv Data Struct and Algorithms	Advanced algorithms and how they are effectively applied to solve problems. Algorithm design, analysis, classification, optimization, and application. Practice implementing and employing algorithms to solve realistic problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	502	Languages and Prog Paradigms	Emerging programming languages, their design, description, implementation, and advanced features; API design, including facilities for creating secure distributed applications, facilities supporting software services, naming and composition; language paradigms and the resulting implications on execution; run-time systems and storage management; approaches to compilation and execution. Requires ability to program in an object-oriented programming language and knowledge of data structures, algorithms, and analysis.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	515	Foundations of Software Engin	Software engineering overview, with an emphasis on component and service-based architectures, reliability, safety, dependability and software reuse. Introduces software engineering research methods and critical inquiry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS graduate student
SER	516	Software Agility	Focuses on quality software construction principles in an agile community context. Agile methods, open source communities, coding best practices, configuration management, software delivery and building in quality.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student
SER	517	Software Factory I	First in a two-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, and Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Masters of Computing Studies or Software Engineering MS student
SER	518	Software Factory II	Second in a two-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, and Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 517
SER	531	Semantic Web Engineering	State-of-the-art semantics-based approaches and tools that can be leveraged to enrich and enhance today's big data. Covers approaches to ontology engineering, searching and filtering relevant information, representing big data, modern applications of these methods and techniques for Web-based intelligent applications and services. Discusses applications of semantic technology that could improve the processing of big data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only SER 594 (Semantic Web) or CST 594 (Semantic Web) or SER 531
SER	533	Database-Centric Enter App Dev	Solutions for enterprise software systems based on relational database technology. Persistence solutions in middleware frameworks. O/R, XML, and scalability issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	540	Internet-Enabled Embedded Dev	Accessing hardware devices through Internet, including Applets, HTTP, custom byte streams, XML-RPC, SOAP. Building network-based applications that interface hardware.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	554	Distributed Computing	Topics in distributed systems, including communications, distributed operating systems, fault-tolerance, and performance issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	574	Adv Software Design	Presents some of the latest advancements in the area of software design and architecture, aiming to help students develop analytical thinking skills which are essential to a successful career in software engineering. Modeling has become the primary communication vehicle in many areas of software engineering, and particularly in the intersection of software and systems engineering. Presents different approaches to software modeling and design for applications in systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student; SER 515 with C or better; Credit is allowed for only SER 574 or SER 594 (Advanced Software Design)

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SER	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
SER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Software Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	100	Introduction to Exploration	Science and engineering of Earth, solar system, and space exploration. Experimental design, engineering design; teaming; the professions of science and engineering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): Mathematics Placement Test with a score of 50% or higher, or ALEKS score of 61 or higher, or Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
SES	106	Habitable Worlds	Are we alone in the Universe? If so, why? If not, where are our cosmic cousins? Such questions, once the domain of science fiction, are on the verge of being answered with science facts. Astronomers are discovering planets around other stars. Planetary scientists are exploring the worlds in our solar system. Biologists are unlocking the secrets of metabolism and evolution. Geoscientists are determining how the Earth supports life. And as we struggle to build a sustainable future for ourselves, all of us are finding out how technologically advanced civilizations rise and how they might fall. This course surveys these topics. In the process, students master basic concepts from across the major areas of science and learn what makes the Earth a habitable world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
SES	121	Earth, Solar System & Universe	The Earth, solar system and universe are diverse and dynamic, featuring galaxies, solar systems, suns, planets and moons. Each type of feature is characterized by a suite of processes and features, such as volcanoes, landslides and climate. As scientists and engineers, we want to understand what is going on in our world. Understanding past events helps begin to predict future events. With the Earth, we examine past events and current natural processes to understand how this past and these processes affect humans. Accordingly, this course examines the processes, materials and features observed and inferred on the Earth, in the Solar System, and in the Universe. The course is purposely designed to be rather holistic, exploring concepts from stellar evolution, atmosphere and oceans on Earth and in extraterrestrial objects, plate tectonics, volcanoes and mountain building. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SES	122	History of Earth&Solar System	The Earth and solar system have a long and interesting history, spanning nearly five billion years. Earth and other objects in the solar system have evolved over time, punctuated by a series of events, such as mountain building, volcanic eruptions, impacts and extinctions. As scientists and engineers, we want to understand what events have occurred in our world and which aspects directly affect us or are most interesting. Understanding past events helps us comprehend what has happened and begin to predict future events. With the Earth, examines past events and current natural processes to understand how this past and these processes affect humans. Accordingly, examines the history of the Earth and solar system in the context of the processes, materials and features that can be observed and inferred. Explores the history of the Earth and solar system from a broad, interdisciplinary, perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	123	Earth,Solar Sys & Universe Lab	Studies astronomical and geological processes through observations and measurements. Requires field trips and evening telescopic observing. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Pre- or corequisite(s): SES 121 with C or better if completed OR Visiting University Student
SES	124	History Earth&Solar System Lab	Studies astronomical and geological processes and life through observations and measurements. Requires field trips and evening telescopic observing.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 122 with C or better if completed
SES	126	Exploration of the Universe	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. Don't be surprised if class includes stories about how ASU research is proceeding, or how a lesson in class is relevant to some research experience. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
SES	128	Expl of the Universe Lab	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 126 with C or better if completed
SES	141	Energy in Everyday Life	Energy is a concept that threads throughout science and engineering and is at the heart of understanding how the world around us works. What is energy? How is energy used in biological, chemical, electrical, mechanical, nuclear systems that impacts our daily lives? What would our world be like if there was a nearly infinite supply of inexpensive energy? Serves the needs of undergraduate students and future K-8 teachers of mastering basic concepts of energy generation, delivery, conversion, efficiency and what makes energy universal. This transdisciplinary online survey course helps students understand concepts and develop skills that crosscut scientific disciplines, such as the ability to observe, think critically and gather data to make order-of-magnitude estimates.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only SES 141 or SES 194 (Energy in Everyday Life) OR Visiting University Student
SES	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
SES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		

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SES	220	Biology of a Changing Earth	Offers a broad survey of basic biological principles, with an emphasis on aspects of biology that are particularly important in the context of interdisciplinary Earth and environmental sciences. Explores how life on Earth has emerged and diversified and how the ubiquity of this life affects the Earth's chemistry, land surface and climate. As many of our current environmental issues are a direct consequence of human impacts on organismal physiology, biodiversity patterns, or ecosystem processes, strongly focuses on application of biological knowledge. Includes weekly laboratory exercises.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	225	Global Biogeochemical Cycles	Exposes students to the coupled biogeochemical cycles that link Earth's biosphere, hydrosphere, atmosphere and lithosphere. These cycles operate at the very long time-scales that stabilize Earth's climate and the very short time-scales that support the biosphere. Explores processes and changes through time and the human influence on these systems. Topics include: the rock cycle and the hydrologic cycle; biogeochemical systems; carbon, nutrient and oxygen cycles; global climate change; human forcing on the ecosphere; and future climate scenarios. Strongly emphasizes developing an understanding of the complex interactions among different systems and processes. Specific student interests inform some of the topics covered, and participation in the discussions and analyses are crucial to the success of this class. Develops understanding through readings, class discussion, in-class problem solving, written projects and student presentations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): CHM 101, 113, or 114 with C or better if completed
SES	230	Coding for Exploration	A series of lectures and computer labs on data processing and analysis in Earth and space sciences using Python. Introduces programming with scratch and python. Numerical methods for data analytics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): AST 111 or GLG 101 or SES 121 with C or better; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
SES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	307	SpaceWorks I: Dsgn Mdl Bld Tst	Provides an introduction to: (1) project design and fabrication, including the application of SolidWorks, training and use of the ASU Student Machine Shop, and the implementation of a project from prototype through completion within a dedicated maker space; (2) analytical modeling and its application to planetary exploration; (3) space mission design and implementation; and (4) leadership training, including project organization, schedules, budgets and proposal writing. A key element includes interacting with and learning from engineers and scientists working on space projects.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre- or corequisite(s): MAT 265 or 270 with C or better if completed; Credit is allowed for only SES 307 or SES 394 (ASU SpaceWorks Project Level 1:Applied Design...) OR Visiting University Student
SES	311	Essentials of Astrobiology	Origin and evolution of life on Earth. Strategies to explore for life in the cosmos. Possible field trips to explore regional geological analogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 181 (188), CHM 113 or PHY 121; MAT 265 or 270
SES	330	Electronics Instrumentation	Applied principles of electronics and mechanical design as used by the modern instrument builder, using a systematic approach to the design process: Identify a scientific problem, develop specifications necessary to solve the problem, develop a prototype solution, test solution for plausibility, break down problem into components, design and build the solution then test in a relevant environment. Builds on introduction to circuits and engineering concepts from prerequisite courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4		Prerequisite(s): EEE 202 with C or better; MAE 201 or 212 with C or better; PHY 131 and 132 with C or better (or PHY 151 with C or better) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SES	350	Eng Syst & Exper Problem Solv	Introduces integration of scientific and engineering computational methods into scientific research and successful exploration. Provides an active, project-based environment for learning science and engineering by means of a common set of computational tools. Also provides a detailed overview of procedural and object-oriented programming with an emphasis on problem solving. Students solve problems by developing software in an interpreted language (Python). Problems may include visualizing data, interfacing with hardware, or solving numeric problems. Covers procedural programming concepts including data types, variables, control structures, arrays, and data I/O. Covers object-oriented programming concepts including object creation and use, object interaction, and the design of simple classes. Covers software engineering concepts including testing, incremental development, understanding requirements, and teamwork.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 267, 272, or 275 with C or better; PHY 131; PHY 132 (OR PHY 151) with C or better OR Visiting University Student
SES	376	Comm Astro & Planet Sci I	Develops science communication writing skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces the characteristics of written science communication and public engagement within the context of astronomical and planetary sciences to include investigations into the ethics of science communication. Students gain proficiencies in science communication writing, visual data production and various digital technologies through relevant, project-based assignments, digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student
SES	377	Comm Astro & Planet Sci II	Develops science communication oral skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces a variety of techniques for producing and presenting effective oral science presentations within the context of astronomy and planetary sciences. Students gain proficiencies in public speaking, visual data production and various digital technologies through relevant, project-based assignments, including digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better; SES 376 with C or better OR Visiting University Student
SES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	401	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. Also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SES	405	Explo Systems Engineering	Provides an introduction to systems engineering with an emphasis on the following topics: the systems engineering process, requirements, design fundamentals, subsystem fundamentals, trade studies, integration, technical reviews, case studies and ethics. Prepares the student for the capstone spacecraft/mission design course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
SES	407	Space Works II: Mdl Fabr & Tst	Provides students with: (1) experience in complex project design and fabrication, including the application of NX software for thermal and structural modeling, use of the ASU Student Machine Shop, and the testing of a team project within space-like conditions; (2) training in clean room protocol; (3) electrostatic discharge training; and (4) preparation of a Preliminary Design Review document which includes a team presentation. A key element includes interacting with and learning from engineers and scientists working on space projects.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 307 completed two times with C or better; Credit is allowed for only SES 407 or SES 494 (ASU SpaceWorks Project Level 2-Model, Fab, Test)
SES	410	Senior Exploration Project I	Design and development of an Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107; minimum senior standing OR Visiting University Student
SES	411	Senior Exploration Project II	Continuation of SES 410. Development of Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisites: ENG 101, ENG 105 or ENG 107; SES 410

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SES	480	Teaching Earth & Space Science	Provides a practical review and active exploration of educational research and theory, published and online resources, and best practices, to inform effective teaching of the Earth and space sciences at the high school and undergraduate levels.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; AST 111, AST 112, GLG 101, GLG 102, GLG 108, GLG 110, SES 106, SES 121, or SES 122 with C or better; Credit is allowed for only SES 480 or SES 494/GLG 490 (Teaching Earth and Space Science)
SES	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): minimum 45 hours
SES	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
SES	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student
SES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		Prerequisite(s): minimum 45 hours
SES	501	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. It also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 500 or SES 501
SES	502	Exploring SESE Research	Weekly series of talks by faculty in the School of Earth and Space Exploration (SESE) about their current research.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 591 (Faculty Research Seminar) or SES 502
SES	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
SES	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SES	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SFS	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SFS	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SFS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SFS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	
SFS	560	Tools and Tactics	Reviews competing theories, models and analytical frameworks for understanding the policy-making process. Provides advanced knowledge of the tools and strategies necessary to achieve food policy reform.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 561
SFS	561	Food and Farm Immersion	Exposes students to farmers, ranchers and supply chain businesses that are the focus of, or are otherwise directly impacted by, food and agriculture policies and programs.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 560
SFS	562	Managing Resources Food Proc	Highlights the relevance of natural resource conservation for ensuring healthy agricultural, food and environmental systems, as well as the various approaches to achieving sustainable systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SFS 560; Corequisite(s): SFS 563
SFS	563	Applied Food Policy Immersion	Intensive seminar on leadership reviews leadership theories, builds leadership skills, and engages students in question-and-answer sessions with food policy leaders from a variety of sectors on the ASU campus and across Metro-DC.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; Corequisite(s): SFS 562
SFS	564	American Agr in Global Context	American agriculture both impacts, and is impacted by, the production and demands of other countries. Considers global food trends, global food policy governance regimes and institutions, and explores current controversies.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; SFS 562

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SFS	565	Organizational Leadership	Culminating research-based class organizes students into small teams and chooses a topic from a list of contemporary policy controversies provided by the professor. Class work requires original research, creation of policy solutions, and development of strategies to achieve proposed solutions. Each team produces a professional report to be broadly shared with sustainable food system advocates. The professional report is expected to advance food policy knowledge generally and provide certificate graduates visibility to highlight their accumulated skills. Organizes assignments so that students have individual assignments that must be completed and submitted for individual grades. Teamwork is also a highly valued skill for leaders and for this reason, a component of a student's grade is based on the final team report and presentation.	N	PRA	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student, SFS 560, SFS 563; Pre- or corequisite(s): SFS 564
SFS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRO	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	596	Capstone	Required capstone where students conduct research and write a professional report of publishable quality based on the research.	N	LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainable Food Systems MS student
SFS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	101	Think Global-Individ&Authority	Examines the changing notions of the individual and authority over history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student
SGS	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
SGS	111	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
SGS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	203	Contemporary Global Trends	Gives a grounding in patterns of international politics and global social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
SGS	204	Prof Global Career Development	Orients the student to working in global contexts and to thinking critically about careers in the global arena. Focuses on working in organizational settings distinctly global. Three modules: nation-state, corporations, and working international organizations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
SGS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
SGS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	301	Principles of Global Studies	Presents current debates about globalization and subjects these to critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student

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SGS	303	Global Trends	Analyzes the process of globalization across boundaries through the investigation of the determinants and ramifications of globalization from the vantage of modern social sciences. Students are expected to conduct and articulate independent critical analyses toward a more in-depth understanding of this social phenomena, global history, and particularly the global economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	304	Cross-Cultural Awareness	Addresses the theory and practice of studying, working and/or living in cultures other than your own, and focuses on cultural preparation to learn successfully in diverse cultures. Develops an awareness of intercultural sensitivity and recognizes its value, gains specific intercultural competencies (as defined within the course), and enables students to better understand their own culture so they can understand their host culture at a more meaningful level. Because of the variety of locations where students study or intern, focuses on culture-general skills, not culture-specific ones. Students also gain career development skills to prepare them to apply to study abroad programs and related scholarships, and guidance on how to best utilize international experiences for maximum benefit and long-term career planning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 304 or SGS 394 (Cross-Cultural Awareness) or SGS 394 (Foundations of Cross-Cultural Awareness) OR Visiting University Student
SGS	305	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
SGS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SGS	320	Mechanisms Global Governance	One of the fundamental issues in the social sciences concerns the problematic attainment of social order, which is the principal aim of governance. Presents the five principal mechanisms purported to account for social order, and illustrates these by providing empirical examples of each; includes film clips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	321	Int'l Insts & Global Gov	Provides an in-depth examination as to how the international community organizes itself, through international institutions, to deal with serious international issues, and how the institutions of international governance can be improved. Studies diverse examples of international institutions primarily from the perspective of international relations (IR) theory and the role of international law (IL).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	323	International Development	Provides an introduction to the theories underlying international development and the remaining challenges facing academics, researchers, and policymakers in solving issues contributing to global poverty. Gives an overview of the state of the world, illustrating how indicators of economic growth and well-being are unequally distributed across countries. Conceptualizes the leading factors believed to drive these patterns and discusses the historical approaches to solving these problems. Gives particular attention to examples of policies and development strategies that either strengthened or weakened economies in the past. Second half of the course details current factors that continue to threaten development, such as poor health and education practices, limitations in agricultural growth and food security, and heightened risk due to climate change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SGS 323 or SGS 394 (International Development) or SOS 394 (International Development)
SGS	324	Negotiating Global Trade	Practical aspects of global trade including historic background, negotiations, supply chain, global terms, transportation, chartering, marine insurance, international arbitration, foreign exchange, letters of credit, barter, ethics, leadership, networking, country analysis and introduction to global management theories.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or junior standing; Credit is allowed for only SGS 324 or SGS 394 (Global Trade in Real Time) or SGS 394 (Global Negotiations)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SGS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SGS	330	Globalization and Environment	Assesses the impact of globalization on the earth's environment. Examines such issues as biodiversity loss to pollution to urbanization to climate change, among others, and assess how globalization has driven, impacted or improved these environmental problems. Emphasis on understanding the social, political and economic factors that have contributed to global environmental change and the degree to which globalization processes are something "new", as well as on examining the ability of communities, nations and transnational institutions to manage these global problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	340	Violence Conflict Human Rights	Interdisciplinary examination of the evolution and role of human rights in global society. Major themes include the political struggles over enforcement of human rights and curtailment of violence against individuals. Pays close attention to the role of non-governmental organizations and diplomacy in advancing human rights norms and also examines America's role in human rights, both at home and abroad. Focuses on the causes and effects of violence and human rights abuses in the context of torture, the "war on terror," and crimes against humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	341	Humanitarian Crisis&Intl Intrv	Focuses on political, legal, and ethical issues raised by decision about military interventions in genocide and humanitarian crisis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	343	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
SGS	344	Facing the Past: Truth, Memory	The past has never been so present as it is today. Over the last two decades, the world has shown an increasing interest in uncovering the hidden and forgotten histories of state-sponsored atrocities and acknowledging the fate of victims and survivors. Studies this movement for the recovery of truth, memory, and moral responsibility includes a wide range of actors and takes a number of different forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	350	Economic Dev & Globalization	Major issues and models in economic development. Studies development policy and foreign aid practiced since the 1970s and recent critique of these practices. Analyzes the mistakes made in the last 40 years, and potential for improving the practice of foreign aid. Contemporary issues in development economics, including the impacts of bad governance, foreign aid, corruption, war, military intervention and democracy on economic growth with emphasis on policy evaluations in health, education, microfinance and monitoring corruption.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	360	Cultural Aspects Globalization	Cultural aspects of globalization, starting with a theoretical discussion of what culture is and then weaving this discussion into an empirical examination of UNESCO's World Heritage program as a practical means of studying the role of culture in globalization. A number of questions guide our inquiry: What is culture? What forms does it take? Can culture be preserved? If so, what are the consequences? How is the UNESCO World Heritage Program structured? How does it conceive culture? What is its understanding of the global and the role of the local in it?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	361	World Society	Studies global processes by conceptualizing the world as a world society. This means that globalization is not just people being more interconnected enabling faster interactions. It suggests that interactions and institutions throughout the world are increasingly part of a whole, of a global consciousness, and while boundaries such as national boundaries are important, they do not delimit "society." The global is not just what is outside of national society or beyond the nation-state: it also constitutes what is inside the nation-state.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 361 or SGS 394 (World Society)

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SGS	366	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
SGS	370	Geopolitics	Geopolitics is a field that deals with war, conflict and the politics of animosity and violence. It calls special attention to the distribution of power on a global scale, and to the spatial scales at which power, authority and control operate. At one time, this involved studying how various "great powers" and "wise men" carved up the world according to their goals and interests. But power is everywhere! To name only a few examples, it is present in the ways that NGOs operate in conflict zones, in global health advocacy and awareness, in media coverage of distant catastrophes and seemingly immanent risks, and in disaster management and emergency response plans. Scholars in this field study topics such as war, diplomacy, conflict, migration, religious strife, terrorism and similar fields.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or minimum junior standing; Credit is allowed for only SGS 370 or SGS 394 (Global Geopolitics) OR Visiting University Student
SGS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
SGS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
SGS	381	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
SGS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
SGS	441	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L & G	Credit is allowed for only REL 480 or SGS 441
SGS	442	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
SGS	454	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	Prerequisite(s): WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development)
SGS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
SGS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
SGS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student
SGS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7		

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SGS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	501	Global Theory	Examines theoretical and analytical frameworks employed by institutions to frame action related to increased global uncertainty including economic, sociological, psychological, decision theory, gaming and institutional behavior frameworks. Uses case studies in key global issue areas such as climate change/natural hazards, energy security, urbanization, food security, security, failed states.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	502	Global Institutions and Actors	Examines key types of global institutions, (1) multinational businesses, e.g., Toyota, (2) international development organizations, e.g., the World Bank, and (3) voluntary organizations, e.g., the Red Cross/Crescent, in terms of the roles that they play in shaping localized outcomes. Using case studies, explores the impact of international actors in terms of the power and influence that they exert through international treaties, standards, information diffusion, influence on local governments and other organizations, dissemination of international "best practice."	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	503	Global Decision Making Methods	Examines and critically assesses approaches and methods used in decision making and planning under uncertainty in global contexts, e.g., scenarios, SWOT, risk analysis, contingency planning, gaming, economic forecasting, anticipation-foresight techniques, decision making under complex conditions, and rapid assessment techniques. Explores the strengths and weaknesses of different approaches under varying conditions, synergies achievable through application of multiple methodologies, and normative assumptions underlying various methodologies. Students gain "hands-on" experience in the use of a variety of techniques through assignments based on real-world situations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 504
SGS	504	Indiv Decis Mak CCultur Contx	Focuses on the role of the individual decision maker in cross-cultural contexts, acting in the context of globally engaged institutions. The individual is virtually always embedded in an institutional environment whether as manager, planner, advocate, frequently acting as part of a team. It is recognized that the various agents/stakeholders involved in addressing an issue, negotiating a deal, in a global context, almost invariably hold significantly different worldviews, cultural norms and decision-making styles. Deals with the individual decision maker in both public and private decision-making milieus. Discusses modes of intervention and initiative. Addresses issues of leadership, reconciliation of different decision-making modes, and acting effectively in cross-cultural environments. Emphasizes decision making under high uncertainty, using case studies, e.g., pending nationalizations or privatization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503
SGS	505	Global Field Preparation	Prepares students for the global field project. In addition to scheduled classes, each student meets with her/his advisor at regular intervals during the semester to prepare for the Global Field Project. During the semester, students prepare a work plan for their Global Field Project, including objectives of the exercise, specifications of deliverables. Network building is an important secondary objective, and development of an esprit de corps among Global Studies masters students.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503; SGS 504
SHS	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		
SHS	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
SHS	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student

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SHS	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student
SHS	205	Exploring Comm Disorders	Introduces hearing, language, and speech problems in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
SHS	230	Peering into the Human Brain	An introductory look into the cognitive and language functions of the human brain, and the resulting behavioral consequences of injury, disease and disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4	SG	
SHS	250	Introduction to Phonetics	Introduces English phonetics with emphasis on phonetic transcription, articulation, phonology, and disorders of speech.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	300	Foundations of Rehab Sciences	Provides a foundation to rehabilitation science and covers an overview of rehabilitation professions and work settings including acute care, rehabilitation centers, long-term care facilities and in-home services. Also provides an introduction to clinical methods, patient privacy and professional ethics as well as an overview of rehabilitation process and continuum for children and adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	310	Anatomical/Physio Bases Speech	Noncadaveric study of anatomical systems that underlie human speech and language, including respiration, phonation, articulation, and related nervous system processes.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; SHS 250 with C or better OR Visiting University Student
SHS	311	Hearing Science	Studies the physical characteristics of sound and of the structure and function of the human auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PHY 101 with C or better OR PHY 111 and 113 with C or better OR Visiting University Student
SHS	340	Chronic Illness/Disability/Env	Over a billion people worldwide are estimated to live with some form of disability; however, disability is diverse in its association with chronic health conditions. Individuals with disabilities are vulnerable to deficiencies in health and social services. Depending on the group and setting, persons with disabilities may experience greater vulnerability to chronic illness, co-morbid conditions, age-related conditions, engaging in health risk behaviors and higher rates of premature death. Provide an overview of disability groups and the associated health conditions that impact their lives as well as discussion of the barriers to health care including health care costs, availability of services and physical barriers in the community.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	360	Rehab Children/Adolesc in Ed	Gives an overview of habilitation services for children from early intervention through adolescence in terms of physical, occupational and speech therapy, as well as other support services and their role with early intervention, educational settings, pediatric rehabilitation contexts.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	367	Language Science	Psychological processes, linguistic principles and social influences relating to language and communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	375	Speech Science	Normative aspects of speech, hearing, and language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 250 with C or better; Pre- or corequisite(s): SHS 310 with C or better if completed OR Visiting University Student
SHS	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
SHS	401	Principles of Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or SHS 501 or Visiting University Student
SHS	402	Clinic Mthds/Treat Comm Disord	Principles and techniques for planning speech and language intervention, including observation experiences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech-Language Pathology Assistant certificate student OR SHS 250; SHS 465 OR Visiting University Student

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SHS	461	Accent Modification	Increases speech intelligibility in non-native English speakers by changing their English pronunciation skills. International students learn the pronunciation of American English vowels and consonants, intonation and stress patterns, and rhythm of speech. Conducts pre- and post-assessments of the students' intelligibility to determine the need for improvement on specific sounds and speech patterns.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	465	Speech/Language Acquisition	Speech and language development in the normal child.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Pre- or corequisite(s): SHS 250; Credit is allowed for only SHS 465 or SHS 565 OR Visiting University Student
SHS	470	Develop Speech/Lang Disorders	The nature of speech and language disorders in children	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 465 with C or better OR Visiting University Student
SHS	473	Treatment Plan Implementation	Students will learn to follow written treatment plans, individual education programs, individual support plans or protocols developed by the supervising speech-language pathologist. Opportunities to learn methods for eliciting therapy targets and to apply critical thinking and problem solving during therapy will be provided.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	483	Professional Issues in SLPA	Studies licensure laws, professional conduct, and ethical practice in the field of speech language pathology.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	485	Acquired Speech/Lang Disorders	Acquired speech and language disorders across the lifespan.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 310 with C or better; SHS 367 with C or better OR Visiting University Student
SHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
SHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student
SHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	496	Aural Rehabilitation	Approaches to aural rehabilitation of children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; SHS 375 with C or better; SHS 401 with C or better; Credit is allowed for only SHS 496 or SHS 596 OR Visiting University Student
SHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	
SHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
SHS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite: MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	501	Introduction to Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or 501
SHS	502	Basic Audiometry	Covers the bases, purposes, rationales, and procedures for the core clinical tests of auditory function in adults and children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PHD student
SHS	504	Amplification I	Operation, electroacoustic measurement, selection, and prescriptive fitting of amplification devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	505	ASL for AuDs and SLPs	Facilitates effective manual and alternative methods of communication with deaf individuals in clinical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	508	Pediatric Audiology	Emphasizes the principles and procedures for early identification and management of congenital and early-onset hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	510	Amplification II	Verification and validation of hearing aid performance, benefit, and satisfaction. Fitting considerations for pediatric and geriatric populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		

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SHS	511	Aud Perception-Hear Impaired	Psychophysical methods and behavioral aspects of hearing, with an emphasis on the perceptual consequences of sensorineural hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	512	Mgmt Med Speech-Lang Pathology	Focuses on varying topics in management of medically based speech and language disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	513	Neurophysiology Auditory Sys	Focuses on the neurophysiology of the normal auditory system and on changes associated with hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	516	Auditory Evoked Potentials	Electrophysiologic assessment of the peripheral and central auditory nervous system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	517	Balance Assessment	Clinical analysis and treatment of balance disorders and dizziness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	518	Auditory Rehabilitation	Study and clinical application of assistive technology and rehabilitative services for managing the effects of hearing impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	520	Aud Path/Disorders & Otoneuro Ap	Familiarizes students with major pathologies and disorders of the human auditory system. Examines advanced otologic, neurologic, and audiologic approaches in the differential diagnosis and treatment of peripheral and central disorders of the auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Speech and Hearing Science graduate student
SHS	522	Hearing Conserv/Instrument	Examines the prevention, identification, physiologic effects, and management of hearing loss due to noise exposure. Incorporates measurement standards and methods for calibration of electronic audiologic instruments used to produce, modify, and measure characteristics of sound.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	523	Advanced Audiometry	Discusses assessment and intervention procedures beyond the basic audiologic test battery and for special populations. Examines relevant new audiologic tests and procedures. Prerequisites: SHS 502, 513; SHS major.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS major; SHS 502 and SHS 513
SHS	524	Counseling in Comm Disorders	Theories of counseling emphasizing the psychological and emotional impact and management of individuals with communication disorders and their families.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	525	Audiology Practice Management	Business practice issues, quality assurance, and professional ethics for the practicing audiologist.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	526	Launch to Clinic	In Launch-to-Clinic, students rotate through on-campus observations and group orientation to the ASU Speech and Hearing Clinic. Students learn the policies and procedures of the ASU Speech and Hearing Clinic, software specific to the clinic operations, report writing, and clinical documentation with practice to develop the skills needed to succeed in subsequent clinical rotations both on and off campus.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Audiology major; Credit is allowed for only SHS 526 or SHS 580 (Audio Clinical Observation) or SHS 580 (Audiology Observation)
SHS	538	Clinical Methods in SLP	Provides the knowledge and skills in clinical methods for treatment and diagnosis in speech-language pathology. Topics cover essential information to participate in screening and prevention opportunities, to structure and implement therapy goals and strategies, to apply for internships, and to administer and interpret informal and formal diagnostic tests.	Y	LEL	Y	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MS Communication Disorders major.
SHS	539	Professional Issues inSLP	Covers professional issues in speech-language pathology to ensure that students meet the professional knowledge requirements set forth in the American Speech-Language-Hearing Association (ASHA) certification standards. The topics cover essential information that the student needs to have in order to meet graduation requirements, comply with ASHA's ethical requirements, complete ASHA certification requirements, comply with Arizona state licensure requirements, prepare for a Clinical Fellowship Year and be involved in education and advocacy for the profession of Speech-Language Pathology.	N	LAB	Y	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Communication Disorders MS student
SHS	541	Data Analysis Neurosc	Common statistical analyses for the interdisciplinary field of auditory and language neuroscience. Covers fundamental topics of statistics and their applications in this specialty area of neuroscience. Various data types, experimental designs and statistical analyses that are common in the field of auditory and language neuroscience. Through several hands-on activities, students learn to implement and to apply different statistical analyses to auditory and language data.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student

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SHS	542	Applied Rsch Meth Neurosc	Team-taught course covering fundamental topics of experiment design and their applications in auditory and language neuroscience. Students learn about the fundamentals of experimental design, and their application in psychoacoustics, EEG, ERP and MRI. A series of hands-on activities require that students analyze existing experiments and a final project requires that students design a new experiment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	543	Functional Neuroimaging Lang	Functional neuroimaging for anyone who is interested in its application to study brain functions including language, speech and auditory psychophysics. Functional MRI is a prominent method to see into the human brain. Its use as a research tool in the field of neuroscience (and language neuroscience in particular) has grown exponentially over the past decade. Through a combination of lecture, readings and practicum exercises, this course provides a broad introduction into functional MRI research, including how MRI can generate images; how these signals relate to neuronal activity; and how to design and analyze meaningful functional MRI experiments to investigate the neural computations of language, speech, hearing and other related functions. Students also review recent functional neuroimaging literature, and gain hands-on experience collecting and analyzing fMRI datasets.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 543 or SHS 598 (Functional Neuroimaging of Cognition)
SHS	550	CORE B - Development 6-21	Covers development, assessment and intervention of children from 6 years to 21 years of age, with a focus on school education. Includes child development of anatomical, neurophysiology, cognitive, motor, perceptual, speech, language, reading, writing and hearing aspects. Also addresses service delivery models in different contexts in children with atypical development in the different areas.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 540
SHS	552	Physio Measure Auditory Functn	Focuses on the measurement of otoacoustic emissions and acoustic immittance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	555	Cochlear Implants	Covers the research and clinical aspects of cochlear implantation with a focus on the principles of speech coding strategies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	560	CORE C - Adult dev./aging	Covers development, aging, assessment and intervention in adults with a focus on the elderly and the contexts for their service delivery. Includes changes in the adults related to anatomy, neurophysiology, cognitive, motor, perceptual, speech, language, literacy and hearing aspects. Also addresses service delivery models in different contexts where elderly and young adults with acquired disabilities are served.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 550
SHS	565	Speech/Language Acquisition	Speech and language development in the normal child.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only SHS 465 or SHS 565
SHS	567	Neural Bases Comm Disorders	Neuroscience and its application to matters of normal and disordered communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	568	Special Population in Comm Dis	Covers basic knowledge of etiological aspects (genetics, embryology) and clinical assessment/intervention issues relevant for children with complex medical and developmental disabilities that impact communicative development. Places special emphasis on children with cleft lip and/or palate. Addresses interprofessional roles and team-based management of complex conditions and the development of evidence-based approaches to assessment and intervention in communicative development. Because of the growing knowledge of genetic etiologies in our field, SLPs will increasingly be in a position to make informed referrals to genetics professionals. Therefore, this course includes practical how-to information on spotting genetic red flags and referring for genetic counseling services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only SHS 568 or SHS 598 (Special Populations in Comm Disorders)
SHS	570	Comm Disorders/Multicul Pops	Studies racial and ethnic biases and the communication behaviors and disorders in various cultural groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student

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SHS	571	Augmentative Comm/Lang Prog	Focuses on individuals across the age span who are unable or who are at risk for being unable to communicate with spoken language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	572	Lang Assess/Intervent Infants	Focuses on the birth to 3-year-old population who are at risk for or who have communication and language disabilities. Examines early developmental risk factors for speech and language delays and evidence-based assessment methods for young children and their families. In addition, explores models of early intervention delivery in homes, clinics, schools and through telepractice and their application in multicultural environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Auditory and Language Neuroscience MS or Communication Disorders MS or Speech and Hearing Science (Auditory and Language Neuroscience) PhD student
SHS	573	Lang Assess/Intervent Sch Age	Focuses on later language development, linguistic demands of academic settings, assessment and intervention strategies for older children and adolescents.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	574	Feeding & Swallowing Disorders	Focuses on assessment and intervention of people with swallowing and feeding disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	575	Aphasia/Neurogenic Lang Disord	Assessment and treatment of acquired neurolinguistic impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	576	Neuromotor Speech Disorders	Evaluation and treatment of the dysarthrias and apraxia of speech. Emphasizes acquired adult disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	577	Current Research in Autism	Addresses communication disorders in children and adults with autism, as well as evaluation and intervention across a variety of settings and theoretical frameworks.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	578	Fluency Disorders	Provides the master's level student in speech language pathology understanding of the nature and treatment of stuttering and other fluency disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Corequisite(s): Communication Disorders MS student
SHS	580	Clinical Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		
SHS	581	Right Hem Syn/Brain Inj/Dement	Studies the nature, characteristics, and clinical management of cognitive and communicative impairments accompanying right hemisphere damage, TBI, and dementia.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	582	Diff Diagnosis Comm Disorders	Procedures for assessing speech/language disorders in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	584	Clinical Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		
SHS	585	Artic/Phonology: Assess/Interv	Assessment and treatment of developmental articulation and phonological disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	586	Language Essentials Teach Read	Focuses on the fundamentals of literacy instruction and assessment in children enrolled in preschool through high school. Although speech-language pathologists (SLPs) are not the primary reading teachers for students, they play an important role in improving learning in all areas of language, both oral and written. For this reason it is crucial for SLPs to have foundational knowledge in reading and writing development. Recommend a clear understanding of typical language development and language disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 586 or SHS 598 (Language Essentials for Teaching Reading) or SHS 598 (Reading Decoding)
SHS	587	Lang Assess/Interv Preschool	Focuses on preschool language disorders and assessment and intervention strategies for preschool children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	588	Spanish Language Acquisition	Examines Spanish language acquisition in children and adults in the context of monolingual and bilingual language acquisition.	N	SEM	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only SHS 588 or APL 588
SHS	589	Audiology Grand Rounds	Grand Rounds bridges clinical and academic knowledge through case studies, application of emerging research, and clinical workshops.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1		

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SHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		
SHS	596	Aural Rehabilitation	Approaches to aural rehabilitation in children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only SHS 496 or 596
SHS	597	Bilingual SLP	Reviews speech and language assessment and intervention practices with bilingual populations from infants to adults.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		
SHS	701	Sci Writing and Presentation I	Basics of launching a research project. Helps students gain an independent perspective of a research field, become competent in critical questioning and analysis of literature, learn how to develop a research question and initiate a research plan.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Ph.D. student; Credit is allowed for only SHS 701 or SHS 790 (Critical Thinking & Developing Research Questions OR Scientific Writing & Presentation 1)
SHS	702	Sci Writing & Presentation II	Covers the specific parts of an APA style research manuscript, including the structure of the Introduction, Method, Results and Discussion. Also introduces other alternate research manuscript styles such as those used in the biosciences. Discusses strategies and recommendations for creating a successful research presentation.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Requisite(s): Ph.D. student; Credit is allowed for only SHS 702 or SHS 790 (Scientific Writing & Presentation 2)
SHS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		
SHS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		

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SHS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		
SLB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	510	Amateur Sports Law: MSLB	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)
SLB	511	Sports Career Strat & Bus Comm	Focuses on examining job opportunities in the sports industry and the development of strategies for obtaining a position suitable to the talents and abilities of individual students. Students refine their skills in terms of searching for a job. Students also develop a career plan, beginning with an entry-level position for those who have worked in the industry or a next-level position for students currently working in the area.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 511 or LAW 598 (Strategic Career Planning)
SLB	512	Professional Sport Law: MSLB	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
SLB	513	Sports Law and Business	Studies law, policy and problem solving in the context of the sports industry at all levels. Exposes professional, amateur and international sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student
SLB	514	Negotiations & ADR in Sports	Provides a working or basic knowledge of contract law, with in-depth instruction with regard to negotiating and drafting in the sports context. As their final project, students select a player, coach, university or club and then negotiate a contract. Negotiation sessions are held during class sessions and students evaluate each other, as well as receiving evaluation from the professor. Replicates the negotiation process in the sports industry.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 514 or LAW 598 (Contracts in the Sports Industry)
SLB	515	Sports Bus Strat&Exec Decision	Sports can involve a jog around campus or big business. Sports are interesting, important and a vivid context to learn about consumers, organizations, diverse stakeholders, media and entertainment, partnerships and sponsorship, highly competitive strategies in finance and marketing, managing community venues, big events, and other relevant business topics. Maintains a pragmatic, experiential, yet well-grounded focus, studying the role, nature and dynamics of sports business both in and around "sports industries" and in and around "conventional businesses." Builds and "tests" knowledge and exercise skills related to sports business analysis, decision making, communication and both strategy development and execution. Intellectually rigorous, yet fun. Develops a sophisticated, yet practical understanding of the nature, contexts and dynamics of sports business.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 515 or MKT 591 (Sports Business Strategy and Industry Dynamics)
SLB	516	Revenue Generation in Sports	Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance. Gives broad exposure to the major revenue generating domains in the sports industry. Explores the fundamentals of marketing and applies those fundamentals to the domains of sponsorship, endorsement, media, ticketing, merchandising and fundraising as means to create and maintain revenue streams.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 516 or MKT 591 (Sports Business Development)
SLB	517	Sports Marketing	Studies the role, nature and dynamics of sports business and builds knowledge and skills related to sports marketing analysis, decision making and strategy development and execution. Intellectually challenging and demanding, yet fun.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 517 or MKT 598 (Sports Marketing)

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SLB	518	Sports Analytics	Develops and applies analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 518 or MKT 591 (Sports Analytics)
SLB	519	Pro Sport Team Ops/Legal:MSLB	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 670 or SLB 519 or SLB 598 (Pro Team Sports.Legal Issues in Business Operation)
SLB	520	Sports Venue Construction:MSLB	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 671 or SLB 520
SLB	521	Risk Mgt for Venues - MSLB	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 673 or SLB 521
SLB	522	NCAA Compliance: MSLB	Studies law, revenue, branding/institutional reputation and problem solving in the area of infractions and compliance (enforcement of the NCAA and other athletic association rules, penalizing institutions, personnel and student-athletes). Students argue an appeal before the Infractions Appeals Committee and also write and present a paper dealing with a problem in the infractions and compliance area.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 674 or SLB 522 or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
SLB	523	MLB Impact on Law/Society-MSLB	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 672 or SLB 523
SLB	524	Law of Sports Branding-MSLB	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 677 or SLB 524
SLB	525	Sports Big Events:MSLB	Teaches the business, legal and operational issues of major sporting events. Examines bid preparation, marketing, sales, ticketing, operational, security, volunteer, sponsorship, legal and other issues related to these events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only SLB 525 or SLB 598 (Sports Big Events:Law/Biz/Ops-MSLB)
SLB	581	US Law/Legal Analysis in Sport	The U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete written legal analysis exercises, draft case briefs and participate meaningfully in class by critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student
SLB	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student

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SLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	REC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student
SLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLC	103	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
SLC	104	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
SLC	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
SLC	123	Gods & Monsters: Comparat Myth	Guides students in comparing mythologies of a number of different cultures, including ancient Greek, Asian, Middle Eastern, European and American aboriginal traditions. Roots readings and assessments in the relevant literature from each tradition. Introduces students to (short selections from) texts from a variety of cultures, including ancient Greek epic and tragedy, the Ramayana, Norse eddas, the various flood stories from Mesopotamian cultures, African creation and Mesoamerican creation myths, and the legend of King Arthur. In addition, students encounter oral tradition and folklore from the Brothers Grimm, African-American trickster stories, American folklore, vampire legends, and Native American oral tradition. These types of texts invite discussion of cultural appropriation and the modern uses of such traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Credit is allowed for only SLC 123 or SLC 194 (Gods and Monsters: Comparative Mythology)
SLC	140	Grk&Lat Roots Bioscific Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
SLC	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only RUS 141 or RUS 441 or SLC 141 OR Visiting University Student
SLC	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142

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SLC	144	The Ancient Mediterranean	Provides a comprehensive introduction to the Mediterranean world, focusing on (but not limited to) the period of the classical Greeks and Romans. Provides some history of the area, but focuses on the classical world and its interaction with the cultures that surrounded it, including Semitic, Near Eastern, and North African cultures, as well as some of the lost cultures of the area such as the Minoans and Etruscans. Introduces the sources that provide information about these cultures (literary, art historical and archaeological sources), and teaches students to think critically and write persuasively about these sources.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 144 or SLC 194 (The Ancient Mediterranean)
SLC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		Pre-requisites: maximum 25 hours
SLC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	201	Introduction to Linguistics	Examines the nature and diversity of world languages, linguistic structures and functions of language, language variation, pragmatics, and language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU or SB	
SLC	202	Literary & Cultural Theory	Interdisciplinary approaches to understanding culture and cultural production (literature and critical theory, film, visual art, and performance, among others) in different cultures and regions. Classes are taught by a primary instructor aided by several guest lecturers in their area of academic specialization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SLC	203	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
SLC	204	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
SLC	212	Language and Culture Clash	Not limited to language majors and does not require any previous knowledge of a foreign language or culture. Students complete course projects using the material of their cultures of interest (the language they are taking interest in, including English). Focuses on the following topics in linguistics and cross-cultural communication: cultural norms, cultural conceptualizations, cultural scripts (as linguistic concepts), equivalence, communication failures. Emphasizes hands-on analysis, and also familiarizes participants with the basic concepts in the fields of cross-cultural linguistics and cross-cultural psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 212 or SLC 294 (Language&Culture Clash/Communcn&Miscommunication)
SLC	221	Survey of Ancient Greek Lit	Introductory survey of ancient Greek literature. Familiarizes students with the important literary genres, texts, and authors of the ancient Greeks from Homer to the Hellenistic period. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 221, SLC 221 or 294 (Ancient Greek Literature in Translation)
SLC	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)
SLC	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
SLC	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
SLC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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SLC	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLC	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
SLC	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321
SLC	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student
SLC	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
SLC	334	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student
SLC	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
SLC	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
SLC	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
SLC	345	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student

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SLC	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
SLC	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
SLC	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
SLC	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student
SLC	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
SLC	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
SLC	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
SLC	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SLC	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
SLC	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374

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SLC	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)
SLC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	401	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SLC	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
SLC	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 494 (Asian Popular Culture) OR Visiting University Student
SLC	421	Japanese Lit in Translation	Readings selected by theme or genre or period from various works of Japanese literature in English translation. May be repeated when topics vary. Graduate students by permission.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	
SLC	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
SLC	425	Colonialism to Climate Change	Allows students to engage with the broader experience of globalization by examining cultural material in relation to the circumstances and conditions of the globalization process. Organized chronologically and divided into four units: the period before European hegemony, the era of European colonialism and imperialism, the period of decolonization and modernization, and the contemporary context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better

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SLC	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 429 or SLC 429 or THE 429 OR Visiting University Student
SLC	439	Vladimir Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Invitation to a Beheading (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)
SLC	440	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student
SLC	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
SLC	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voivode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the Wrl'd) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student
SLC	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
SLC	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
SLC	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student

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SLC	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
SLC	450	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
SLC	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
SLC	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
SLC	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, artivism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455
SLC	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student
SLC	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SLC	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)

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SLC	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
SLC	479	Intro to Teaching Foreign Lang	Introduces teaching methodologies, language learning, and current best practice in teaching foreign languages in U.S. middle and high schools.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SLC	480	Methods Teaching Foreign Lang	Teaching foreign languages and literatures at secondary and college levels. Does not meet the The College of Liberal Arts and Sciences General Studies requirement for humanities and fine arts. Required for admission to SED 478.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SLC 479 with C or better
SLC	481	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441
SLC	482	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SLC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	485	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student
SLC	486	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SLC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
SLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		Pre-requisite: minimum 56 hours
SLC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLC	510	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510
SLC	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545

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SLC	551	Global Approaches to Trans	Familiarize students with various approaches to translation practice. Examines issues related to the cultural role of translation. Students [re]prepare a translation, justification of translation choices, and discussion of the complexities posed by the translation. Readings address a broad array of translation theories, with most focused on translation as a globally theorized phenomenon in the 20th and 21st centuries. Readings and discussions focus on how one translates, and on translation as a culture-making enterprise inextricably tied to the questions of who translates, in what context, for whom, and to what ends. Students understand translation theories from different eras and cultures; understand how translation is implicated in different forms of intercultural contact (colonialism, commerce, proselytization); gain experience translating texts from a source language into English; and can explain why they translated the way they did.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
SLC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SPA 591 (Lang Teach Mthd) or SPA 596
SLC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	602	Comparative Cultural Theory	Trains SILC Ph.D. students in a range of theories and methods of cultural analysis and comparison, and explores some of the conceptual tools used in the production of comparative studies scholarship. Exposes students to texts by authors from diverse historical and geopolitical contexts and encourages them to reflect upon these various commentaries on the nature and interpretation of culture and cultural production. Discussion centers on the relationship between cultural production and material realities and on the interdependence of cultural production and social, economic and political issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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SLC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SLC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SLC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SLV	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLV	440	History of Slavic Languages	Comparative evolution of East Slavic, West Slavic, and South Slavic languages from the earliest record to the standardizing of national languages in the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SLV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
SLV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
SLV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLV	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SMC	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
SOC	101	Introductory Sociology	Fundamentals of sociology, organization of human groups and society, processes of interaction, and social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Credit is allowed for only SOC 101 or SOC 301 OR Visiting University Student
SOC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshmen; maximum 25 earned hours
SOC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SOC	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
SOC	220	Sport and Society	Examines sports in American society as a source of socialization and an institution where gender, race/ethnicity, and class interact.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	241	Modern Social Problems	Race relations, poverty, unemployment, and other current issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
SOC	270	Racial and Ethnic Relations	Problems of minorities in heterogeneous societies. Evaluates theories of prejudice and research dealing with discrimination, desegregation, and assimilation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	
SOC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student
SOC	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): Minimum 24 hours; SOC 101, PSY 101(PGS 101), FAS 101 or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
SOC	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
SOC	315	Courtship and Marriage	In-depth study of courtship, marriage, and related processes, focusing on problematic aspects of these institutions from the sociological perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	320	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
SOC	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
SOC	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SOC	328	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours. Credit is allowed for only ASB 340 or SOC 328
SOC	331	Environmental Sociology	Analyzes human organizational responses to population growth, technological change, and environmental stressors on both a national and global scale.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): minimum 45 hours
SOC	332	The Modern City	In-depth analysis of the growth, characteristics, and problems of the modern city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	333	Population	Global trends in population growth, composition, and distribution; theories, policies, and impact of population trends on environmental quality and development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	334	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334 OR Visiting University Student
SOC	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339

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SOC	340	The Sociology of Deviance	Sociological analysis of stigmatized behaviors and conditions, including the causes, effects, and management of stigma.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or SOC 301 OR Visiting University Student
SOC	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
SOC	343	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342
SOC	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
SOC	352	Social Change	Patterns of social change, resistance to change, and change-producing agencies and processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G & H	
SOC	353	Death&Dying Cross-Culturl Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
SOC	354	Global Politics of HumanRights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
SOC	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
SOC	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well. May be repeated once for credit.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SOC	360	Sociological Psychology	Interaction patterns between the sociocultural order and individuals; socialization process; norms, roles, and statuses; collective behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101, PSY 101(PGS 101), FAS 101, or FAS 330 with C or better; Minimum 24 hours
SOC	363	Men and Masculinity	Sociological analysis of how masculine identity is defined, negotiated, and variously constructed depending upon class, ethnicity, age, and sexual orientation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101
SOC	364	Popular Culture and Society	Studies the social approaches to popular culture, focusing on the function of various forms (literature, film, theatre, and music).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): minimum 45 hours
SOC	365	Sociology Mass Communication	Sociological exploration of the major mass media as a communicative process in American society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	366	Film and Society	Studies the social approaches to film as an art form, mass medium, and ideological construct.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: Minimum 45 hours; Credit is allowed for only ASB or SOC 371
SOC	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
SOC	378	Migration and Society	Application of social scientific theories and principles in order to understand the social and ethnic consequences of international migration with a focus on the United States. Students will communicate views formulated from empirical evidence and reasoned analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ASB 102 or SOC 101 with C or better; 45 minimum hours

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SOC	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SOC	390	Social Statistics I	Descriptive and inferential statistical methods for analysis of social data. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	CS	Prerequisite(s): MAT 142 or higher with C or better OR Visiting University Student
SOC	391	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student
SOC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	400	Perspectives on Aging	Broad overview of gerontological issues; e.g., physical aging, retirement, living options, caregiving, theoretical background, death.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
SOC	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
SOC	415	The Family	Family considered from the institutional viewpoint; in-depth look at its historical development and its adaptation to a changing culture; analysis of the family system in many cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, 330, PSY 101(PGS 101) or SOC 101 with C or better; minimum 30 hours
SOC	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PSY 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
SOC	420	Sociology of Religion	Interrelationship of culture, society, and religion; religion and social stratification; religious, economic, and political institutions; social change and religion. Emphasizes American society and institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	
SOC	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
SOC	424	Women and Health	Women as healthcare workers and an in-depth analysis of issues of health, illness, and healthcare for women	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 30 hours OR Visiting University Student
SOC	425	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
SOC	426	Social Inequality	Examines stability and change in social inequality based on class, race and gender, and in the context of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	427	Sociology of Health/Illness	Social aspects of illness and sociological analysis of the healthcare system and its practitioners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours. Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
SOC	435	Adv Marriage/Family Relationships	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
SOC	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437
SOC	443	Sociology of Corporations	Examines corporations as social institutions and the implications of their status as a legal person on politics, culture, and economy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	445	Globalization, Devel&Resistance	Explores the interconnections among globalization, development, and grassroots movements for social change in Africa, Asia, and Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	448	Epidemics and Society	How epidemics occur; how they are perceived in society; how epidemics affect society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	

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SOC	451	Comparative Sociology	Cross-cultural study of basic social institutions; the methodology of cross-cultural research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	455	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOC	456	Political Sociology	Social factors associated with voting; nature and structure of the electorate and political parties and the nature of national and international power structure.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	457	Global Social Movements	Examines how groups mobilize across borders to pursue social goals, including equality, justice, peace, and salvation in a global context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
SOC	483	History of Social Thought	Social thought in human culture. Background of modern sociology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	486	Contemporary Theory	Contemporary issues and crises in social theory with major focus on particular theorists. Ideological factors in theory, philosophical issues, the nature of theory and its relationship with methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or 301 OR Visiting University Student
SOC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student
SOC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
SOC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
SOC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)
SOC	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 505; Graduate students only (degree and non-degree)
SOC	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 507; Graduate students only (degree and non-degree)

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SOC	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 508; Graduate students only (degree and non-degree)
SOC	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites:Credit is allowed for only FAS or SOC 509; Graduate students only (degree or non-degree)
SOC	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
SOC	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
SOC	515	Studies of the Family	Current developments in the study of marriage and the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	516	Family Demography	Current developments in the study of family demography.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	523	Social Stratification	Overviews significant themes, issues, and bodies of work in the field of social stratification, a fundamental topic of sociological inquiry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	533	Demographic Methods	Emphasizes methods and techniques in demographic analyses such as life tables.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	585	Sociological Theory	Analyzes major sociological theories, from classical to contemporary.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
SOC	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587
SOC	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588
SOC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		

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SOC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	603	Sociological Inquiry	Provides an overview of core theoretical frameworks and associated analytic approaches in sociology. Taught by faculty members from across the university with sociological training or research interests, providing students with foundational and advanced research tools as well as introducing them to ongoing research at ASU, the distinctive contributions of sociological perspectives to inter- and transdisciplinary projects, and potential opportunities for research residency.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	685	Applied Social Theory	Overviews main classical and contemporary theoretical paradigms and concepts in sociology and provides advanced training on using them to build empirical analytic models. Students identify theoretical perspectives appropriate for research questions, build corresponding conceptual frameworks, and formulates testable hypotheses. Seminar format and therefore students' active participation is expected.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	100	Introduction to Sustainability	Introduces basic concepts, global trends, and local responses, philosophical, ethical, and cultural dimensions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	G	Prerequisite(s): Non-Sustainability majors or non-Sustainability concentrations OR Visiting University Student
SOS	101	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): MAT 117 or higher with C or better or Mathematics Placement Test with a score of 50% or higher or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
SOS	110	Sustainable World	Lays the groundwork for understanding the fundamental geological, biological, and social processes that gave rise to the world we live in and continue to maintain its viability for human life.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB	
SOS	111	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student

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SOS	117	Food System Sustainability	Food systems are particularly important for human societies to sustain and are also particularly vulnerable to multiple threats related to the interconnected sustainability challenges we face. Introduces the concepts and issues involved in food systems sustainability. Divided into four modules, the first three of which address the other systems with which food systems interact—socio-ecological, socio-cultural and socio-technical systems. The final module addresses the future of food systems. Teaches students about the main issues in food system sustainability and allows students to enhance their critical thinking skills by applying them to the many sustainability challenges associated food system activities via solutions-based learning including the social, ecological, economic and institutional dimensions.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		
SOS	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
SOS	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	HU	Credit is allowed for only SOS, FSE or CEE 181
SOS	182	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice; rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
SOS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SOS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	201	Introduction to ASU and SOS	Introduces all ASU transfer students to the unique elements, culture, challenges and opportunities of the university.	N	LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS or Sustainable Food Systems BS major; minimum 24 hours OR Visiting University Student
SOS	211	Calculus and Probability	Introduces two of the most important and useful mathematical frameworks used to study natural and social phenomena: probability and calculus. Probability is used to describe an attitude of mind toward some proposition whose truth is not certain. Calculus is the branch of mathematics used to study the behavior and dynamics of functions: calculus is the mathematical study of change. Students gain the basic competence needed for applying probability and calculus when thinking about and research problems in sustainability. Focuses on and discusses applications, the meaning of important concepts, the origins of the rules of derivation and integration, and logic behind why the methods work.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): AML 100 or SOS 101 with C or better OR Visiting University Student
SOS	212	Systms,Dynamics&Sustainability	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 211 OR Visiting University Student

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SOS	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SOS	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SOS	220	Systems Thinking	Introduces systems thinking and complexity science, with an emphasis on analytical relevance for thinking about a myriad of issues involved in sustainability. Hones students' abilities to read critically, articulate their views clearly, and think about the many systems that shape their lives.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	230	Professional Skills-Sustainabi	Builds interpersonal competence, which is a key competence in sustainability. Students work on a small hands-on sustainability project in order to practice professional skills in four domains: teamwork, project management, self-directed and continuous learning, and stakeholder engagement. Students learn how to effectively collaborate in teams, use project management tools to achieve quality products in time, innovate their ways of learning, and create productive dialogue with stakeholders.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better
SOS	231	Careers in Sustainability	Aids in career exploration and development for School of Sustainability majors. Explores values, motivations and career options. Students learn how to approach the job search and how to communicate sustainability to employers; also how to prepare a quality résumé, cover letter, and gain a better understanding of the benefits of networking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS major or Sustainable Food Systems BS major; PUP 190 or SOS 111 with C or better; SOS 110 with C or better; minimum 45 hours OR Visiting University Student
SOS	232	Prof Skills in Sustainability	Students learn how to effectively and compassionately communicate, engage in collaborative teamwork, use project management tools to achieve quality products on time, innovate their ways of self-directed and continuous learning, engage with stakeholders on solutions, and ensure mindful self-care. Students work on a sustainability project, practicing this set of professional skills in a real-world context.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB	Credit is allowed for only ASB 272 or SOS 272
SOS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	300	Adv Concepts & Intgrted Apprches	Integrates disciplinary contributions to sustainability, teaches advanced concepts in sustainability, and explores methods for identifying sustainability challenges and generating solutions. Focuses on diversity of sustainability research, and integrates specialized approaches in sustainability. Advanced concepts in sustainability, including systems-thinking, complexity, nonlinearity, cascading effects, coupled natural-human systems, governance, future thinking, unintended consequences, normative concerns, transformation, power, participation, and equity.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 100, 110, 111 or PUP 190 with C or better; minimum 45 hours OR Civil Engineering (Sustainable Engineering) BSE major OR Visiting University Student
SOS	309	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
SOS	310	Equity, Justice & Sustainblty	Introduces the "social justice" aspects of sustainability science and practice. Sustainability problems are a special class of problems arising from a complex set of issues spread across time, space and institutional scales. These problems can threaten underlying social, economic and ecological systems which are highly intertwined and interdependent. Explore these issues through study of both theory and practice.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	311	Future Thinking and Strategies	Offers a critical introduction to future-oriented theories and methods. Explores anticipation in contemporary society through a series of cases studies that probe real-world sustainability issues and how the future is created and contested. By characterizing and critiquing future-oriented practices across governmental, academic and private sectors, offers a critical perspective on different methodological approaches and the implications of their use.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student

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SOS	314	Basic Energy Science	Explains the concepts of the science of energy for those without a background in engineering. Allows non-engineering students to better grapple with the issues that surround sustainable energy issues. Covers the most common methods of electricity generation as well as renewable technologies and fuels.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SOS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SOS	320	Society and Sustainability	Establishes an understanding of the human, social, and cultural dimensions of sustainability from multi- and interdisciplinary perspectives and at a variety of spatial and temporal scales.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	321	Policy & Gov in Sustain Sysms	Explores the wide array of political questions that are raised when we view the Earth's environment as an integrated, global system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	322	Intl Development&Sustainability	Historical roots of the idea of development; economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	323	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	324	Sustainable Energy Tech & Sys	Comprehensive survey of current and future energy systems; thermodynamics and energy analysis; environmental, economic and social impacts; resources, technologies and infrastructure for electricity and transportation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	325	Economics of Sustainability	Applies economic principles to the allocation of environmental goods and services, external environmental effects, and environmental public goods; decision-making under uncertainty, adaptation to and mitigation of environmental change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	326	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning, and the provisioning of ecosystem services; use of economic and other social science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student

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SOS	327	Sustainable Food and Farms	Food systems and sustainability. Theories of food security, rural livelihood sustainability, and food sovereignty. Critically examines the social, ecological, economic, and institutional dimensions of the many sustainability challenges associated food system activities (production, processing, distribution, consumption, waste). Students develop a food system framework and apply knowledge to an assessment of the sustainability of one aspect of the local food system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	328	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today. Delves into more specific case studies of attempts by current businesses to become greener and more sustainable, exploring challenges and opportunities that are commonly found as well as how decisions are often made in today's business settings and by whom. Explores alternative enterprise models and examples of businesses that are using the current context to redefine the sustainability and enterprise. Given the emergent nature of this effort, uses timely and real-world examples from current events where possible. Explores and applies an integrated approach to sustainability and enterprise. Readings include popular texts, original research articles and current events.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability or Business (Sustainability) major; SOS 110 and 111 (or PUP 190) with C or better; OR Non-Sustainability major with 2 courses: SOS 100, 110, 111 (PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	330	Sustaining the Commons	Equips students with tools to analyze the conditions in which communities can be successful in managing their common resources such as forest, water and clean air. Students learn the institutional analysis and development framework to evaluate such collective action problems. Applies this approach of analysis to various sustainability topics from irrigation systems and fisheries to climate change and energy systems in urban environments.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	L	Prerequisite(s): SOS 110; SOS 111; Credit is allowed for only SOS 330 or SOS 394 (Sustaining the Commons)
SOS	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
SOS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
SOS	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353
SOS	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370

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SOS	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101,105 or 107 with C or better; minimum of 45 hours; Credit is allowed for ASB 371, ASB 394 (Inequality and Sustainability), SOS 371 or SOS 394 (Inequality and Sustainability)
SOS	372	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student
SOS	373	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102 or GLG 110 or GPH 111 or SES 121 or Junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373
SOS	374	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone--in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Preq(s) w/ C or btter: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Creditor only GLG 327 or SOS 374 OR Visiting University Student
SOS	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Environment Connections in Anthropology) or ASB 494 (Ecological and Environmental Anthropology)
SOS	380	Entrepre for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N	LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
SOS	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM 385 or SOS 385 OR Visiting University Student

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SOS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412
SOS	414	Urban and Environmental Health	Integrates theory and practice of social sciences (including anthropology, demography, and human geography) to understand environmental contexts of health, particularly urban.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3	SB	Prerequisite(s): ASB 100, 102, 222, 223, AML 100, ASM 104, SOS 100, 110, 111, or SSH 100 with C or better; minimum 45 hours; Credit is allowed for only ASM 414 or SOS 414 or SSH 414
SOS	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student
SOS	424	Dynamic Modeling	Introduces the development and use of dynamic mathematical models to study social and ecological phenomena.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; Credit allowed for only ASM 424 or BIO 424 or SOS 424
SOS	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	433	Sustainable Water Use	A clustered learning network on the problem of water scarce regions, includes insights from hydrology, engineering, biology, economics and public policy. May be repeated once for credit.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		
SOS	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Pre-requisites: MAT 117 or SOS 101; junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Servcs:People&Nature)
SOS	435	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Credit is allowed for only SOS 435 or SOS 494 (Energy and Environmental Policy) or SOS 494 (US Energy: Pathways to Sustainability) or SOS 555 or SOS 594 (Energy & Environmental Policy)
SOS	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s) with C or better: AML 253, or SOS 210(or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)

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SOS	442	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development)
SOS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOS	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
SOS	465	Sustainable Urbanism	History, theory, principles and practice of New Urbanism, including current critiques and counter-critiques of both movements.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s) with C or better: Sustainability major in a sustainability concentration: SOS 110 or 111 or PUP 190; minimum 45 hours; All other majors: PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student
SOS	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
SOS	474	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
SOS	475	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475

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SOS	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)
SOS	480	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Challenges students to explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 110, SOS 111, PUP 190 with C or better if completed; Credit is allowed for only SOS 480 or SOS 494 (Achieving Career Success in Sustainability)
SOS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): School of Sustainability undergraduate student
SOS	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SOS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SOS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	College of Global Futures	School of Sustainability	1-6	L	Prerequisite(s): Barrett Honors student
SOS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): Sustainability or Business Sustainability major; SOS 110 with C or better; SOS 111 or PUP 190 with C or better, OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111, PUP 190, SOS 300 with C or better OR Visiting University Student
SOS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	Prerequisite(s): School of Sustainability undergraduate student; minimum 9 hours of SOS upper-division courses
SOS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	SEM	Y	Z1	College of Global Futures	School of Sustainability	1-3		
SOS	501	Foundations of Sustainability	Provides a knowledge base to help students to succeed in the online MSL program. Supports MSL students in the four learning threads of the program, which include communications and sustainability, global context, strategic sustainability and sustainability leadership.	N	LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	502	Tools & Techqs Sustainability	Forthcoming federal legislation and Executive Orders will set new standards for operational efficiencies, energy and water conservation, use of renewable energy sources, and waste minimization in the Army and Army National Guard. Tools and Techniques for Sustainability presents a systems approach to meet those standards by integrating principles of sustainability into existing Army policies, procedures, and reporting systems. The course features the Framework for Sustainable Strategic Development as an organizing framework to analyze systems and develop strategic plans to move toward sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Global Sustainability Leadership certificate student; Pre- or co-requisite: SOS 501

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SOS	503	Operational Sustainability	Sustainability is a means to addressing the significant physical, statutory, and regulatory requirements that affect and can encumber the Army's ability to train Soldiers at ranges and maneuver areas across the United States. With hundreds of imperiled species proposed for federal protection in the next few years, threatened and endangered species and sensitive habitat will continue to be a concern. Participants in Operationalizing Sustainability will explore how innovative training practices, improved land and natural resource management practices, and enhanced community relationships can ensure continued access to the land and water assets needed to maintain readiness and can help to 'win hearts and minds.' Proactive approaches to promoting well-being for soldiers, families, civilians, neighbors, and communities, both at installations and downrange, are stressed.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	504	Energy & the Built Environment	Provides practical approaches to applying sustainability principles and practices to public works activities, housing, facilities operations and management, military construction, master planning, and energy management. Presents approaches to implement high-performance sustainable building design, construction, operation and management, maintenance, and deconstruction. Also covers cost-effective, innovative strategies, such as highly reflective and vegetated roofs, to minimize consumption of energy, water, and materials.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	505	Sustainable Military Acq & Log	Sustainable Military Acquisition and Logistics provides practical approaches to applying sustainability principles and practices to all areas of procurement, acquisition, and logistics. Through weapon systems acquisition or procurement of installation goods and services, the Army hopes to drive innovation and promote sustainability while reducing costs. The inclusions of energy and resource efficiency and other sustainability criteria in acquisition and procurement decisions can reduce long-term operation and maintenance costs, conserve resources, and continue to expand innovation throughout the supply chain. This course introduces the application of sustainability principles to procurement and acquisition, transportation, and materiel. The use of life cycle analysis and multicriteria assessment for all 10 classes of supply is also featured significantly in the course.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	508	Pathways to Sustainability	Covers fundamentals of sustainability and sustainability science. Gives beginning graduate students, or prospective graduate students, a broad look at sustainability that prepares them for future coursework in the field. As such, exposes students to concepts, tools and approaches for achieving sustainability outcomes. Explains, in detail, the essential competencies a student of sustainability must attain in order to be appropriately equipped for graduate coursework and/or working in the field. Finally, it examines sustainability leadership; that is, how to move from the what and the why of sustainability challenges to the how to use knowledge and skills to initiate sustainability solutions in various organizations.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	509	Leading Sust Transitions	The vast majority of organizations must significantly change their operational models in order to become sustainable. Leaders must determine how to champion this change, generate momentum, and align internal reward systems to facilitate these transitions. Exposes students to different change models that are applicable to private, public and nonprofit organizations. Introduces a variety of practical cases that serve as a foundation to apply different frameworks that help transition organizations toward being sustainable.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	510	Perspectives on Sustainability	University-wide course covering basic perspectives on sustainability. Uses case studies; faculty and students from engineering, architecture, social sciences, and natural sciences exchange ideas on the major challenges faced in forming a sustainable future at the local, national, and global levels.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student

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SOS	511	Adv Sustainability Prob Solvng	Conveys advanced procedures of how to identify and analyze sustainability problems and how to develop solution visions and strategies that can solve and mitigate sustainability problems. Introduces and facilitates training in how to use an integrated framework for sustainability problem solving, which is applicable to all sustainability-related professions. Prepares students for their applied projects on sustainability solutions.	N	LEC	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student
SOS	512	Environmental & Resource Econ	Microeconomic theory applied to problems of the environment and natural resources, principles of nonmarket valuation of the environment, market failures in the provision of environmental goods and services, dynamic management of natural capital stocks, the economics of sustainable development.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	513	Science for Sustainability	Key ideas, concepts and principles of sustainability science that focuses on the dynamic relationship between society and nature. Examines the structure, functioning and dynamics of coupled human-environment systems (CHESs) on local, regional and global scales with a systems perspective. Covers major sustainability science issues including: fundamentals of ecology, energy, agro-food systems, renewable and non-renewable resource systems, economic development and human well-being.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU or SOS 514
SOS	515	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		
SOS	516	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
SOS	517	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 517 or SOS 591 (Sustainability and Enterprise)
SOS	518	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
SOS	520	Research Design	Provides skills and knowledge that help students design their own research and place it in the context of other disciplines or bodies of work. Not a "methods" class because no specific method is taught in depth. Instead, it is an initial introduction to the research design process and is intended as a platform through which students develop the skills to appreciate and contextualize the approaches taken (and methods used) by others, and during which they can identify the types of specific training they require as they define their own research.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 510; Credit is allowed for only SOS 520 or SOS 598 (Intro Design/Mthds)
SOS	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521

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SOS	522	Qualitative Methods for Sustai	Theory and application of qualitative methods to sustainability research and practice. Students define and frame a sustainability problem and apply a range of qualitative methods to it, articulate the strengths and weaknesses of these methods, and have a framework for assessing the appropriate use and evaluation of qualitative methods.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 522 or SOS 591 (Qualitative Methods for Sustainability Problems)
SOS	525	SETS Domains and Interfaces	Guide students in developing an integrated approach and framework for thinking about complex systems in a sustainability context. Presents overviews of content, theories and methods from each of the SETS domains (Social, Ecological and Technical Systems); primarily focuses on how to bring these domains together. Explores the SETS interfaces (intersections) from an integrated perspective and equips students to make those linkages in their research and in subsequent elective courses. Each semester students use a sustainability problem or theme to explore the concepts presented in the course.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum &Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum &Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum &EnvSys)
SOS	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
SOS	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	529	Sem in Environ and Sust Econ	Runs in parallel with the ASU-wide biweekly seminar in Environmental and Resource Economics in that class sessions consist exclusively of these seminar sessions. Research presentations in the seminar are given by graduate students, faculty and visiting speakers.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	530	Intl Development&Sustainability	Historical roots of the idea of development; economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	531	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Students explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 510; Credit is allowed for only SOS 531 or SOS 598 (Achieving Career Success in Sustainability)
SOS	532	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): (degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 533 or SOS 532
SOS	533	Sustainable Water	Hydrological, legal, political, and ecological implications of alternative water management strategies; effect of institutional and regulatory frameworks; changes in water demand and supply due to human (population growth, economic changes) and natural (drought, climate change) factors	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	534	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
SOS	536	Food System Sustainability	Broad view of food systems and the sustainability of such systems. Concepts, theory, methods and empirical analyses from diverse disciplines, including agro-ecology, agronomy, political science, agricultural economics, geography, anthropology, and food and nutrition studies. Students choose a theme that is a core concern to food system sustainability and pursue that theme in diverse course activities and through engaging in the broader food system we are embedded in as residents in the Phoenix area. Culminates with a term paper/project that synthesizes experience and knowledge, providing a unique perspective on their role in food systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): degree- or non-degree-seeking graduate student; Credit allowed for only AML, ESS or SOS 540
SOS	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)

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SOS	542	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545
SOS	546	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventoring, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
SOS	547	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
SOS	548	Transformational Sust Entrepre	Familiarizes students with concepts and examples of sustainable entrepreneurship models that are radically different from conventional business models. With a focus on small- and medium-sized enterprises, students learn about structure and function of sustainability-oriented benefit corporations (B Corps), cooperatives, business incubators, impact investment companies and other models. Discusses each model in general and then illustrates through one or more business case studies from around the world. Guest speakers (sustainability entrepreneurs) from Arizona, interdisciplinary peer teaching and learning, online elements, a field visit, and review panels provide a diverse and active learning environment. Open to graduate students from across Arizona State University and has included in the past students from as many as 7 different graduate programs.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SOS 548 or SOS 598 (Transformational Sust Entrepreneurship)
SOS	552	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only CEE 581 or SOS 552

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SOS	553	Chngng Human-Nature Relatshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553
SOS	555	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree-or nondegree-seeking graduate. Credit for only SOS 435,SOS 494 (Energy & Environ Policy) or SOS 494- US Energy: Pathways-to Sustain or SOS 555 or 594 (US Energy: Pathways to Sustainability) or SOS 594 (Energy & Environmntl Policy)
SOS	557	GSS Sust Research Prep	First part of the project track of the double-degree master's program Global Sustainability Science (GSS). The project track runs from semester 1 to semester 3/4. This course prepares GSS students to develop their research proposal as well as to conduct sustainability research in transnational teams.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	558	GSS Sust Research Project	Takes a solutions-oriented sustainability learning approach in which students work on real-world sustainability solutions and collaborate in small teams coached by instructors. Trains students in the use of an analytical-evaluative framework for sustainability solutions and applies it to different solution efforts.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 558 or SOS 594 (Global Sustainability Research)
SOS	559	GSS Perspectives Seminar	Seminar fulfills four functions: (1) students get familiar with sustainability research areas and faculty across ASU, based on the collective interest of the GSS cohort; (2) students receive training on scientific writing; (3) students have the opportunity to participate in a community of sustainability students that supports exchange, bonding and peer-teaching; and (4) students reflect on and provide feedback on the GSS program and their academic development, as well as receive feedback on their pathway through the program and beyond (career opportunities).	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 557
SOS	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)Pre-req for SOS 567

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SOS	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM, BIO, or SOS 570
SOS	571	Sustainable Energy Tech & Sys	Provides a primer on the scientific, technological and social aspects of energy. Includes three core modules: (1) primer on physical, economic and environmental metrics used to measure energy; (2) a review of power systems and electricity generation technologies; and (3) a review of transportation systems and fuel/vehicle technologies. Focuses on energy technology and also incorporates discussions of the human dimensions of energy systems.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	572	Sustainable Energy Transitions	A sustainable future requires a transition away from fossil fuels. This process is far more complex than a simple substitution of fuels. Energy transitions are multifaceted and complex social phenomena, involving economic, technological and political processes that unfold across decades. Delves into these processes for past energy transitions, addressing how energy use evolved throughout history, how it influenced urbanization and socioeconomic development, and how technological change facilitates and constrains energy transitions. What do past energy transitions tell us about how easy or hard it will be to undergo another energy transition?	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	573	Sustainable Energy Policy	Provides a comprehensive survey of energy policies that are shaping the transition to sustainable energy. For context, begins with two views of energy transitions: interdisciplinary socio-technical perspectives and conventional environmental economic perspectives. Next, examines theory and case studies for numerous policies, including carbon pricing, regulatory standards, subsidies, utility regulation, community energy and innovation policies. Lastly, discusses the political drivers and energy system impacts of energy policies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	574	Data Analytics for Sust Energy	Examines the data sources, methodologies and metrics used to measure sustainable energy and explores how they are used to shape public policy and track progress toward sustainability goals. The metrics, which relate to cost, efficiency and environmental impacts, provide the foundation for assessing the relative merits of energy technologies and systems based on a variety of criteria. In addition to quantitatively evaluating a multiplicity of energy sources and systems, the course builds skills in research methods, data analytics and critical thinking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	575	Sust Energy Res Sem	Seminar-based course for sustainable energy Ph.D. students focusing on research skills for interdisciplinary energy research. Taken over two years. Second-year students are expected to take on more of a leadership role in the class and to contribute more developed research presentations in the spring semester. The seminar has a different focus in the fall and spring. In the fall, the course focuses on research methods. In the spring, the course focuses on the process of generating research ideas and writing effective research proposals.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)

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SOS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
SOS	578	Writing Papers for Publication	Students produce a draft of a research paper for submission to a peer-reviewed journal. Analysis of exemplary published papers and narrative strategies, along with peer review, support the writing process.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 578 or SOS 598 (Writing Papers for Publication)
SOS	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		
SOS	581	Synthesis for Sustainability	Aimed at students who have already gained training in content areas and are writing their research or projects for publication in peer-reviewed journals or other outlets. Challenges students to link their own research to other disciplines and the broader field of sustainability research.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 510; SOS 520; SOS 525; Corequisite(s): SOS 596 or 599
SOS	582	Project Management for Sustain	Provides exposure to the tasks and challenges facing project managers, i.e., those people responsible for the vital function of managing complex projects in sustainability in today's environment. Successful project managers have the abilities and skills to simultaneously manage people, schedules, risks, and resources while delivering successful outcomes. This course is a prerequisite for the MSUS culminating experience.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Graduate Sustainability major; SOS 510. Pre- or corequisite: SOS 511
SOS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	589	Community of Scholars	Provides the opportunity to develop new skills, to foster cohort building, to interact with other students and faculty, and to network and build support with the alumni network. Overseen by a faculty member but is primarily directed by the students. All MA or MS students take this course each semester. Although there is an overall structure as demonstrated in the course schedule, the specific content of the course varies each semester depending on the needs and interests of the students.	N	LEC	Y	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		
SOS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	STO	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	596	Capstone: Scientific Paper	MA/MS students are required to devote six hours to conducting research and writing a scientific paper of publishable quality based on the research. The paper topic, the research methodology, and the written format must be approved by the supervisory committee. Students must decide if they will complete the paper on their own or as a group.	N	RSC	Y	GNA	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Sustainability MA or MS student; SOS 510

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SOS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		
SOS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
SOS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		
SOS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		
SOS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		
SPA	101	Elementary Spanish I	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 101 if credit with C or better earned in SPA 102, 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	102	Elementary Spanish II	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): SPA 101 w/ C or better OR Spanish Placement Test score of 250-369; Students may not enroll in SPA 102 if credit w/ C or better earned in SPA 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	110	Intensive Spanish I	First-semester intensive course for students who (1) have never taken Spanish language courses before, or (2) have studied Spanish for one year at the high school level, or (3) have authorization from the Spanish section. This six-hour course meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course focuses on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prereq(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 110 if credit w/ C or better earned in SPA 101 or 102 or 111 or 201 or 202 or 203 or 204 or 210 or 313 or 314 or 315 or 316 or 325 or 412 OR Visiting University Student

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SPA	111	Fundamentals of Spanish	Primarily for students with two years of high school Spanish who need review to enter second-year study.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in SPA 111 if credit earned in SPA101, 102, 201, 202, 203, 204, 311, 312, 313, 314, 315, 316, 325, or 412
SPA	118	Basic Spanish for Health Care	Focuses on helping students develop basic oral Spanish skills that allow them to interact with patients in health care settings. Health care-related vocabulary, simple medical scenarios and basic grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week. Requires no prior knowledge of Spanish.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Placement Test score of 0-369 OR Visiting University Student
SPA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	201	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prereq(s): SPA 102, 110, or 111 with C or better OR Spanish Placement Test score of 370-420; Students may not enroll in SPA 201 if credit with C or better earned in SPA 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	202	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): SPA 201 or 203 with C or better OR Spanish Placement Test with a score of 421-520; Students may not enroll in SPA 202 if credit with C or better earned in SPA 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	203	Intermed Spanish I Bilinguals	In lieu of SPA 201. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a basic conversation in the language. Builds on the skills students already have in order to expand their written and oral proficiency for real communication in a confidence-building environment. Students also explore their cultural heritage and learn about Hispanic cultures in the United States and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): SPA 102, 110 or 111 w/ C or better OR Espanol Placement test score of 0-369; Students may not enroll in SPA 203 if credit w/ C or better earned in SPA 201, 202, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	204	Intermed Spanish II Bilinguals	For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a conversation in the language. Builds on the Spanish language skills students already have in order to expand their written and oral proficiency in a nurturing environment. Students also learn about Hispanic cultures, traditions and customs in the United States and Latin America and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): SPA 201 or 203 w/ C or better OR Espanol Placement Test score of 370-520; Students may not enroll in SPA 204 if credit w/ C or better earned in SPA 202, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	210	Intensive Spanish II	Second-semester intensive course for students who have authorization from the Spanish section. This six-hour course that meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course is focused on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): SPA 102 or SPA 111 with B or better OR SPA 110 with C or better; Credit is allowed for only SPA 201 and SPA 202, or SPA 203 and SPA 204, or SPA 210
SPA	218	Inter Spanish for Health Care	Intermediate Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and intermediate grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Language Placement score of 370-520 OR Visiting University Student
SPA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	313	Spanish Conversation and Comp	Designed to develop skill and accuracy in spoken and written Spanish. Required of majors; SPA 313 and 314 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Spanish placement test score of 521+; Students may not enroll in SPA 313 if credit with C or better earned in SPA 314 or SPA 315 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student

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SPA	314	Spanish Conversation and Comp	See SPA 313.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 313 or 315 with C or better; Students may not enroll in SPA 314 if they have received a C or better in SPA 412 OR Visiting University Student
SPA	315	Advanced Spanish I Bilinguals	In lieu of SPA 313. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can speak and understand the language. Students strengthen their written and oral language to use them fluently in professional and academic contexts. Provides a rich cultural context to critically examine issues related to language and Spanish speakers in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Espanol placement test with score of 521+; Student may not enroll in SPA 315 if credit with C or better earned in SPA 313 or SPA 314 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student
SPA	316	Advanced Spanish II Bilinguals	In lieu of SPA 314. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can read and write in the language. Students continue to strengthen their written and oral language to develop advanced skills for use in professional, educational and academic contexts. Provides a dynamic cultural context to critically examine issues related to Hispanic communities, bilingualism and education in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): SPA 313 or 315 with C or better; Students may not enroll in SPA 316 if credit with C or better earned in SPA 314 or SPA 412 OR Visiting University Student
SPA	317	Spanish for the Professions	Advanced-level course that serves as an introduction to the Spanish for the Professions minor or certificate. Develops oral and written skills that prepares students to use their Spanish in their careers and/or professional fields of interest. Also covers several cultural points that facilitate effective interaction with Spanish speakers in the professional world and global community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	318	Adv SPA for Health Care Prof	Advanced Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and advanced grammatical structures form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Language Placement Score of 521+ or any upper-division Spanish course OR Visiting University Student
SPA	319	Business Correspondence/Comm	Organization and presentation of clear, effective business communications; vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	325	Intro to Hispanic Literature	Critical approach to and analysis of literary types, including poetry, drama, short story, and novel. Required of all majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 313, 314, 315, 316, 412 or 413 with C or better OR R Visiting University Student
SPA	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SPA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	400	Fundamentals/Span Linguistics	Introduces the discipline and methods of linguistics through the study of Spanish data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Pre- or corequisite(s): SPA 412 or 413; Students who have credit for SPA 400 may not enroll in SPA 539 OR Visiting University Student
SPA	401	SPA Oral Comm. for the Prof	Explores the process of creating and delivering effective public communication in the Spanish language in the context of serving U.S. Latinx community (e.g., government, nonprofit organizations, schools, media). Topics include the cultural conventions of public speaking in Spanish, perceptions of others, the articulation of verbal and nonverbal messages, and techniques of oral presentation and persuasion. This course is practice-oriented and aims at reducing students' anxiety in public presentations, emphasizing research, design and delivery, and trains students on how to evaluate their performance and that of others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316 OR Visiting University Student

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SPA	402	Written Comm. for the Prof	Students hone their Spanish literacy (reading and writing) skills in the context of serving U.S. Latino clients in the community (e.g., schools, government agencies, social work settings, medical settings) or reporting on issues of interest to the Hispanic community. Students read and understand documents in Spanish that they would come across in the process of assisting monolingual Spanish-speakers in the public sector or doing research on the Hispanic community (e.g., birth certificates, academic transcripts, medical reports, criminology documents, newspaper or magazine articles). Students gain practice in creating written documents in Spanish that would assist their communication with Latino clients in formal (professional) and informal contexts or that would allow them to report intelligently on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316; Credit is allowed only for SPA 494 (Spanish Written Communication) or SPA 402 OR Visiting University Student
SPA	403	SPA Gram and Stylistics for Pr	Students raise their level of awareness of appropriate grammatical, lexical and stylistic forms to use in their oral and written communication with U.S. Latino clients in formal (professional) and informal contexts in the community (e.g., schools, government agencies, social work settings, medical settings) or for reporting on issues of interest to the Hispanic community. Students enhance their analytical skills by analyzing and comparing Spanish oral and written discourse for genre-appropriate features (stylistics), grammaticality, mechanics, coherence and for a logical flow of ideas in public documents and oral discourses meant for a U.S. Latino audience.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316; Credit is allowed for only SPA 494 (Span Gram & Stylistics for Pro) or SPA 403 OR Visiting University Student
SPA	404	SPA in U.S. Prof. Communities	Students investigate linguistic issues that impact the U.S. Latino community's interaction with professionals (e.g., interaction with service providers in schools, government agencies, social work settings, medical settings; language planning at state and local levels; Spanish spoken in different regions in the U.S.; Spanish language assessment of public sector employees; creation of Spanish for Professional Purposes courses). Students also learn to report on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C	Prerequisite(s): SPA 314 or 316; Students who have credit for SPA 494 (Spanish in the Community) may not enroll in SPA 404 OR Visiting University Student
SPA	405	Latino Cult. Persp. for the Pr	Requires students to investigate the Latino cultural perspectives that underlie and affect communication in the professional world. Students come to understand the historical context that has affected the lives of Latino community in the U.S. and take a critical look at values traditionally associated with Latino culture (e.g., the importance of family ties, fatalism, honor, respecting elders, machismo or marianismo), which provide background information for professionals in the public sector who need to serve the needs of the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C & G	Prerequisite(s): SPA 314 or 316; Students who have credit for SPA 494 (Latino/a Cultural Perspect Pro) may not enroll in SPA 405
SPA	406	Intro. to SPA/ENG Med. Interpr	Provides an introduction to interpretation theory and practice with a specific focus on interpretation for medical fields. Constitutes an academic introduction to the field and does not certify students to be medical interpreters. Students who enroll in this course should have an advanced level of conversational Spanish.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314, SPA 316, or SPA 394 (Introduction to Spanish for the Professions); Credit is allowed for only SPA 406 or SPA 494 (Interpretation for Medical/Law Enforcement Personnel) or SPA 494 (Intro to Spanish/English Medical & Legal Interp) OR Visiting University Student
SPA	412	Adv Conversation/Composition	Oral and written Spanish communication skills, with particular attention given to developing fluency and facility. Required of majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 413 with C or better OR Visiting University Student
SPA	413	Spanish Grammar in Context	Intensive analysis of the Spanish language. Required of teaching majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 412 with C or better OR Visiting University Student
SPA	414	Spanish for Sustainability	Provides language skills to engage in meaningful communication and official transactions in sustainability and environmental studies with an intermediate to high level of Spanish speaking, reading and writing competence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 314 or 316 with C or better; Credit is allowed for only SPA 394 (Spanish for Sustainability) or SPA 414
SPA	417	The Sounds of Spanish	Analyzes the speech sounds of the Spanish language, including articulatory and acoustic phonetics as well as phonology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS or SB	Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student

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SPA	418	Architecture of Spanish	Introduces the syntax of the Spanish language by analyzing different word categories, their groupings in phrases, and the structure of both simple and complex sentences. Advanced course that requires some previous knowledge of basic structures of the language and their internal structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student
SPA	419	Spanish Around the World	Spanish dialectology and variationist/quantitative sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS & C	Prerequisite(s): SPA 400 with C or better OR Visiting University Student
SPA	420	Applied Spanish Linguistics	Applies linguistic principles to the teaching of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L	Prerequisite(s): SLC 201 or SPA 400 with C or better OR Visiting University Student
SPA	421	Spanish in the Southwest	Discussion and linguistic analysis of Southwest Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 412 with C or better
SPA	425	Foundational Texts of Spain	Surveys Spanish literature from its beginning to 1700.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	426	Lit & Society in Modern Spain	Surveys Spanish literature from 1700 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	427	Colonial&Postcol Latin Am Lit	Surveys major works, figures, and movements from Colonial period to 1880.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	428	Found Texts Latin Am Lit Mod	Surveys major works, figures, and movements from 1880 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	429	Writing Mexico: Major Texts	Selected readings from pre-Columbian writers/poets (e.g., Macuilxochitl) through the novel of the Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	434	Drama of the Golden Age	Dramatic works of Lope de Vega, Calderon de la Barca, and their contemporaries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325
SPA	440	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SPA	441	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441
SPA	442	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SPA	443	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student
SPA	444	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SPA	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
SPA	456	20th-Cen Spanish Amer Fiction	Major works and movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325

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SPA	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SPA	464	Jaitón Works in Chicano/a Lit	Representative literature in Spanish and English by Mexican Americans, emphasizing sociocultural as well as literary values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & C	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	470	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
SPA	471	Indohispanomexicano Civilizatrñ	Political, intellectual, social, economic, and artistic development of the Spanish-speaking people of the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & C	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	472	Latin Am Society:5 CaseStudies	Growth of the institutions and cultures of Spanish American people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): SPA 314 or 316
SPA	473	Old&New Spaniard:Cul&Civ Spain	Political, intellectual, social, economic, and artistic development of the Spanish nation from its origin to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	474	Revolutrñ Mexico&Postmdrñ Revs	Examines diverse aspects of Mexican culture since the 1910 Revolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
SPA	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
SPA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	485	Chicano/a Short Story:Espnglsh	Critical study of contemporary short stories by Mexican American authors, with emphasis on their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): SPA 325
SPA	486	Chicano/a Novel:Ultima,Rafa	Social and literary contexts of representative novelists, emphasizing their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325 OR Visiting University Student
SPA	487	Chicano/a Drama: Pachucos	Representative dramatic works, with emphasis on the history and development of this genre from its regional origins to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 325
SPA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SPA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student
SPA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		

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SPA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SPA	520	Preparing Professional Careers	Professional training of graduate students who pursue an academic job. Guides these students through their career and provides the tools they need to navigate their new and demanding academic life, not only as current students but also as future faculty. Among others topics, covers the following: research, publishing, surfing the Internet and the library for articles and books, bibliographical matters, conferences and presentations, professional ethics, choosing a dissertation director, writing and publishing the dissertation, first job search, differences among institutions, cover letters, CVs, tenure issues, and balance of personal and professional life. Explores all the practicalities of the academic profession to direct students to the right track from the first day of graduate school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	536	Generation of 1898	Works of Unamuno, Baroja, Azorin, and their contemporaries, studied against the ideological background of the turn of century in Spain.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	537	Women in Spanish Literature	Major female writers and their texts from Spanish literature (María de Zayas, Ángela Grassi, Concepción Arenal, Emilia Pardo Bazán, Carmen Laforet, Paloma Pedrero) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	538	Chicana Writers	Major female figures and works in Spanish or translation by contemporary writers (Zamora, Castillo, Corpi, Anzaldúa, L.D. Cervantes, D. Chávez, Duarte, Cisneros) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	540	Hist of the Spanish Language	Analyzes and discusses the development of Spanish from Vulgar Latin to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	541	Spanish Language in America	Discusses and analyzes various regional and social varieties of Spanish in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	542	Studies in the Spanish/SW	Examines bilingualism and the social and regional dialects of Spanish in the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	543	Structure of Spanish	Analyzes and discusses data on selected topics in Spanish morphology, semantics, and syntax.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	544	Spanish Phonology	Surveys problems of Spanish phonology within the context of recent phonological theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545
SPA	546	Heritage Language Pedagogy	Sociolinguistic and pedagogical issues around the teaching and learning of heritage languages. Through a close examination of seminal articles in the field of heritage language pedagogy and research, students gain an understanding of the issues that concern these students and the teaching of this population. Defines the field, describes heritage language learners, and discusses the goals and sociolinguistic concerns of HL instruction. Also reviews the most appropriate teaching methodologies and principles for the heritage language classroom, especially in relation to literacy development. Contains a practical component that includes observations together with lesson plan and material development to prepare future teachers for effective classroom experiences and/or language program development. Course requirements include critical essays, online discussions, class observations, lesson plans and a research/applied paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; SPA 546 or SPA 598 (Heritage Language Pedagogy)
SPA	550	Spanish for Reading Knowledge	Teaches nonspeakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Emphasizes developing reading and translation skills through exposure to a variety of texts (journalistic, historical, literary and scientific). Requires no previous knowledge of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPA 550 or SPA 598 (Spanish for Reading Knowledge)
SPA	552	Chicano/a Film	Major figures and films by contemporary filmmakers (Sylvia Morales, Cheech Marin, Gregory Nava, Lourdes Portillo, Roberto Rodríguez, Evelina Fernández) interpreted via critical film theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPA	553	Latin Am Fem Film	Examines Latin American feminist films in the context of contemporary Latin American culture; films viewed analyzed as casework examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only SPA 553 or 583 (Feminist Filmmaking)
SPA	566	Generation of 1927	Major poets of the Generation of 1927, with emphasis on works of Lorca, Guillen, Salinas, and Alexandre.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	567	Contemporary Spanish Novel	Major works of post-Civil War Spanish fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	568	Cervantes	Extensive analysis of the prose and theater of Cervantes as a key figure of the Spanish Golden Age.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	569	Studies in Spanish Film	Examines major figures and films in Spanish cinema. Critically interprets films through current film theory, history, and critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	572	Spanish American Drama	Major contributions of Spanish American drama, with emphasis on contemporary dramatists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	573	Spanish American Essay	Major works of the essay, within the framework of intellectual history and literary movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	576	Contemp Span Amer Short Story	Principal short stories of the <i>Nueva Narrativa Hispanoamericana</i> within the context of contemporary theories of the narrative.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	577	Regional Spanish American Lit	Figures and works of major national (Peru, Argentina, Chile, and Mexico) and regional (Caribbean) literatures. Topics offered on a rotating basis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	582	Studies in Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	586	Chicano/a Novel	Major novels and figures in Spanish or translation by contemporary Chicano novelists (Hinojosa-S., Méndez, Morales, Cota-Cárdenas, Cisneros) interpreted via current narrative theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	587	Chicano/a Drama	Major works of Chicano/a drama, with emphasis on contemporary playwrights (Valdez, Portillo-T., Morton, Moraga, Gómez-Peña) interpreted via current critical drama theory and other methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	588	Chicano/a Essay	Major figures and essays in Spanish or translation by contemporary essayists (Rendón, Anzaldúa, Villanueva, Rodríguez, Mora, Stavans) interpreted via current critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		

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SPA	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
SPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SPA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPE	222	Orient to Ed Exceptional Child	Legal aspects of special education; legislation, education and community services to meet the needs of students with special education needs. Examines the nature and characteristics of students with developmental disabilities, autism, communication disorders, emotional or behavioral disorders, learning disabilities, sensory impairments, orthopedic impairments, other health impairments, and children with gifts and talents.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB & C	Credit is allowed for only SPE 222 or SPE 311 OR Visiting University Student

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SPE	317	Spec Educ for Cultura/Linguist	General issues and practical applications regarding the education of culturally and linguistically diverse students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	321	Classroom and SPE Assessment	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs and monitor progress of students with disabilities. Includes academic, language disorders and transition assessments. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
SPE	323	Behavioral Strategies	Focuses on behavior analysis and classroom management intervention and consultation strategies in general education and special education settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum Junior standing OR Visiting University Student
SPE	325	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
SPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): minimum 45 hours
SPE	396	Clinical Experience I	Provides opportunities for students to engage as a teacher and learner in a variety of classroom settings that serve students with visual impairments. Fulfills two (2) of six (6) required semester hours of practicum in Special Education: Visual Impairments. Develops knowledge and skills for effective implementation of strategies for teaching skills and adaptations specific to visual impairments. Introduces the TAP instructional rubric, the college professionalism rubric, backwards design of a direct instruction lesson plan, and strategies for co-teaching.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
SPE	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
SPE	400	Language Dev & Disorders	Language development course for the general education or special education teacher candidate. Covers how language develops and disorders from infancy through adulthood. Topics include the receptive and expressive language (prelinguistic communication, phonology, morphology, syntax, semantics, pragmatics) in speaking, listening, reading and writing for infants through adults with and without related disabilities. Students also understand the principles of prevention, assessment and intervention within the school environment and across multiple ecologies through transdisciplinary practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
SPE	410	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410

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SPE	411	Family Involvement & Reg Issues	Emphasizes family and school relations through effective communication and state and federal regulations impacting services for students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR enrolled in Early Childhood minor OR Visiting University Student
SPE	416	Quality Prac/Collaborative CIs	Develops skills, strategies, and a knowledge base for preservice teachers in building collaborative partnerships with special educators.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): admission to the Professional Program
SPE	417	Inclusion Practices/Second Lvl	Applies curricular practice and how preservice teachers work with students with special needs in middle and secondary levels.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	423	Cross-Categorical Spec Ed I	Focuses on implementing research-based strategies in reading, language arts, math and language for students with mild/moderate special needs. Includes using data from all stakeholders in the development of the IEP, making instructional decisions using assessment data, monitoring student progress and developing lesson plans.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	424	Cross-Categorical Spec Ed II	Emphasizing pedagogy, content knowledge and evidence-based strategies, focuses on assessment, curriculum development and instruction across content areas (e.g., reading, language, writing, mathematics, science, social studies) for students with low-incidence disabilities or intensive support needs (e.g., significant intellectual disabilities, multiple disabilities, orthopedic impairments [OI], and other health impairments [OHI]). Particular focus includes access to the general curriculum, inclusion, instructional and assistive technologies, communication and language development and disorders, and transition for this population.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	430	Collaborative Teaching	Methods and issues in cooperative teaching for students with disabilities in the general education classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program OR Visiting University Student
SPE	431	Collaborative Teaching Methods	Methods and issues in cooperative teaching for special education students in general education classrooms.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	441	Reading and Writing Braille	Provides future teachers of students with visual impairments with the knowledge and skills for reading and writing braille that enable mastery of the literacy braille code. Students produce braille using a variety of methods, research resources for braille materials and electronic devices that support the braille teacher and student, and explore methods for teaching braille to readers of all ages.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	442	Teaching Methods Students w/VI	Provides a foundation for understanding the education of students with visual impairments (VI) with past and current practices and philosophies situated in the context of special education. Begins with a brief history of VI education, legislation and educational philosophies, including the prevalence of visual impairment in society and an overview of the visual system. Prospective teachers of students with VI learn to assess, plan and implement strategies that support students in accessing academic content, career objectives and activities of everyday living across the lifespan.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	443	Foundn Instructn Students w/VI	Principles of curricular and instructional design for children with visual impairments with respect to licensure (pre-K-12). Emphasizes selecting, developing and adapting curricular and instructional units/themes/lessons so that they are appropriate for children within the licensure range. Students demonstrate knowledge of basic terminology related to the function of the human vision system and the implications for teaching and learning. Also discusses adaptations and modifications, especially of the general education curriculum.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	444	Diag Assmt Pro fr Vis Impaired	Future teachers of the visually impaired learn to interpret medical records, conduct assessment, establish meaningful and measurable goals for an ISFP or IEP, and make recommendations for classroom accommodations, modifications and goals. Examines the impact of strategies with dual sensory loss and deaf-blindness for students in the classroom. Following an overview of the senses of hearing, touch, taste, smell as well as the vestibular and proprioceptive senses, the course examines how each sensory system supports access to information.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours

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SPE	445	Orientation & Mobilty for TVIs	Leads future teachers of the visually impaired (TVIs) to become familiar with the philosophy and history of orientation and mobility. Explores the skills taught in orientation and mobility and experiences techniques taught to demonstrate those skills including concepts, protective techniques, sighted guide, pre-cane techniques, guide dogs and electronic aids in order to be a confident and efficient traveler. Emphasizes early concept development and mobility for students with visual impairment and multiple disabilities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	446	Modes of Communication	Explores multimodal teaching methods (i.e., braille, typing, script, note-taking, sound reproduction systems, listening skills, electronic reading devices and calculation) to support students who are blind or have visual impairments with communication. Students participate in laboratory experiences, so students can develop and demonstrate competencies in the skill of reading, producing and teaching braille as well as the skill of identifying and using assistive technology.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): SPE 441
SPE	447	StdT Tch Teachers Vis Impaired	Student teaching in preK-12 school classrooms is a synthesized experience in curriculum, instruction and classroom management. Successful completion fulfills six (6) required semester hours of education courses, including practicum in grades prekindergarten-12, which teach knowledge and skills such as learning theory, classroom management, methods and assessment, as required by the Standard Visually Impaired Special Education Certificate.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): minimum 45 hours
SPE	478	Student Teaching: SPE K-12	Student teaching in special education classrooms grades K-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	8		Prerequisite(s): admission to the Professional Program
SPE	496	Clinical Experience III	Applies course content in an instructional setting serving students with visual impairments. Emphasizes observation, pupil management, assessment, planning and delivering instruction to students with visual impairments. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
SPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
SPE	502	Lnguage Dvlpmnt & Comm Dsrdrs	Theory and practice in phonology, syntax, semantics and pragmatics of language development for children with and without disabilities from infancy through adolescence. Emphasizes multiple models of assessment and intervention across multiple ecologies.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	503	Collaboration & Consultation	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. Explores connections in depth with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 503 or SPE 540 or SPE 541
SPE	504	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
SPE	505	Collaboratng Effective Planning	Provides an introduction to transition planning for students with disabilities, focusing on person-centered planning and collaborative practices with families and service providers. Emphasizes understanding employment, self-determination, community participation, collaborative practices, family systems and person-centered planning. Introduces and applies a family systems perspective to understanding of families of all children, including infants and toddlers, adolescents and adults with disabilities. Emphasizes understanding diversity in values, belief and traditions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	506	Assessmnt Plannng Instrc Strat	Prepares teachers with the skills to effectively work with children and young adults with moderate to severe/profound disabilities (i.e., intensive support needs). Topics focus on assessment, curriculum planning and instructional strategies using evidence-based practices. Activities include direct observation and assessment techniques in inclusive environments; designing curriculum within multiple contexts with a focus on access to the general education in inclusive environments; selecting and implementing behavioral, communicative and instructional strategies; collaborative practices; and supporting across the educational lifespan of students. Students participate in class sessions two hours per week and engage in field experiences 6 to 8 hours per week in educational environments with students with intensive support needs. Emphasizes current research-based evidence to support students with intensive support needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	507	Augmentative&Alternative Comm	Focuses on issues and strategies for teaching communication to individuals with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Discusses specific assessment and intervention strategies as they relate to augmentative and alternative communication systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	508	Educational Foundations Severe	Provides an overview of the etiological nature of individuals with moderate to severe disabilities (intellectual disabilities, multiple disabilities, sensory impairment and physical disabilities); characteristics of this population; and the associated support needs across the lifespan. Topics focus on the historical and legal contexts that influence services for this population; supports-based assessment and instruction; and key issues related to self-determination, person-centered planning in school contexts for children, youth and adults with moderate to severe disabilities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	509	Positive Behavior Supports	Knowledge and skills to assess, implement and evaluate positive behavior supports for students with intensive support needs (moderate to severe/profound intellectual disability, autism spectrum disorder, multiple disabilities), terminology reflective of a support-based model of disability rather than a deficits-based model. Students learn and apply the foundations of positive behavior supports, understanding the function of behavior and developing replacement behaviors, and implementing plans from a person-centered perspective that reflects the cultural needs of individuals and their families while drawing on interdisciplinary team members' expertise.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	510	Assistive Technology Supports	Focuses on specialized health care needs, policies and procedures for working with students with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Provides an overview of methods for accommodating students including task or environmental modifications, assistive technology and adaptive equipment options.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	512	Indiv/Intellectual Disability	Etiology, diagnosis and management of individuals with intellectual disability. Current trends in prevention, programming and teacher preparation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only SPE 312 or SPE 512
SPE	520	Verbal Behavior	Based on the theories of B. F. Skinner, this course increases student knowledge and understanding of the role of verbal behavior in learning and communication. Students gain experience recognizing the function of communication, applying standardized assessment measures to assess and develop targeted interventions to address communication challenges.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	521	Found Autism Spectrum Disdrs	Increases the understanding of characteristics of individuals with autism.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	524	Effective Classroom Behav Mgmt	Addresses behavioral management techniques for children with special needs, including the organization and delivery of instruction and functional behavioral analysis.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	525	Measurement and Exp Design	Examines data collection techniques, design methodologies, visual analysis and interpretation approaches. Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	526	Concepts and Principles of ABA	Provides an overview of and introduction to the basic concepts and principles of applied behavior analysis. Students gain understanding of behavior analytic process and terminology, defining and providing examples of concepts and principles and applying to a range of situations. Applied behavior analysis is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree, and to demonstrate that the interventions employed are responsible for the improvement in behavior.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	527	Behavior Analytic Assessment	Focuses on assessment procedures of applied behavior analysis. Students learn to determine the need for behavior-analytic services; identify, design and prioritize socially significant behavior change goals; conduct assessments of relevant skill strengths and deficits; conduct preference assessments; describe the common functions of problem behavior; conduct a descriptive assessment of problem behavior; conduct a functional analysis of problem behavior and interpret functional assessment data. Critically evaluates environmental variables in order to make informed recommendations for behavior change.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	531	Meth App Beh Analy for Ex Pop	Methods based on the principles and concepts of applied behavior analysis. Students learn to operationally define problem behavior, conduct functional behavior assessment and generate recommendations for the development of behavior analytic interventions. Students gain knowledge and understanding of specific scientifically valid behavior change procedures. Discusses and applies their corresponding literature base.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	534	Assessment and Evaluation	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs, and monitor progress of students with disabilities. Includes assessments in academic areas, language disorders and transition. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	535	Curricula, Methods, Tech/Adapt	Develops strategies for effective adaptation of special education and general education curriculum through use of technology. Includes methods for addressing special needs in reading, math and language disorders.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	536	Characteristics/Chldrn/Behavrl	Variables contributing to behavior patterns of behaviorally disordered children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	538	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538
SPE	540	Family-Centered Practices	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. In-depth exploration of connections with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	541	Consultation Frameworks/Issues	Models, activities, and roles of educational consultants working with families, professionals, and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	548	Cross-Categorical Foundations	Foundations course compares cognitive, motor, and affective developmental and educational issues across LD, ED, MR, and PI/OHI.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	555	Inclusive Pract Diverse Learn	Adapting instruction and assessment to meet the needs of all learners in inclusive settings. Includes the creation of plans to address challenging classroom behaviors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	559	Methods for Tchng Dvrse Lrn	Apprentice teachers select a specific population, based on placement (mild to moderate or moderate to severe), for individualized investigation. Utilizes practical strategies for curriculum development and IEP implementation. Gains a deeper understanding of their practice by analyzing and reflecting for the purposes of monitoring and adjusting instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: MEd Special Education (Teacher Certification) major
SPE	560	Behavior Change Procedures	Examines scientifically validated behavior change procedures. Students gain experience critically analyzing and selecting interventions informed by measurement, data display and interpretation. Students gain experience in application of knowledge by conducting a behavior change project, analyzing, interpreting and presenting results.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	561	Characteristics/Diagnosis/Lrn	Theories related to learning disabilities, including identification and characteristics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	562	Personnel Sprvsn OBM in Ed	Focuses on the use of data informed procedures for training, management, supervision and support of behavior health practitioners in educational settings. Students gain experience and develop expertise with organizational behavior management (OBM) techniques.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	563	Phil Foundation ABA in Ed	Reviews the history and foundations of the field of applied behavior analysis in educational settings. Interprets the impact and utility of radical behaviorism and experimental analysis of behavior in classrooms, clinics, homes and community settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	564	Cntrvrsl Therapies Sci in Ed	Investigates the role and impact of fads, pseudoscience, false beliefs, dubious assumptions and spurious reasoning on treatment decisions of professionals, politicians, educators, parents and clients in educational settings. Interprets philosophical positions and traditions that influence and inform consumers in selection of treatments. Examines and designs responsible evaluation and strategies for effective communication.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	565	Behavior Change Systems	Focuses on applied behavior analysis-based behavior change systems and procedures. Students learn to identify, implement, manage and supervise interventions based on fundamental elements of behavior change. Addresses behavior change considerations, including ethical use of behavior change systems and ongoing data collection for fidelity and progress monitoring.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate

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SPE	566	Appl Beh Analysis Inklus Set	Examines definitions, characteristics, assumptions and basic principles of applied behavior analysis. Describes and applies fundamental elements of behavior change, including reinforcement schedules, modeling, shaping, chaining and other behavior change procedures. Activities center on the design and delivery of social skill interventions with individuals with special needs in inclusive settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	567	Ethics Applied Behav Analysis	Addresses knowledge and application of the Behavior Analyst Certification Board Guidelines for Responsible Conduct for Behavior Analysts. Examines and resolves ethical dilemmas which may be encountered by behavior analysts. Addresses roles and responsibilities of members of a multidisciplinary treatment team comprised of educators, behavior analysts, parents, learners and other professionals. Students conduct risk-benefit analysis of evidence-based treatment approaches and develop declarations of professional practices and procedures for behavior analysts.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	568	Behavior Assessment	Focuses on critical aspects of applied behavior analysis, experimental design and the identification and implementation of effective assessment methodologies. Addresses client-centered responsibilities of the behavior analyst including problem identification, measurement, assessment, data collection and analysis. Students gain experience conducting functional behavior assessment and stimulus preference assessment to inform intervention design. Emphasizes measuring and ensuring treatment integrity.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate. Credit is allowed for only SPE 568 or SPE 598 (Behavioral Assessment)
SPE	569	Res Meth Applied Behv Analysis	Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); SPE 531; SPE 566; Credit is allowed for only SPE 569 or SPE 598 (Research Methods Applied Behavioral Analysis)
SPE	572	Testing&Measurement Gifted Ed	Covers current and historical aspects of testing and measurement in the field of gifted education. Topics include: the history and purposes of IQ testing, definitions of various types of tests, purposes of testing for gifted education services, ability tests and achievement measures, how tests are used in Arizona in programs for gifted learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 572 or SPE 591 (Testing&Measurement Gifted Ed)
SPE	573	Diff Instruction Gifted Child	Explores the design of differentiated curriculum and instruction for gifted learners in elementary and secondary education	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only SPE 573 or 591 (Diff Curriculum Gifted Child)
SPE	575	Survey, Issues, & Foundations	Explores the foundations of special education through characteristics and eligibility of exceptional students. Analyzes historical, political, social, and legal factors impacting special education services for exceptional students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	576	Clinical Experience	Applies course content in special education classrooms grades K-12: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	578	Student Teaching: SPE K-12	Student teaching in special education classrooms grades K-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	579	Apprentice Teaching: SPE K-12	Apprentice teaching in special education setting. Synthesized experience in classroom management, curriculum, instruction and assessment. Must be taken four times for a total of 12 semester hours.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	585	Creativity: R&D in Gifted Ed	Explores nature of creativity in terms of philosophical underpinnings, empirical evidence, human development, self-actualization, and the ecology surrounding the creative event.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	586	Advising the Gifted Learner	Focuses on educational planning and guidance, social and emotional development, and family problem solving regarding needs of gifted children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	587	Special Populations/Gifted Ed	In-depth analysis of major controversies in educating the gifted, including nature/nurture, the role of mental tests, and sex differences.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	588	The Gifted Learner	Gifted children's characteristics, identification, needs, school and home environments, definitions, and misunderstandings. Research by Pressey, Stanley, Terman, and others.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	589	Gifted Education Programming	Approaches for designing and implementing optimal and comprehensive gifted education services in a broad range of educational settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: postbaccalaureate undergraduate or graduate student (degree seeking or nondegree seeking)
SPE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	597	Capstone	Applies theoretical and practical information presented through coursework in a real-world setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student

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SPE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Special Education Doctoral student
SPF	301	Culture and Schooling	For the professional teacher preparation program. Overview of the cultural, social, and political milieus in which formal schooling takes place in the United States.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SPF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
SPF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SPF	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SPF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Pre-requisite: ENG 101, 105, 107, or ENG 111; Credit is allowed for only ASB or SSH 300
SSH	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
SSH	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student
SSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	402	Commnty Partnrshps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student
SSH	403	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): SSH 100 or ASB 100; Credit is allowed for only ASB 443 or SSH 403
SSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		

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SSP	242	Res Trng Foundation Performanc	Provides knowledge and hands-on skills in executing and teaching the foundational resistance training movements required to be successful in performance training programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Sports Science and Performance Programming BS or Kinesiology BS major OR Visiting University Student
SSP	275	Exper Seminar Sports Science	Experiential course designed to introduce students to the various career opportunities in the field of sports performance training or sports science. Students meet on a weekly basis to gain further insight into different ways to get involved in the field and gain the valuable experience that is required for their future success. Guest speakers introduce new ideas, training concepts and new ways students can get involved. Includes discussion groups and presentations from students to further explain the various positions and experiences they have had allowing the class to open their minds to different areas. This course meets the requirements of early experiential experience required to receive certification from the National Strength and Conditioning Association as a Certified Strength and Conditioning Specialist.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B- or better; EXW 215, 216, or SSP 242 OR Visiting University Student
SSP	315	Exercise and Sport Physiology	Develops an understanding of the body's abilities to perform various types and intensities of exercise and sport, to adapt to stressful situations, and to improve its physiological capacities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 with C or better, or both BIO 201 and 202 with C or better; Corequisite(s): SSP 316 (EXW 316); Pre- or corequisite(s): EXW 101 or KIN 101 with C or better if completed OR Visiting University Student
SSP	316	Exercise and Sport Phys Lab	Allows for exploration and application of exercise physiology theories in controlled experiments measuring performance capacities.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): BIO 160 with C or better or both BIO 201 and 202 with C or better; Pre- or corequisite(s): SSP 315 (EXW 315) OR Visiting University Student
SSP	320	Coach Lead, Perf Team and Mgt	Discusses leadership skill development and team building related to performance staff and athletes. Details specific concerns related to management of training facilities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 or KIN 101 with B or better; Credit is only allowed for EXW 320 or SSP 320 OR Visiting University Student
SSP	325	Appl Anat & Biomech Sport Mvmt	Provides a detailed introduction into the mechanics of motion and the underlying anatomy that provides the structure for that motion. Students learn to appreciate the consequences of external forces, how the body generates internal forces to maintain position, the consequences on the structure of handling the forces and an applied knowledge of how the result of these forces is motion. Emphasizes applying biomechanical principles to analysis of human performance and understanding the background for movement optimization science and the reduction of injury potential through movement correction.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): BIO 201 with C or better; KIN 101 with C or better OR Visiting University Student
SSP	423	Performance Test & Technology	A detailed presentation of laboratory and field-based methods used to evaluate athletic performance and measure effectiveness and progress of sports performance training routines. Students are shown the skills to evaluate the most effective tools, techniques and technologies available to carry out individual and team based assessments. Students are exposed to the best practices of performance testing and the wide range of available methods to determine different performance measures, allowing them to make the most effective and cost-efficient choice when asked to make those decisions in the field.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 315 (EXW 315); SSP 316 (EXW 316); SSP 325 OR Visiting University Student
SSP	434	Spts Mvt and Conditioning	Applied course covering advanced fitness, speed development and movement techniques. Information applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced speed, agility and conditioning exercises and programs for varying individuals and teams.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 215, 216, or SSP 242; SSP 325; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 534 or SSP 434 (or EXW 434) OR Visiting University Student

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SSP	460	Resistance Training App/Theory	Covers advanced resistance training and performance programming methodologies. Applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced resistance training exercises and programs for varying individuals and teams. Addresses a significant number of core competencies identified for the NSCA Certified Strength and Conditioning Specialist (CSCS) examination.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 215, 216, or SSP 242; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 530 or EXW 598 (Resistance Training Application and Theory) or SSP 460 (or EXW 460) OR Visiting University Student
SSP	461	Plyometrics & Power Training	Applied course covering advanced resistance training and strength and conditioning techniques. Provides information applied to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced resistance training and plyometric exercises and programs for varying individuals and teams. Includes both lecture and participatory application labs. Expects students to search and analyze the literature on advanced resistance training and conditioning concepts and techniques.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prereq(s) w/ C or better: EXW 214; EXW 216; EXW 218 OR EXW 215; EXW 217 OR SSP 242; Pre- or coreq(s): EXW 330 or SSP 325 w/ C or better if completed; Credit allowed for only SSP 461 or EXW 494 (Plymtrcs & Pwr Trnsfr Exrcse) OR Visiting University Student
SSP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): SSP 242; SSP 275; SSP 434
SSP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SSP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
SSP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220

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SST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 or SST 294 (Disability Justice and Advocacy) OR Visiting University Student
SST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	301	Research Methods-American Comm	Provides a foundation in the concepts and tools of community-based participatory research for studying American cultures, including how to identify and utilize appropriate quantitative and qualitative research methods for working with diverse American communities. Students learn to take part in participant observation, conduct surveys, interviews and focus groups as well as explore existing data sets to conduct secondary data analysis and utilize visual and narrative means of data collection and presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170 or completion of MA General Studies course; minimum 2.00 GPA; minimum 24 hours
SST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
SST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
SST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	501	Fnds of SocialTransformation	Introduces the foundations of social transformation and social change. Looks at social transformation through an interdisciplinary lens and explores the connections between the objective and subjective factors that enable or inhibit social transformation in different contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	510	Social and Cultural Pedagogy	Engages students with the academic literature and scholarly debates on social and cultural pedagogy, reviews practical lessons from the field, and provides an overview of different areas of intervention and professional practice. Considers the historical, local, and international dimensions of social and cultural pedagogy, illustrating them with selected case studies. Encourages the study of social and cultural pedagogy using a critical and interdisciplinary perspective.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	520	Learning Tech-Native Education	As the Internet and digital devices become more accessible in Indian country, educators are increasingly developing digital systems for formal and informal learning environments. From distance learning systems to digital language learning and apps for informal learning, this course reviews types of educational technologies in different American Indian and Indigenous educational settings, highlighting the relationship among technical affordances, pedagogical approaches, and social impacts. Students (1) understand how technical affordances shape learning in face-to-face and online environments; (2) describe the relationship between digital learning tools and curricular and programmatic objectives; and (3) describe and propose the basic limitations and possibilities of types of educational technologies for specific American Indian and Indigenous educational settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SST	530	Culture and Education	Examines the relationship between local cultures, local knowledge and education. Drawing from comparative and international education and paying particular attention to the world's most marginalized populations—Indigenous peoples. Additionally, explores historical trajectories of education, the global expansion of schooling, state and international education and language policies, as well as notions of local/Indigenous resistance, agency, response and educational innovation. Three major sections comprise the course: (1) patterns in education and language policy for historically underrepresented and underserved populations; (2) the role of families, communities and local and place-based pedagogies; and (3) alternative models of education toward social transformation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SST 530 or SST 591 (Culture and Education)
SST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
SST	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	604	Sexuality Studies	Examines the social construction of sexuality, sexual identities and cultures, including LGBT people and other non-normative gender and sexual formations not captured by modern LGBTQ categories. Studies genders and sexualities that both pre-date current LGBT subjectivities and community formations, as well as develops theoretical and analytic tools to examine future gender and sexual possibilities. Interrogates forms of heterosexuality, heteronormativity and homonormativity, from an intersectional perspective. Examines issues and institutions that impact and are impacted by sexuality as a vector of power, such as sexual stratification, carceral genders and sexualities, reproductive rights/justice, sexual health and justice, HIV/AIDS and disease, sex work, the state and legal system, and transnational and diasporic sexualities, just to name a few.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		

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SST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
STC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	501	Theories of Data & Society	Surveys the development of social theory with regard to structures of knowledge and data exchange. Prepares students to engage in theory building and deploy theoretical frameworks that inform and support their social research.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	505	Theories of Social Technology	Examines key theories of social technologies from social and behavioral perspectives. Examines the political dimensions of technologies; technology's role in constructing social structures; and how mobile technologies encourage, structure and delimit social interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	510	Data Wrangling	Provides a technical grounding in the processes of extracting, processing and combining data for the purposes of understanding social and institutional changes. Introduces structures of the Web, programming for the extraction of data, storing data effectively, and basic tools for manipulating, visualizing, summarizing and transforming collected data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	512	Data, Places, People & Things	While the Web continues to be our front door to networked data, the fastest growing segment of internet traffic is produced and consumed by sensors and embedded systems. Examines the ways in which these data may be acquired and used, and how new locative technologies may be prototyped to help understand their social impact.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510; Credit is allowed for only STC 512 or STC 598 (Mobile & IoT Systems)
STC	520	Advocacy and Social Technology	Examines the potential for social technology in advocating for social change.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	525	Politics and Social Technology	Concerns the political implications of social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	527	Ethics&Policies of Social Data	Explores the applied ethics of data, and how this relates to public policy, both from a social and an institutional perspective.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	528	Communicating Data Science	Making use of data means more than just designing algorithms that work consistently. Big data is useless if it cannot be effectively communicated to those who need it, whether that is policy makers, managers or the public at large. Participants acquire techniques that allow them to effectively communicate complex data in writing, verbally, visually and through interfaces.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 551
STC	530	Algorithmic Society	Examines perspectives on the algorithmic turn, including the emergence of software studies, big data, platformed sociability and automation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	535	Networked Social Technology	Surveys human and social behaviors from the perspective of networks, with an emphasis on social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	536	Networked Publics	Traces the move from mass society to networked society and the changes this has led to in the public sphere, political participation and systems of governance.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 501
STC	537	Technologies of Community	Examines the ways in which communities form, manage themselves, and improve through the use of networked technologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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STC	539	Social Search and Filtering	Traces the role of search (and search engines) in the development of networked knowledge; how this biases social access to information; and the technologies of filtering, ranking and sorting that increasingly affect social access to information.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STC 539 or STC 598 (Search, Algorithms, and Society)
STC	540	Critical/Cultural Approaches	Examines critical and cultural studies approaches to social technologies. Explains a critical/cultural studies approach to social issues and the cultural and social dimensions of technologies. Explores how social technologies both shape and are shaped by power and how cultural understandings of technology contribute to the shaping of everyday life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	545	Games as Social Technology	Explores how games as networked and collaborative technologies facilitate community formation, interaction and development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	547	Political Econ of Social Tech	Examines the economic, political and material structures of contemporary social and participatory media. Considers patterns of ownership, regulatory policy, corporate ideology and practice, intellectual property, the nature of labor in the information economy, and more, all with an eye toward understanding how social technologies are developed, distributed and deployed.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	550	Computational Social Methods I	Provides a foundation in the structure of scholarly inquiry and research design in the context of data and society.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510
STC	551	Computational Social Meth II	Extends exposure to advanced computational methods in the practice of social science.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 550
STC	570	Social Data Projects	Participants collaborate on a substantial project relating to social use of data. In the process they bring to bear their theoretical and technical skills and demonstrate professional interaction and communication skills. Participants also produce a public portfolio of their work during their graduate program.	N	PRA	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1		Prerequisite(s): Social Technologies MA student
STC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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STC	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		
STP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	226	Elements of Statistics	Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or other course meeting General Studies MA requirement with C or better OR Mathematics Placement Test with a score of 50% or higher OR ALEKS score of 61 or higher OR Visiting University Student
STP	231	Statistics for Biosciences	Concepts and methods of statistics; display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or higher with C or better OR Mathematics Placement Test with a score of 50% or higher OR ALEKS score of 61 or higher OR Visiting University Student
STP	280	Probability Statistics Research	Methods for data summary, numerical summary measures, probability concepts, discrete and continuous probability distributions, expected values, statistics, sampling distributions, point estimation, and introduction to statistical inference for a single parameter.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): MAT 251, 265, or 270 OR Visiting University Student
STP	281	Stat Analysis for Researchers	Confidence intervals, hypothesis testing, one- and two-factor analysis of variance, simple linear regression, multiple regression, chi-square tests, and introduction to statistical quality control.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 266 or 271; STP 280
STP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
STP	310	Design/Analysis of Experiments	Factorial and nested designs, randomized designs, randomized complete block designs, Latin squares, fixed and random effects, expected mean squares, multiple comparisons, and analysis of covariance.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	311	Regression & Time Series Anal	Simple linear regression, multiple linear regression, indicator variables, influence diagnostics, stepwise selection, logistic regression, introduction to time series models, autocorrelation, and some ARIMA models.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	315	Statistical Computing	Statistical techniques using a professional statistical programming language (e.g., SAS, R). Emphasizes correct methods, writing and presentation of results	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 310 or STP 311 OR ACO 320 and STP 226
STP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
STP	420	Introductory Applied Statistic	Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, regression analysis, analysis of variance, and nonparametric tests.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
STP	421	Probability	Laws of probability, combinatorial analysis, random variables, probability distributions, expectations, moment-generating functions, transformations of random variables, and central limit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 or Visiting University Student
STP	425	Stochastic Processes	Markov chains, stationary distributions, pure jump processes, 2-D order processes, and other topics in stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 371 with C or better; STP 421 with C or better OR Visiting University Student
STP	427	Mathematical Statistics	Limiting distributions, interval estimation, point estimation, sufficient statistics, and tests of hypotheses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 or STP 421 with C or better; STP 281 or 420 with C or better OR Visiting University Student
STP	429	Applied Regression	Statistical inference for controlled experimentation. Multiple regression, correlation, analysis of variance, multiple comparisons, and nonparametric procedures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): STP 420 with C or better OR Visiting University Student
STP	450	Nonparametric Statistics	Rank- and order-based tests and estimation procedures for 1 sample and 2 or more related or independent samples, measures of correlation, and introduction to resampling methods, including bootstrap and randomization tests.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 310

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STP	451	Quality Improvement	In-depth concentration on statistical process control for attribute and variables data, process capability analysis and measurement systems analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 311
STP	452	Multivariate Statistics	Statistical analysis of multivariate data including methods for preparation and presentation of multivariate data, MANOVA, discriminant analysis, principal component analysis, factor analysis, cluster analysis, random forests and classification trees.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 311; MAT 343
STP	460	Categorical Data Analysis	Statistical methods for the analysis of categorical (discrete, count) data. Topics include exact and approximate tests and confidence intervals for one- and two-binomial proportions, contingency tables, generalized linear models, logistic regression and loglinear models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 310, 311; MAT 272
STP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
STP	485	Statistics Capstone	Students work in a team and partner with a client to solve a real-world problem requiring statistical analyses. Emphasizes problem development, integration of technical skills, teamwork and communication among the students and with the client. Requires regular meetings and presentations with team, client and faculty advisor.	N	LEL	N	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: Senior standing; STP 310, 311, 6 additional hours of upper-division STP excluding STP 492, 493, 498, 499
STP	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
STP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
STP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student
STP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	495	Undergraduate Research	Supervised research in statistical or probability studies.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours. Credit is allowed for only MAT 494 (UG Research in Math) or STP 495
STP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-7		
STP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
STP	501	Theory of Statis I: Dist Thry	Introduces rigorous probability theory, including distributions and expectations of random variables, transformations of random variables and order statistics, generating functions and basic limit concepts. Supplements the understanding of applied statistics with a firm grasp of the probabilistic underpinnings of theoretical statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking); Credit is allowed for only STP 501 or STP 598, Theory of Statistics I
STP	502	Theory of Stats II: Inference	Pesents techniques and basic results of mathematical statistics at a rigorous level. Develops the structure of statistical inference procedures, including the principles of data reduction, theory of estimation, confidence sets, hypothesis testing, and prediction for common parametric models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 501 with B- or better; Credit is allowed for only STP 502 or STP 598, Theory of Statistics II
STP	505	Bayesian Statistics	Provides knowledge of Bayesian statistical methods. Covers the essential conceptual ideas for Bayesian analysis and discusses a variety of computational ideas that facilitate a Bayesian analysis in real-world applications. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including exposure to mathematical proof, linear algebra, multiple semesters of calculus, exposure to coding and a basic course in statistical concepts and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 505 or STP 598 (Bayesian Statistics)
STP	526	Theory/Statistic Linear Models	Multinormal distribution, distribution of quadratic forms, full and nonfull rank models, generalized inverses, unbalanced data, variance components, and the large sample theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	527	Statistical Large Sample Thry	Types of convergence, central limit theorems, theory of maximum likelihood estimation, efficiency, robustness, influence functions, theory of bootstrap methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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STP	530	Applied Regression Analysis	Method of least squares, simple and multiple linear regression, polynomial regression, analysis of residuals, dummy variables, and model building.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	531	Applied Analysis of Variance	Factorial designs, balanced and unbalanced data, fixed and random effects, randomized blocks, Latin squares, analysis of covariance, and multiple comparisons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	532	Applied Nonparametric Stats	One-sample test, tests of 2 or more related or independent samples, measures of correlation, and tests of trend and dependence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	533	Applied Multivariate Analysis	Discriminant analysis, principal components, factor analysis, cluster analysis, and canonical correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	535	Applied Sampling Methodology	Simple random, stratified, cluster sampling; variance estimation in complex surveys; nonparametric superpopulation approaches; nonresponse models; computational methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	540	Computational Statistics	Presents computational tools for statistical inference and data analysis. Uses R software (the lingua franca of statistics) in a wide variety of examples. Emphasizes simulation of random variables, Monte Carlo experiments, evaluation of statistical models via cross-validation, construction of confidence intervals via bootstrap and hypothesis testing via permutations. Focuses on the numerical solution of least squares problems, on stepwise methods for model building and on estimation of regression models for high-dimensional data. Presents computational tools for maximum likelihood estimation with an emphasis on estimation of logistic regression models. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including mathematical proofs, linear algebra, multiple semesters of calculus, coding and statistical concepts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 540 or STP 598 (Computational Statistics)
STP	560	Experimental Statis in Biology	Principles of experimental design, hypothesis testing and advanced data analysis in the biological sciences using statistical software (R and/or SAS). Applies statistical topics to biological data and emphasizes the identification of the appropriate statistical methodology. Topics include exploratory data analysis with visualization, experimental design, categorical data analysis, generalized linear modelling, survival analysis, CART methods and power analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BIO 614
STP	581	Statistical Consulting Clinic	Provides practical experience in the application of statistical theory and methods to problems from a wide variety of disciplines, exposing students to a diverse range of data types and clients. Develops nontechnical consulting skills, for example explaining statistical concepts to non-statisticians, writing reports, and making oral presentations.	N	PRA	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 530 with B or better; STP 531 with B or better; Credit is allowed for only STP 581 or STP 598 (Statistical Consulting)
STP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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STP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
STP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
STP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
STP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
STS	101	Intro Science, Tech & Society	Overview of the basic issues, definitions and literature involved in the study of science, technology and human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only STS 101 or STS 304 OR Visiting University Student
STS	110	Global Technology&Development	Introduces awareness and understanding of how technology, processes of globalization, and society influence one another. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317
STS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	235	Technology and Urban Systems	Focuses on the relationship between technology and urbanization, especially on how technological innovation and change impact all aspects of urban systems, including urban social and economic development, sustainability, governance, environmental, and community change.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	
STS	260	Politics of Sci andTechnology	Explores the relationship among government, politics, science, and technology, especially the interdependence of public policy and science and technological pursuits.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	301	Research in Sci & Tech Studies	Examines methods of inquiry in the social sciences with emphasis on STS, including both qualitative and quantitative approaches, philosophy of science, and scientific revolutions.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	302	Philosophy of Science & Tech	Focuses on the nature and implications of science as a body of knowledge, set of practices, specific methods, and how these differ from other human enterprises and activities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	303	History of Science&Technology	Examines the history of technology within social, cultural, political, and economic contexts and the critical relationship between society and technology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): minimum 45 hours
STS	304	Science, Technology & Society	Overview of the major issues associated with the study of science, technology, and human systems, including theoretical approaches. Credit is given for only STS 304 or 101.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only STS 101 or STS 304 OR Visiting University Student
STS	305	Science and Social Theory	Explores the different theoretical traditions that inform social interpretations of science, including awareness of the historical traditions that define these interpretations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	306	Social Effects of Science Tech	Examines the effects of science and technology on social life and the contexts in which those effects manifest.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	317	Sci, Tech, & Global Engagement	Overview of international issues associated with both the development and deployment of technologies, including matters concerning international relations. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317

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STS	318	Science, Tech, & Government	Examines the foundations of the interrelationship of science, technology, and democratic governance, with emphasis on the American political system.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	325	Science, Tech, & Public Policy	Examines the interaction of science and technology with American domestic policy.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	328	Science, Technology, & Culture	Overview of technology and international cultures, including cultural definitions of science and technology. May intersect issues of culture and religion.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	329	Tech in Developing Countries	Covers specific issues relating to building technological capability in newly industrializing countries.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	330	Info Tech and Globalization	Examines the intersection of advances in information technology and globalization and the impact of these processes on human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	
STS	331	Ethical Issues in Sci and Tech	Examines the interconnections between values and science and technology by examining such topics as computers and privacy, medical malpractice, reproductive technologies, patents, and hazardous facilities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	332	Global Issues in Science & Tech	Examines contemporary international debates in science and technology and how those issues impact globalization.	N	SEM	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	364	Science, Tech, & Nat'l Security	Examines how changing technologies impact all aspects of national security policy in the United States.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	401	Statistics in Sci&Tech Studies	Introduces statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures, and inferential statistics.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): MA general studies requirement satisfied OR Visiting University Student
STS	425	Law, Values, Sci, & Technology	Examines the interconnections of law, values, and science and technology with a view to establishing their reciprocal relationships.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
STS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
STS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
STS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
STS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
SWG	501	Micro Human Behav Soc Environ	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre/Co-requisite: masters or doctoral in Social Work major
SWG	502	Macro Human Behav Soc Environ	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspective in a macro context.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student
SWG	510	Foundation Practice I	Basic social work methods with emphasis on the problem-solving process as it pertains to individuals, families, and small groups.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW student; Pre- or corequisite(s): SWG 501 with C or better if completed
SWG	511	Foundation Practice II	Theory and methods of direct practice with groups and selected practice models.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Master or Doctor Social Work student; SWG 510 with C or better
SWG	514	Bridge Seminar I	Professional social work practice at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist or Social Work - Advanced Standing - Direct Practice or Social Work - Advanced Standing (Planning, Administration and Community Practice) MSW student
SWG	515	Bridge Seminar II	Generalist practice problem-solving skills with diverse individuals, groups, families and systems at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre- or corequisite(s): SWG 514
SWG	516	Social Work Skills Seminar	Focuses on the acquisition of practice skills for advanced interaction with individuals, families, groups and communities.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Corequisite(s): SWG 514; SWG 515

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SWG	519	Research Methods/Social Work	Conceptual foundations and methods of nomothetic research in social work. Includes problem identification, hypothesis formulation, measurement, sampling, and experimental design.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Master or Doctor Social Work student
SWG	526	Mental Health/Sentencing	Helps justice system professionals understand existing mental health diagnoses, the DSM-5, and how specific DSM-5 categories are associated with specific types of crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	527	Mitigation Death/Life Cases	Issues and skills for practicing as a mitigation specialist in cases of death and life without parole.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	528	Presentence Investigations	Examines the functions and objectives of presentence investigation reports and prepares students to perform different types of investigations for limited and general jurisdiction courts for local, state and federal courts.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	529	Alternatives Penal Sanctions	Prepares individuals to practice as sentencing advocates on defense teams, as consultants to problem-solving courts, or as private presentence investigators hired by the defense to advocate for alternatives to incarceration.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	531	Social Policy and Services	Conceptual, analytical, and historical perspectives on the social welfare institution. Emphasizes poverty and inequality. Principles of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Masters or Doctoral of Social Work student
SWG	533	Diversity/Oppression/Soc Work	Explores issues of social inequality related to disability, ethnicity, gender, race, and sexual orientation. Emphasizes populations of the Southwest.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Masters or Doctoral Social Work student
SWG	540	Professional Experience I	Explains the historical origins of the social work profession, discusses the values and ethics unique to the profession, and familiarizes students with resources available at the school and the university for students enrolled in the MSW online program.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Standard Program MSW student; Credit is allowed for only SWG 540 or SWG 598 (Professional Seminar I)
SWG	541	Field Practicum I	With SWG 542, two consecutive semesters (480 hours) of supervised social work practice in an approved placement.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; Pre- or corequisite(s): SWG 510 with C or better if completed
SWG	542	Field Practicum II	See SWG 541	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; SWG 510 with C or better; SWG 541 with a Y grade; Pre- or corequisite(s): SWG 511 with C or better if completed
SWG	545	Domestic Violence & Nat AmCorp	Provides students with basic domestic violence education and training in preparation for working with domestic violence survivors in the community, as well as support throughout their first semester of internship placement. Provides training in evidence-based interventions, including the implementation of an evidence-based safety decision aid, a tool to enhance risk assessment, safety planning, and referral to additional community resources. Also emphasizes the unique mission of AmeriCorps members through the Corporation for National & Community Service.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545
SWG	546	Teen Dating Violence Prevent	Covers theoretical and practice frameworks for understanding and preventing teen dating violence. Specifically, provides an overview of intimate partner violence in the adolescent developmental context, considers risk factors and impacts of victimizations and investigates methods of assessing and preventing dating violence in multiple contexts. Students critically engage with how practitioners and researchers might engage in dating violence risk reduction and prevention throughout the course, building up to a final project in which they develop their own prevention program. Focuses on issues of gender throughout the semester, and highlights the importance of community-based and culturally-responsive prevention and intervention. Students have the opportunity to think critically about the current understanding of dating violence, explore their own attitudes, and develop ideas for effective intervention and prevention	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	554	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 554 or SWG 591 (Overview of Addictions) or SWU 454 or SWU 498 (Overview of Addictions)

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SWG	556	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 458 or SWG 556 or SWG 591 (Immigrants and Refugees)
SWG	557	SW Borderland Immigratrn Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Credit is allowed for only SWG 557 or SWU 457
SWG	558	Intro Behavioral Hlth Services	Explores mental health. Develops a basic understanding of mental health and co-occurring conditions. Gains an understanding of public- and employer-financed contemporary behavioral health services with a focus on Arizona models.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 458 or SWG 558 or SWG 591 (Introduction to Behavioral Health Services)
SWG	559	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 459 or SWG 559 or SWG 591 (Spirituality & Helping Profession) or SWG 598 (Spirituality and the Helping Professions)
SWG	560	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 460 or SWG 560 or SWG 591 (Legal Issues in Social Work)
SWG	561	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 461 or SWG 561 or SWG 591 (Lesbian and Gay Issues)
SWG	562	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 562 or SWG 591 (International Social Work) or SWU 462 or SWU 498 (International Social Work)
SWG	563	Multicul Perspvtv Comm Devepmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWG	570	Aging in Perspective	Biopsychosocialspiritual perspectives on aging, including intergenerational matters, international trends, policies, programs, services and issues unique to populations of the Southwest.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 570 or SWG 591 (Aging Soc Wk Perspective)
SWG	571	Mental Health Aspects of Aging	Older adult mental health assessment, treatment, planning, policy and service delivery from a cross-cultural, interprofessional, intergenerational, international and continuum-of-care perspective.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 571 or SWG 591 (Mental Health & Aging)
SWG	572	Interprofessional Hlthy Aging	In-depth examination of healthy aging, interprofessional practice and interprofessional practice approaches designed to foster healthy aging for older adults.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	573	Policies: Promote Hlthy Aging	Age-based policy process and various social policies/programs that address financial, medical and psychosocial needs of older Americans.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	577	Traumatic Death	Explores the various experiences of grief, trauma and bereavement through a phenomenological perspective and using creativity, art, literature, poetry, indigenous wisdom and evidence-based research. Practice techniques and psychosocial care to the traumatically bereaved. Examines the micro, mezzo and macro aspects of death and grief in contemporary society. Theory, philosophy and direct practice with individuals, families and groups experiencing traumatic death and grief.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only SWG 577, 591 (Trauma & Death Counseling) or 598 (Trauma&Death: Counseling, Theory, &Practice Issues)

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SWG	579	Critical Incident Stress Mgt	Theory and research behind coping strategies and mechanisms commonly experienced by Emergency Management Teams (EMT) and DHS. Explores topics of stress, trauma, vicarious trauma and mass trauma as experienced by the individual and large populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	585	Macro Social Work Practice	Examines communities and human service organizations as social systems. Introduces strategies for initiating planned change.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Masters or Doctoral Social Work student
SWG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): SWG 606, 610, 623, or 645 with C or better; Pre- or corequisite(s): SWG 614 with C or better if completed; SWG 632 with C or better if completed; SWG 646 with C or better if completed
SWG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		Pre-requisites: Master Social Work student
SWG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Social Work	1-12		
SWG	603	Soc Work Prac-Health Settings	Advanced social work practice in health and behavioral health settings, focusing on enhancement of client functioning and quality of life.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	604	Adv Soc Wrk Practice in Health	Addresses the crucial social work practice issues of health and healthcare in the new millennium.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 603 with C or better
SWG	606	Assessment of Mental Disorders	Theories and concepts of mental health and illness. Attention to classification systems and nomenclature used in assessing mental disorders.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW major or Social Work (Planning, Administration and Community Practice) or Social Work (Advanced Generalist) MSW major OR SWG 511 with C or better; SWG 542 with Y grade
SWG	608	Ecol Appr Pract Child, Yth Fam	Provides a theoretical and practical orientation to working with children, youth, and families from an ecological strengths perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	609	Adv Prac Child Welfare Fam	Focuses on substance abuse, family violence, and serious mental illness in practice with families and children in the child welfare system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 608 with C or better
SWG	610	Adv Social Work Practice III	Knowledge and skills for advanced practice with individual and families.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with Y grade; SWG 640 with C or better
SWG	611	Social Work with Families	Theory, concepts, and skills for working with diverse family populations. Emphasizes a systems and integrative approach.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	612	Social Work with Groups	Practices applications of knowledge and skill to social work with groups.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major

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SWG	613	Adv Soc Wk Prac/Behav Hlth	Treatment of prevalent disorders encountered by social workers, selected from the following: anxiety disorders, personality disorders, depression, and schizophrenia.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 603 with C or better
SWG	614	Adv Generalist Soc Wk Prac IV	Knowledge and skills for advanced practice with groups and communities.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 640 with C or better
SWG	617	Adv Soc Wk Prac/Children	Theory, research, and intervention that focus on children and adolescents.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 608 with C or better
SWG	618	Adv Pract in Domestic Violenc	Theory, research, intervention, and prevention strategies relevant to child maltreatment, partner abuse, and elder abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	619	Practice-Oriented Research	Accelerated course in application of scholarly and scientific principles to field practice, problem formulation, interventional procedures, and impact assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 519 with C or better or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	621	Integrative Seminar	Explores the fit between theoretical frameworks and practice with clients. Requires presentation of empirical studies with clients.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 603 or 608 with C or better; SWG 619 with C or better; Pre- or corequisite(s): SWG 604, 606, 609, 613, 617, or 661 with C or better if completed; SWG 641 with Y if completed
SWG	623	Program Evaluation	Research design techniques and data collection in human service agencies and communities. Analysis for program evaluation and needs assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) or Social Work (Advanced Generalist) MSW major OR SWG 519 with C or better; SWG 542 with Y grade
SWG	626	Crisis Intervention/Short-Term	Comprehensive analysis of crisis and solution-focused brief intervention strategies and approaches used in advanced social work practice.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	630	Brief Social Work Intervention	Concepts and techniques of solution-focused, systematic, and strategic approaches to therapy in the context of brief therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major
SWG	632	Policy Practice	Develops advanced knowledge and skills in social welfare policy analysis, policy formulation, and advocacy and intervention for policy change.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 531 with C or better or Social Work (Advanced Direct Practice) MSW major or Social Work (Planning, Administration and Community Practice) MSW major
SWG	633	Child Welfare Services	Examines, using ecological and system theories, services that supplement, support, and substitute for parental care of children.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	640	Professional Seminar II	Applies social work's knowledge base to advanced generalist social work.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW major OR SWG 542; Credit is allowed for only SWG 640 or SWG 598 (Professional Seminar II)
SWG	641	Adv Practicum: Direct Prac I	With SWG 642, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student or SWG 542 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 603 or 608 with C or better if completed
SWG	642	Adv Practicum: Direct Prac II	With SWG 641, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 603 or 608 with C or better; SWG 641 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 604, 609, 613 or 617 with C or better if completed

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SWG	643	Adv Practicum: Plan,Soc Wk Adm	With SWG 644, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Planning, Administration and Community Practice) MSW student or SWG 542 with Y grade; Pre- or corequisite(s): SWG 623, 685 with C or better if completed
SWG	644	Adv Pract: Plan,Soc Wk Prac II	See SWG 643.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 623 with C or better; SWG 685 with C or better; SWG 643 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 681 with C or better if completed; SWG 682 with C or better if completed
SWG	645	The Professional Experience III	With SWG 646, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW student OR SWG 542 with Y grade; SWG 640 with C or better; Pre- or corequisite(s): SWG 610
SWG	646	Professional Experience IV	With SWG 645, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 610 with C or better; SWG 645 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 614
SWG	647	The Domestic Violence Movement	Provides training and education in preparation for political and community advocacy to address domestic violence and sexual assault from a macro social work perspective. Provides education in the history of the domestic violence movement, including its roots in the feminist perspective and the rape crisis movement. Furthermore, students critically analyze the domestic violence movement, examining the role of marginalized populations within the movement as well as unintended consequences of the movement. Concludes by planning for the future of the domestic violence movement, including next steps in policy advocacy, programming and community engagement.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	648	Intimate Partner Violence	Examines the use of intimate partner violence (IPV, aka, domestic violence) risk assessment in social work practice with survivors of IPV. Examines theories and research that explain, define and describe IPV risk assessment; the intended uses and predictive value of the various available IPV risk assessment instruments; and the use of IPV risk assessment instruments in social work practice interventions, including within risk informed collaborative interventions (e.g., the Lethality Assessment Program). Presents an evidence-based practice framework for the use of risk assessment in social work practice. Encourages students to think critically about the use of risk assessment across social work practice settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	654	Introduction to Sexual Abuse	Develops general knowledge and skills for working with persons who have been impacted by sexual abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	655	Qual Life Master Mindfulness	Addresses key elements of a healthy life style contributing to wellness and disease through experiential learning and evidenced-based research.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	656	Treating the Whole Person	Addresses treating the "whole person's" physical and behavioral health through interviewing, intervention, and treatment within the context of an interdisciplinary model.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	657	Holistic Therapies Modern Time	Historical development and research of the ancient healing teachings of traditional Chinese medicine, Ayurvedic medicine, homeopathic, naturopathic, and indigenous medicine and how they are used in today's health systems.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	661	Cognitive Behavior Therapy	Knowledge and skills to understand and apply cognitive-behavioral approaches to treatment (CBT), including diagnostic information and empirically supported interventions targeted to individuals, families and groups across the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student OR Pre- or corequisite(s): SWG 542 with Y grade

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SWG	662	Soc Wk Practice w/Adolescents	Advanced elective focuses on working with adolescents in a variety of intervention settings (e.g., mental health agencies and schools).	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Social Work Practice With Adolescents) or 662
SWG	663	Clinical Trauma Treatment	Explores the assessment and treatment of PTSD in people throughout the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Clinical Trauma Treatment) or 663
SWG	664	Treatment Substance Disorders	Knowledge and skills to understand substance abuse disorders, including diagnostic information and evidence-based interventions targeted to individuals, families and groups.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Treatment Substance Use Disorders) or 664
SWG	681	Social Work Administration	Administrative skill building and theory application within human service nonprofit social work settings.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 623 with C or better; SWG 685 with C or better; Corequisite(s): SWG 682
SWG	682	Community Participation Strats	Reviews strategies to involve citizens and the consumers of social and human services in community decision-making systems. Participation is viewed as a means to facilitate the empowerment of oppressed peoples.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 623 with C or better; SWG 685 with C or better; Corequisite(s): SWG 681
SWG	685	Program Planning Soc Services	Social services planning process; includes needs assessment, goals and objectives, program design, budgeting, management information systems, and program evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) MSW student OR SWG 542 with Y grade; SWG 585 with C or better; Corequisite(s): SWG 623
SWG	686	Dev Grants & Fund Raising	Identifies potential funding sources, technical and interpersonal/political aspects of proposal development and fund raising.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	687	Public Policy and Advocacy	Covers public policy at the federal level, including administrative, legislative and judicial policy. Students understand how to develop congressional policy and methods to engage in advocacy at the federal level to impact macro social work practice.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 687 or SWG 591 (Advocacy and Public Policy)
SWG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisites: MSW or MSW Advanced Standing student
SWG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): SWG 606, 610, 623, or 645 with C or better; Pre- or corequisite(s): SWG 614 with C or better if completed; SWG 632 with C or better if completed; SWG 646 with C or better if completed
SWG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solutions	School of Social Work	1		Pre-requisites: MSW, MSW Adv Standing, or PhD student
SWG	718	Qualitative Research Methods	Provides comprehensive qualitative research methods training for doctoral students to complement their quantitative survey research methods knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 718 or 791 (Qualitative Research Methods)

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SWG	719	Quantitative Research Methods	Provides the tools for independently designing and conducting methodologically sound, ethical, quantitative research that advances social work and social welfare knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student
SWG	720	Phil of Sci Issues in Soc Wk	Critical examination of social science, social work practice, and policy in terms of philosophical assumptions and varying frames of reference.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Master or Doctor Social Work student.
SWG	721	Statistics	Logic and application of statistical methods for analyzing social welfare-based data pertaining to social work. Includes ethical issues concerning the appropriate application, interpretation and use of social research, as well as the potential limitations and biases of applications that fail to adequately consider issues of population diversity. Students learn to independently design a research project from start to finish employing statistical analysis of primary data.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: doctoral major
SWG	722	Pedagogy in Social Work	Prepares doctoral students to teach for the profession of social work. Provides an opportunity for students to develop or enhance their philosophy of teaching, their attitudes toward learning, teaching and students, and the knowledge and skills necessary to teach effectively. Explores teaching to the diverse students present in social work programs, the challenges that teaching presents and the responsibilities that come with social work education.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Doctoral student; Credit is allowed for only SWG 722 or SWG 791 (Pedagogy in Social Work)
SWG	723	Proposal Development	Provides an opportunity for doctoral students to formulate a dissertation proposal or a research plan for a three-paper option. Provides a forum for presenting ideas, receiving feedback and defending one's proposal.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 723 or 791 (Proposal Development)
SWG	731	Welfare State	Examines the evolution of the welfare state as a problem of political economy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 731 or 791 (Welfare State)
SWG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solutions	School of Social Work	1		
SWG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWU	171	Introduction to Social Work	Descriptive and historical perspectives of social problems, social justice issues and society's response to them.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & H	
SWU	180	Intro to LGBT Studies	A historical, socio-cultural introduction to lesbian, gay, bisexual, transgender, transsexual, and intersexed communities and their resilience to challenges and barriers.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & C	Credit is allowed for only SWU 180 or SWU 194 (Introduction to LGBT Studies) OR Visiting University Student
SWU	181	Econ: Social Issue Perspective	Introduces economic principles through the lens of contemporary social issues for social work and related fields.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Credit is allowed for only SWU 181 or SWU 194 (Economic and Social Issues in Perspective) OR Visiting University Student
SWU	182	Soc Serv Perspective Gov't	Explores levels of government and policy practice in advancing social and economic justice and effective social services within the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Credit is allowed for only SWU 182 or SWU 194 (AZ/National Government: Social Work Perspective) OR Visiting University Student

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SWU	183	Intro Ethics:Soc Issue Perspec	Introductory exploration of ethics from a historical and multicultural perspective viewed through the lens of contemporary social issues.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	HU	Credit is allowed for only SWU 183 or SWU 194 (Intro Ethics: Social Issues Perspective) OR Visiting University Student
SWU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		
SWU	250	Stress Management Tools I	Helps students develop an understanding and behaviors to create a healthy balance in their lives by studying the bio/psycho/social aspects of wellness.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	
SWU	291	Social Service Delivery Syst	Federal, state, private not-for-profit and for-profit social service delivery system's purpose, structure, and professional roles. Includes 40 volunteer hours.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		
SWU	295	Found of Social Wk Practice	Theoretical foundation and skill base for effective culturally competent communication and interviewing with individuals, families, small groups, and larger systems.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & C	Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	302	Human Biology for Soc Workers	Overview of human anatomy and physiology, and the reciprocal relationship between physical and social environments. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		
SWU	303	Micro Human Behav Social Envir	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	L or SB	Prerequisite(s): PSY 101 or SOC 101; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; SWU 311 with C or better; SWU 312 with C or better OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	306	Ethics in Social Services	Focuses on following the NASW Code of Ethics in making ethical decisions in social service settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; PHI 101, PHI 105, or SWU 183; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	310	Social Work Practice I	Introduces social work methods, emphasizing the following skills: relationship development, cross-cultural interviewing, communication patterns, and case-recording.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 or SWU 271 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 303 with C or better if completed
SWU	311	Integrative Soc Wk Practice	Social work practice skills emphasizing cross-cultural interviewing, assessment and professional recording.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 312 OR Visiting University Student
SWU	312	Integrative Soc Wk Prac Skills	Applies social work content from SWU 311 focusing on practice skills and professional behavior.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 311 OR Visiting University Student
SWU	320	Research Methods in Social Wk	Applies scientific principles to field practice, problem formulation, intervention procedures, and impact assessment in social work.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre- or corequisite(s): SWU 311 with C or better if completed; SWU 312 with C or better if completed OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	321	Statistics for Social Workers	Teaches social work students how to use and interpret descriptive and inferential statistics in social work practice. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	CS	Prerequisite(s): MAT 142 or an MA general studies course OR Visiting University Student
SWU	332	Social Policy and Advocacy	Contemporary social, political and economic issues. Special emphasis on advocating for oppressed populations. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Community Advocacy and Social Policy major or Public Service and Public Policy major; POS 110 or POS 310 or SWU 182 OR Visiting University Student

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SWU	340	Macro Human Behav Social Envir	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspectives in a macro context	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Pre- corequisite(s) with C or better if completed: SWU 303; SWU 310 OR SWU 303; SWU 311; SWU 312 OR Comm Advocacy & Soc Poly BA major OR Visiting University Student
SWU	349	Stress Management Tools II	Developing mindful strategies toward managing stress, developing instinct awareness; healthy decisions in nutrition, relationship with self, others and creating a personal carbon footprint.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Credit is allowed for only SWU 349 or SWU 294 (Stress Management Tools II) OR Visiting University Student
SWU	350	Whole Person Health	Development of mindful strategies toward managing stress and identification, implementation and integration of skills and knowledge for well-being across the lifespan.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	351	Sustainable Living-Mndful Eating	Addresses issues related to foods we eat, how we eat, and impacts of choices on health, the environment, locally and globally.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	374	Diversity/Oppression/Soc Wk	Issues of social inequality related to race, ethnicity, gender, sexual orientation, and disability. Emphasizes populations of the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Pre- or corequisite(s): Community Advocacy and Social Policy BA major OR SWU 310 with C or better if completed OR SWU 311 with C or better if completed; SWU 312 with C or better if completed OR Visiting University Student
SWU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
SWU	410	Social Work Practice II	Knowledge and skills in social work practice with individuals and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; PHI 101 or PHI 105 or PHI 306 or SWU 183; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 412; SWU 413 OR Visiting University Student
SWU	411	Social Work Practice III	Knowledge and skills in social work practice with groups, communities, and organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410, 412, or 413 with C or better; Corequisite(s): SWU 414; SWU 415 OR Visiting University Student
SWU	412	Field Instruction I	16 hours a week of supervised practice in an approved placement. "Y/E" grade only.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 410; SWU 413 OR Visiting University Student
SWU	413	Field Instruction Seminar	Field-focused seminar, including practice evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412 OR Visiting University Student
SWU	414	Field Instruction II	16 hours a week of supervised practice in an approved placement. Y/E grade only.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with Y grade; SWU 413 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 411; SWU 415 OR Visiting University Student
SWU	415	Integrative Field Seminar	Field-focused seminar to help students integrate practice and theory.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with C or better; SWU 413 with C or better; Corequisite(s): SWU 411; SWU 414 OR Visiting University Student
SWU	416	Domestic Viol & Natl AmeriCorps	Prepares students for working with domestic violence survivors in the community and to implement evidence-based practices in domestic violence services.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545 OR Visiting University Student

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SWU	417	Tech, Interpersonal Relationships	Examines the influence, impact and role of information communication technologies within interpersonal relationships. Draws from theoretical concepts, current events and student experiences to understand the risks and benefits to incorporating mediated communications into personal relationships. Also examines ways that technology can further abuse and mistreatment of marginalized groups by reviewing research about online harassment, cyberbullying, cyberstalking, monitoring, surveillance, and other forms of online exploitation. Students use readings, lectures and assignments to understand ethical implications when incorporating technology into our social lives.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours
SWU	418	Global Violence Against Women	Examines experiences of and responses to violence against women (VAW) from global perspectives. Throughout the semester students explore drivers and consequences of violence against women across geographic and practice contexts. Examines critical approaches and evidence-based practice modalities. While the focus of the course is on women's experiences of violence, students have opportunities to explore a wide range of identities related to gender, sexual orientation, race, social status and differing abilities. Draws from local expertise in the practice community and offers integration of classroom content with contemporary issues related to both policy and practice at the local, state, national and international levels.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours
SWU	432	Social Policy and Services	Contemporary social, political, and economic issues. Special emphasis on poverty and inequality in the Southwest. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; ECN 211 or SWU 181; POS 110, POS 310, or SWU 182; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412; SWU 413 OR Visiting University Student
SWU	442	Intro to Practice/Children/Fam	Focuses on the characteristics, strengths, and service needs of families and children in the Child Welfare System.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with C or better; SWU 413 with C or better OR Visiting University Student
SWU	450	Mastering Mindfulness	Facilitates mastering mindfulness practice. Students teach a lesson and develop a training proposal that will be implemented and evaluated.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 250; SWU 349
SWU	454	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 454 or SWU 498 (Overview of Addictions) or SWG 554
SWU	456	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 456 or SWU 498 (Immigrants & Refugees) or SWG 556 OR Visiting University Student
SWU	457	SW Borderland Immigratr Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Credit is allowed for only SWU 457 or SWG 557 OR Visiting University Student
SWU	458	Behavioral Health Services	Behavioral health conditions; their impact on the individual, family and community; and historical and contemporary service models.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 458 or SWU 498 (Behavioral Health Services) or SWG 558 OR Visiting University Student
SWU	459	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 459 or SWU 494 (Spirituality and the Helping Professions) or SWU 498 (Spirituality & Helping Profession) or SWG 559
SWU	460	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 460 or SWU 498 (Legal Issues in Social Work) or SWG 560 OR Visiting University Student

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SWU	461	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 461 or SWU 498 (Lesbian/Gay Issues) or SWG 561 OR Visiting University Student
SWU	462	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	G	Prerequisite(s): minimum junior standing; Credit is allowed for only SWG 562 or SWU 498 (International Social Work) or SWU 462
SWU	463	Multicul Persptv Comm Develpmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): junior standing; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		
SWU	488	Advocacy Strategies	Comprehensive advocacy approach that spans administrative, legislative and community strategies.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 303; SWU 306; SWU 320; SWU 340; SWU 350; SWU 374; senior standing OR Visiting University Student
SWU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-6		Prerequisite(s): Barrett Honors student
SWU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-6	L	Prerequisite(s): Barrett Honors student
SWU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		
SWU	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-7	L	
SWU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-3		Pre-requisite: Bachelor of Social Work student
TAM	505	Navigating Gbl & RBEs	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. Develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. Deals with the regional business environment. Begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the Latin American business environment. While the emphasis is Latin America, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	511	Global Accounting	Covers the fundamentals of financial accounting and managerial accounting in a global environment. Financial accounting focuses on providing useful information to users for external decision making. By understanding the structure and process of preparing a balance sheet, income statement and statement of cash flows, students learn how to interpret, analyze and evaluate domestic and international companies. Managerial accounting focuses on providing useful information for internal decision making. By identifying and understanding different types of cost information, students learn how to utilize and prepare cost-volume profit analysis, relevant cost analysis, activity-based costing and performance evaluation within global organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TAM	521	Finan Value Creation for Ldrs	Covers fundamental concepts and practices of modern financial management within a market-oriented framework. Develops analytical skills for sound financial decision making and management. Emphasizes practical applications and equips learners with tools necessary to make investment and financing decisions in a global setting. Achieves learning via problem solving, video lectures, case analysis and discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	530	Leading Digital&Data Decision	Includes global examples across industries and how leaders make managerially relevant decisions based on data. Explores how companies benefit from a digital ecosystem including sensors (IoT), Blockchain, artificial intelligence (AI), and augmented reality (AR) that move data-driven insights from the data scientist to the boardroom. Examines implications for customer relationship management, privacy, security and global government regulation that are shaping and are shaped by the democratization of data. Examines the importance of data visualizations and dashboarding for decision making that transform mere data into information and insight. Identifies how to be a more effective diagnostic leader in a data-rich world, identifying opportunities to improve business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	531	Project and Ops Leadership	Strategies and challenges associated with leading projects and designing and improving service and manufacturing processes. Topics include project management, value-chain structures, supplier partnerships, logistics, risk management and value-stream mapping.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	534	Global Venture Creation	Covers the most essential topics for first-timer startup founders. Teaches how to quickly identify and test new business ideas, and how to launch a new venture when an idea worth pursuing is found. Provides a good understanding of the entrepreneurial journey and what is involved when launching a new business. Students develop a new business idea, build and test business model and deliver a professional business pitch at the end of the course. Highly experiential and involves a great deal of customer interactions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TAM 511; TAM 541
TAM	541	Strat in a Competitive World	Focuses on choices that have an impact on the performance of the entire organization or business start up. Includes the problems faced by, and the decisions made by, executive leaders who have to balance the needs and expectations of stakeholders including customers, shareholders and employees with the requirements of local country practices and government regulations. Analyzes problems and decisions from the point of view of the founder, general manager or chief executive who has responsibility for the welfare of the entire organization. By focusing on policy decisions, concerns the choice of goals as well as the organization; management and deployment of scarce resources to pursue these goals within the context of an imperfect, changing and competitive world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	542	Global Ldrshp & Personal Devlp	Personal leadership development is optimized by grounded reflection, self knowledge and continuous learning as we interact with others. Therefore, the personal development part of this course cultivates introspective and skill-building competencies that include conceptual grounding that is based in an experiential learning focus. Discusses self- and other-awareness and engages in group/team interaction, as well as conducts individual self-assessments and individual feedback. In addition to developing ourselves at the personal level, developing ourselves as leaders at the organizational level is imperative to sustainability of the company.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird graduate student

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TAM	557	Gbl Mktg Strat & Mgmt	Focuses on macro issues such as market orientation, segmentation, targeting and positioning and their strategic implications within the context of customer, competitor and context analysis. Emphasizes analytical and managerial decision tools for creating competitive advantage, and the similarities and differences in domestic and global marketing. Also examines how digital transformation has influenced the role of analytics in today's hyper competitive organization. Also focuses on the micro topics used to execute and implement strategies learned in the first part of the course. Covers the marketing mix (4Ps), namely pricing, product, promotion and place, and examines how these tools could be used to add value to firms in an international setting, and how they could be effectively applied to create, price, communicate and deliver value to customers and important stakeholders using quantitative and qualitative analyses.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	582	Comm & Neg in Dyn Gbl Wrlid	Improves global mindset and negotiation skills by focusing on cross-cultural issues, communication issues and negotiation in cross-cultural environments. Provides an in-depth examination of culture, its managerial implications and negotiation. Explores various methodologies to understand and measure national cultures. Embarks on a rigorous and practical journey to examine the impact of national culture, no matter how it is measured, on communication dynamics in a cross-cultural environment and focuses on specific skill sets to help students succeed in such situations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	589	Global Field Seminar	Businesses confront significant differences among countries in regard to industry structures as well as economic, political, societal and cultural forces, especially in the new era of Industry 4.0. These differences create new challenges and opportunities for businesses that extend their activities internationally. Given the tremendous diversity and rapidly changing business environment across the globe, it is important to address (1) the forces impacting a country's business environment, (2) the implications of these factors for business strategies. Provides a framework and an analytical approach to study the dynamics of business environment in a particular region. Conducted on the ground in country, focuses on-site visits to companies and/or government entities, and interactive discussions with speakers. Emphasizes contemporary issues relevant to understanding the business environment.	Y	SEM	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	597	Integrative Project	Integrates business subjects covered in the program online. Helps students fine tune their business plans and prepare presentations for potential fund raising. Provides tools for effective presentation, preparing pitch deck for fund raising and successful negotiation of the term sheets. Learning is achieved via lectures, discussions, presentations and role play as negotiators.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TAM 511; TAM 521; TAM 534; TAM 541; TGM 505; TGM 540; TGM 551; TGM 579
TCL	101	Latinas/os in the U.S.	Historical and contemporary issues in Latina/o communities in the U.S.; focuses on the diverse economic, sociological, cultural and political status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	111	Latinx Cultural Studies	Interdisciplinary analysis of customs, values, belief systems, and cultural symbols; special attention is given to cultural continuity and change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	201	Transborder Society&Culture I	Intensive overview of Mexican origin and Latina/o populations through various sociological, historical, anthropological, economic, political, cultural, literary, and analytical lenses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	202	Transborder Society&Culture II	Examines contemporary transborder culture; issues of health, gender, class, race, sexuality, family, colonialism, community development, migration and well being, within a transnational context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	
TCL	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
TCL	211	Latinx Poetics	Writing seminar on Latina, Latino and Latinx poetics; intensive creative writing workshop.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	

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TCL	220	Trnsbrdr Latina/o Exprsv Cltre	Examines media, literature, performance, and visual art grounded in the historical experiences of transborder Latina/o communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	230	Exprsv Cltr Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Credit is allowed for only ASB 220 or TCL 230
TCL	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
TCL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student
TCL	304	Transborder Research Methods	Emphasizes critical skills: quantitative/qualitative, spatial, archival, and reflexive methodologies, including ethnographic, biographical, historical, and mapping.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours
TCL	305	Transborder Practicum	Field work with faculty incorporating practical experience while honing research skills and ability.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Pre- or corequisite(s): TCL 303 with C or better if completed; TCL 304 with C or better if completed
TCL	310	Folklore of the Southwest	Analyzes the folk beliefs, practices and expression of Mexican-origin and other Latinx populations. Focus includes art, music, performance and every day practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
TCL	315	Latinx Family Structures	Traditional and changing family relationships of Mexican-origin and Latinx populations; emphasizes gender and intergenerational relations and impact of modern society on traditional family values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	321	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
TCL	323	Latina/o Health Issues	Health issues among U.S. Latina/o populations; interplay among political economy, health, family, culture and community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	326	Health of Chicanas and Latinas	Examines gender, ethnicity, and health; critical issues affecting health status of Chicanas and Latinas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better
TCL	327	Health and Migration	Focuses on health status among various immigrants; health trajectories following migrations, adaptive behaviors, health practices, and the role of policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better or minimum 24 hours
TCL	328	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 earned hours; Credit allowed for only REL 326 or TCL 328
TCL	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
TCL	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student

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TCL	335	Hstrol Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
TCL	340	Chicano and Latino Politics	Historical/contemporary analysis of Chicana and Chicano political ideologies, attitudes, strategies, and movements; relations with governmental agencies; and public policy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	
TCL	341	Latinas/os and the City	Examines major contemporary issues affecting Latina/o communities in U.S. cities. Explores elements and trends in the urban social fabric and landscape associated with a growing Latino presence and its connection with ethnic diversity, transnationalism, cultural resistance and resilience. Pays particular attention to the political economy and planning of Latino communities in the Southwest with selected comparison drawn from other U.S. cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR minimum 24 hours OR Visiting University Student
TCL	342	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342
TCL	343	Latinas/os and the Environmen	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
TCL	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
TCL	350	Chicana/o Artistic Production	Overview of Mexican and Chicana/o artistic production from colonial times to present; emphasizes religious and folk art.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C & G	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	351	Chicana/o and Latina/o Art	Intensive analysis of contemporary Chicana/o and Latina/o art movement as appraised within the context of contemporary American art and the art of Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only FMS 352 or TCL 352
TCL	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)
TCL	360	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	Prerequisite(s): AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
TCL	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
TCL	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU	Credit is allowed for only FMS 370 or TCL 370

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TCL	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
TCL	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours; Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student
TCL	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
TCL	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378
TCL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
TCL	422	U.S.-Mexico Border Health	Focuses on identifying health issues affecting Latino/Mexican families in the U.S.-Mexico borderlands using basic epidemiological techniques to analyze regional data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): TCL 321 with C or better
TCL	424	Theory & Pract of Comm Health	Foundations of methodology of community mapping and establishment of community diagnosis, media literacy and advocacy applications for community-based public health.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): TCL 321 with C or better
TCL	443	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
TCL	444	Ethnography Mexico & Bordrinds	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
TCL	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & G	Prerequisite(s): WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development)
TCL	448	Tchng Chicana/o Studies in Sch	Approaches/techniques for infusion of transborder studies content into elementary and secondary curriculum; designed for teachers who work with Mexican and Latino origin students.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours

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TCL	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464
TCL	471	Latinos In Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
TCL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		
TCL	485	Chicana and Latina Writers	Critical reading of Mexican American women authors; emphasis on contemporary (post-1970) poetry, novels, short stories, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): minimum 45 hours
TCL	490	Trnsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latina/o artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL or WST 490
TCL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6		Prerequisite(s): Barrett Honors student
TCL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6	L	Prerequisite(s): Barrett Honors student
TCL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-7		Prerequisite(s): Transborder Chicana/o and Latina/o Studies (Media and Expressive Culture or Transborder Community Development and Health or U.S. and Mexican Regional Immigration Policy and Economy) major; minimum 56 hours
TCL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	205	Intro to Travel and Tourism	Examines the components of the travel and tourism industry at the state, national, and global levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	G	
TDM	225	Intro to Resort & Hotel Mgmt	Introduces local, national and international lodging and food service industries.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
TDM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	345	Meeting & Convention Planning	Basic aspects and skills in planning meetings and conventions. Industry and market overview of certified meeting planners.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better OR Visiting University Student
TDM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
TDM	372	Tourism Planning	Applies economic and regional development concepts and theories to destination product development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 142 or higher with C or better; TDM 205 with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
TDM	386	Convention Sales & Management	The role of convention and visitors bureaus or resort managers, including economic impacts of markets, structure, governance, membership, and advertising.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		

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TDM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	401	Tourism Management	Basic principles of administration and their application in successful administrative situations. Analyzes administrative function, structure, and policies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210 or TDM 210 with C or better; CRD 301 or PRM 301 or TDM 301 with C or better; PRM 303 or TDM 372 with C or better OR Visiting University Student
TDM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
TDM	415	Tourism Transportation Systems	Examines the role of various modes of transportation in domestic and international tourism development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better
TDM	448	Heritage and Cultural Tourism	Provides a solid conceptual understanding of the issues, problems, and management implications associated with heritage and cultural tourism.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 with C or better; Credit is allowed for only TDM 448 or CRD 598 (Heritage and Cultural Tourism) OR Visiting University Student
TDM	458	International Tourism	Global examination of international tourism and its significance as a vehicle for social and economic development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	G	
TDM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
TDM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student
TDM	480	Sustainable Tourism	Tourism has a multitude of impacts, both positive and negative, on people's lives and on the environment. Critically analyzes the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 120 or TDM 205 or minimum 60 hours OR Visiting University Student
TDM	481	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Defines sustainable development, explains the importance of sustainable food systems, recognizes the relationship between local food systems and global food challenges. Connects the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; defines leakage in reference to tourism and food. Creates and applies sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Junior standing; Minimum 60 hours
TDM	482	Sustainable Revenue Management	Introduces the fundamental economic principles that underlie revenue management and the practical application of new analytical technological services in the hotel and resort industry. Uses experienced revenue managers from local resorts and hotels as regular guest speakers and IdeaS system (a revenue management analytics subsidiary of SAS).	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisites: MAT 142 or higher; Minimum 72 hours
TDM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR visiting University Student
TDM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Pre-requisites: TDM 205 or NLM 220 or PRM 210; 72 minimum hours; 2.50 GPA or higher; Non SCRD majors
TDM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student

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TDM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student
TDM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	
TDM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
TDM	520	Sustainable Thinking in TDM I	First in a series of two courses introducing students to the basic concepts of sustainability and their application and implications for tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	521	Sustainable Thinking in TDM II	Second in a series of two courses focusing on how to measure, assess, and plan for sustainability in the tourism industry.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 520 with C or better
TDM	530	Destination Planning I	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	531	Destination Planning II	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 530
TDM	540	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Students learn to define sustainable development; explain the importance of sustainable food systems, recognize the relationship between local food systems and global food challenges; connect the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; define leakage in reference to tourism and food; and create and apply sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	550	Sustainable Tourism Bus Mgmt	Through case study analysis, students learn how sustainability impacts business operations, how successful sustainable businesses identify and assess alternative resource management techniques, and evaluate operational models for embedding sustainability practices into their business models.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	561	Best Practices Preparation	First in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A destination or business is identified to be used as a case study.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Pre- or corequisite(s): TDM 521 with C or better
TDM	562	Best Practices Presentation	Second in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A presentation of a best practices case study is conducted for the class.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): TDM 561 with C or better
TDM	570	Sustainable Tourism	Critically examines the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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TDM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	101	Prof Ed: Student Experience	Introduces all new first-time Mary Lou Fulton Teachers College students to the unique elements, culture, challenges and opportunities of their university. Introduces future educators to the professional educator series and the themes that underpin the series, to include design-thinking, principled innovation, professional identity and legacy-minded thinking and actions.	N	SEM	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College freshmen OR Visiting University Student
TEL	102	Prof Ed: Community Contexts	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Includes a service-learning component addressing a community-identified concern.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College student
TEL	111	Exploration of Education	Education as an instrument in the development of the individual and society and its significance as an American Institution.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	200	Social Embeddedness	Serves as a pathway toward self discovery and professional identity. Course readings, reflections and self assessments help students develop personal and professional goals and goal-setting strategies. Course assignments provide students with a greater level of understanding regarding the reciprocal influences among community and culture and the student's life experiences. Students have an opportunity to clearly define themselves and share topics they are passionate about, as well as locate how they might fit into and contribute to their community.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	201	Pro Ed: My Community Footprint	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Future educators enhance their knowledge, skills and attitudes of the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	202	Pro Ed: My Impact	Advances future educators' knowledge and skills as they apply the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions to become master learners and change agents for civic engagement and toward their personal and professional growth and fulfillment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	203	Planning/Implementing Instr	Prepares future educators to work with participants in a variety of learning environments and diverse contexts. Emphasizes innovative outcome-based and learner-centered approaches to planning and implementing instructional activities constructed using collaborative design-thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	208	Literacy in a Changing World	Examines literacy in the social context and the changing nature of literacy in the 21st century. Areas of inquiry include how students' cultural backgrounds and identities can serve as resources for literacy learning, linguistic diversity, media literacies, multi-modal literacies, and critical literacies. Explores issues of equity and social justice including the role of literacy to empower people into making positive changes in their lives and society.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
TEL	212	Understand/Culturally Diverse	Surveys cultural and linguistic diversity in American education, including education equity, pluralism, learning styles, and roles of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	C	Credit is allowed for only MCE 230 or TEL 212 OR Visiting University Student
TEL	215	Intro to Child&Adolescent Dev	Emphasizes the cognitive, social-emotional, and physical domains of child and adolescent development. From a knowledge base of theory, research, and current issues, students apply learning to developmentally appropriate principles and practices that guide relationships and learning experiences for all children. Uses available technologies; emphasizes the complex ecosystem of culture, ethnicity, family, and school.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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TEL	300	Community, Family & Education	Addresses education in a community and family context. Analyzes education and identifies education-focused community challenges in a broad variety of settings and across multiple times and places.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200 OR Visiting University Student
TEL	311	Instrctn/Mgmt in Inclusive Cls	Planning and delivering instruction, organizing and managing classrooms, and making adaptations for English language learners and students with special needs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	313	Technology Educational Setting	Focuses on using technology in an education setting and addresses the integration of technology in curricular areas for all students. Students receive a broad-based introduction to using and integrating technology into many different educational settings.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): General Studies CS course OR Visiting University Student
TEL	315	Child & Adolescent Development	Physical, cognitive, social, and emotional development during childhood and adolescence; developmentally appropriate principles and practices to facilitate development for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L or SB	
TEL	316	Teaching and Creativity	Engages students in critical thinking and the complex terrain of aesthetic theory and intellectual, academic work and teaching practice. Students apply aesthetic consciousness teaching by teachers developing imagination, creativity, and intuition as tools to use every day in their classrooms. Emphasis on how teachers can integrate the arts into the curriculum, use the arts to support academic content, and develop aesthetic consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. The arts will also be studied as multi-cultural and socio-cultural phenomena, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society. consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. Also studies the arts as multicultural and sociocultural phenomena in support of these ends, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Education majors; Minimum junior standing
TEL	320	Intro to Gifted Education	Overview of a variety of issues related to gifted students from preschool through high school. Provides background in order to create an optimal experience for students, parents and teachers when working with gifted students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	400	Innovation in Ed Endeavors	Pursues innovative solutions to social problems with the courage and ability to impact change in individuals, communities and organizations. Reviews community problems, challenges or areas of improvement; learns underlying principles of social enterprise; and develops innovative methods that empower individuals and support educational initiatives.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300 OR Visiting University Student
TEL	404	Issues in Ed&Policy Reform US	Specialized topics related to current issues in education with a focus on education reform efforts from the late 20th century into the 21st century. Explores current reform efforts in education as part of the larger public policy agenda in the United States, analyzing how external influences shape present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-reqs for TEL 404
TEL	405	History of Ed&Policy Reform US	Specialized topics in education history with a focus on education reform efforts from pre-Revolutionary War time to the end of the 20th century. Explores the past reform efforts in education as part of what was happening historically in the United States, analyzing how those efforts have shaped the present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 405 or TEL 494 (History of Education & Policy Reform in the US)
TEL	410	Leadership and Advocacy in Ed	Educators who take an active stance through advocacy and leadership are well-equipped to create societal change. Students learn about styles of leadership that are fitting for this need, study advocacy techniques, then position themselves as advocates and leaders as they create a plan, with goals, to address an identified community problem, challenge or area of improvement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300; TEL 400 OR Visiting University Student
TEL	420	Curri Strat for Gifted Learner	Overview of a variety of ways in which to create and adapt curriculum for gifted students from preschool through high school. Provides a broad range of resources for classroom teachers to use in order to help gifted students work to their full potential in a heterogeneously grouped classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
TEL	430	Learning Outside of School	Studies and methods from a variety of nonschool environments for learning and development. Teaches knowledge and skills such as methods of identifying and evaluating free-choice learning that occurs through museum going, hobbies, family learning, media, community programs, sports, public health campaigns, and more. Covers career opportunities for educators in key creative environments besides classrooms.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 430 or TEL 494 (Learning Outside of School) OR Visiting University Student
TEL	431	Learning in Workplaces	School isn't the only place where people learn! Once you get a job, most of what you learn will occur as you do your job, and that kind of learning is crucial to the development of competence and expertise. Surprisingly, seventy to eighty percent of this important learning takes place outside of formal training. Studying learning in workplaces illuminates how learning happens universally, and helps teachers and trainers design effective educational programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 431 or TEL 494 (Learning in Workplaces) OR Visiting University Student
TEL	489	Undergrad Projects & Research	Topics include history of educational research, literature reviews, research methodology, resources, individual project ideas and the creation of a research prospectus. Students may also work in teams to complete theses or projects if their interests intersect. Open to all students; however, Honors and Scholar's Academy students will be planning and/or implementing theses or creative projects.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 489 or TEL 494 (Undergrad Projects & Research in ED)
TEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): Barrett Honors student
TEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6	L	Prerequisite(s): Barrett Honors student
TEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		
TEL	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
TEL	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
TEL	505	American Educational Policy	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
TEL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	701	Advanced Quantitative Methods	Data collection, analysis, interpretation in studies using quantitative methods of inquiry situated in action research, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 701 or TEL 701
TEL	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 702 or TEL 702

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TEL	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 703 or TEL 703
TEL	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 704 or TEL 704
TEL	705	Systems Change and Leadership	Focuses on theoretical foundations of systems literature with a focus on education. Examines literature and scholarship that builds knowledge of educational theory on systems, and applies important related concepts to real-world problems of practice as they appear in students' current work context.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	706	Intro to Doc Studies	Prepares doctoral students for success, focusing on balance and identity, communities of practice, leadership and innovation, action research, and organization systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Leadership and Innovation EdD major; Credit is allowed for only TEL 598 (Introduction to Doctoral Studies) or 706
TEL	707	Reading the Research	Interprets and analyzes qualitative and quantitative research literature, as well as how to integrate information in professional scientific writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	708	Collab Apprch Data-Inf Dcn Mkg	Examines data-informed decision making in educational learning communities, by focusing on data collection, analysis and interpretation, as well as the impact of collaborative learning communities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 708 or TEL 791 (Collab approaches data-informed decision-making)
TEL	709	Dir Field-Bsd Study	Under the supervision of a faculty member and with the assistance of a mentor, students understand and develop their leadership, innovation and research skills. Provides an opportunity to (1) work with and learn from a leader outside students' normal spheres; (2) develop students' capacity to learn independently --to study, reflect, assess and expand their abilities as leaders, innovators and agents of change; and (3) extend and enrich student knowledge through reading and writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 709 or TEL 792 (Directed Field Based Study)
TEL	710	Innov Disseminating Res	Provides graduate students with the opportunity to develop a post-degree impact plan related to the scholarship and innovations they developed through the EdD program. A post-degree impact plan enlists research and practices related to the idea of knowledge mobilization in order to optimize access to and engagement with scholarly insights and innovations. Enables students to develop strategies and resources to extend the reach and enhance the impact of their scholarship, innovations and resources among relevant stakeholder groups.	N	SEM	N	YGB	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 710 or TEL 791 (Innovations in Disseminating Research)
TEL	711	Strategies for Inquiry	Develops knowledge and skills for research and program evaluation that foster innovation in education that leads to improved student learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	712	Mixed Methods of Inquiry	Methods for combining qualitative and quantitative inquiry in action research, evaluation, and data-based decision making.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	713	Advanced Qualitative Methods	Data collection, analysis, interpretation in studies using qualitative methods of inquiry, situated in action research, evaluation and data-informed decision making.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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TEL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	100	Seminar in Entrepreneurship	Exposes students to careers in entrepreneurship by inviting diverse entrepreneurs to discuss their businesses and backgrounds and share their stories on starting and growing their ventures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		
TEM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	200	My Technology Venture	Introduces the concept of entrepreneurship through venture practice and self-reflection to help students understand their potential roles in a technology-driven marketplace.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 110 with C or better OR Visiting University Student
TEM	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 or TEM 230 OR Visiting University Student
TEM	250	Design Methodology	Outlines product design method and provides opportunity to apply it to a design project including identifying needs, setting target specifications, generating and selecting concepts, prototyping and testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
TEM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
TEM	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
TEM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	400	Technology Entrepreneurship	Explores the fundamentals and principles of entrepreneurship suitable for both undergraduate business and technology students. Instructs students on the strategic path through entrepreneurship: ideation, validation, market selection, intellectual property, fundraising, launch and profitability. Also explores the impact and implications of technology. Through this course, students have the knowledge and skills to cultivate their ideas into businesses.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; ENT 305 or TEM 200 with C or better; Credit is allowed for only TEM 400 or TEM 598 (Technological Entrepreneurship) OR Visiting University Student
TEM	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431 OR Visiting University Student
TEM	450	Design for Developing World	Provides sustainable solutions to social problems that will improve the lives of residents in lower socio-economic communities through the integration of technology and social entrepreneurship.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): junior, senior, or graduate standing
TEM	455	Global Impact Entrepreneurship	Increases awareness and understanding of the complex nature of global poverty. Students think comprehensively about sustainable ways to address by focusing on business ventures and product design, which take advantage of local resources, networks and institutions. Students design and refine technologies and services that address the needs of communities in the developing world. Examines piloted technological innovations by ASU students in the west African nation of Ghana, India, and Latin American countries such as Mexico and Peru. Analyzes technological initiatives that have been piloted in Ghana and Peru, and attempts to create sustainable business ventures for them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; TMC 320 with C or better; minimum junior standing; Credit is allowed for only TEM 455 or TEM 598 (Global Impact Entrepreneurship) OR Visiting University Student

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TEM	481	Consulting Project	Students learn about technology entrepreneurship through consulting with leaders and owners of businesses, not-for-profit organizations and government agencies. Requires both out-of-class consulting projects and in-class instructional sessions focused on technology entrepreneurship and business strategy, including financing, promoting, leading and growing the venture and consulting skills.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): senior standing; Pre- or corequisite(s): TMC 430 with C or better OR Applied Science (Operations Management) BAS major OR Visiting University Student
TEM	482	Startup Workshop	Students launch their own technology-related ventures with collaboration and mentorship from colleagues and faculty. This class centers on hands-on learning and is appropriate for beginning as well as maturing start-ups. Students build their entrepreneurial networks and engage with stakeholders related to their business (customers, industry partners and investors). Explores the tactical challenges that come with developing an enterprise and forms strategies and methodologies to advance the venture.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TEM 200 with C or better; senior standing OR Visiting University Student
TEM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		
TEM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6		Prerequisite(s): Barrett Honors student
TEM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6	L	Prerequisite(s): Barrett Honors student
TEM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-3		
TEM	530	Stats Bootcamp for Industry	Provides foundational coverage of topics such as probability theory, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, and simple linear regression analysis, appropriate for first-year graduate students. Additionally, provides a fundamental understanding of probability theory and statistics as used in typical industrial applications. Presents and discusses illustrative problems from technology, entrepreneurship, aviation and psychology. Where possible, explores problems from the student's discipline to insure that the principles of statistics and probability are studied in the context of the student's chosen field.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only TEM 530 or 598 (Statistics Bootcamp for Industry)
TEM	531	Disruptive Innov & Tech Evol	Focuses on the processes of innovation management of various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams, with an emphasis on disruptive innovation and the evolution and forecasting of technology. Provides a survey of innovation management concepts and various technological forecasting and prediction approaches, both mathematical and nonmathematical, in conjunction with a study of the evolution of selected technologies and the management problems associated with emerging technologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	532	Advanced Analysis of Systems	Introductory course in systems analysis and modeling. Develops basic competence in formulating and solving models of systems to aid decision making. Topics include: introduction to systems and systems modeling; a simple what-if analysis; overview and review of linear algebra and matrices; problem formulation and model development in optimization; linear programming (LP), economic interpretation and sensitivity analysis; introduction to integer programming (IP); special linear programs; project schedule network development and computations; overview of heuristic algorithms. Uses selected software in examples, short problems and in a project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	101	Principles of Global Mgmt	Provides the basic concepts of management with particular emphasis on the functions of management in a global environment. Examines the antecedents of globalization; the role of global environments in shaping organization structure, strategy and processes, as well as the basic principles of managing in complex cross-cultural settings. Emphasizes global institutional arrangements and macroeconomic issues. Serves as an introductory course that provides a quick snapshot of key issues facing global corporations today with each of the major themes explored more fully in the set of advanced courses that follow. Applies global business concepts in understanding global political economics, legal systems and socio-cultural environments.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	
TGM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): maximum 25 hours OR Visiting University Student
TGM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	200	Prins of Acctng/Global Orgs	Focuses on financial and managerial accounting and examines how outsiders evaluate businesses, nonprofits and governmental operations and how economic events are reflected in a firm's financial statements, including balance sheets and cash flow statements. Examines key accounting methods that impact a company's financial statements and how they are used by shareholders, creditors, employees and customers to make credit decisions and/or value a firm's equity securities.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student
TGM	204	Princip of Mktng/Global Orgs	Explores the ways in which global marketing strategies reflect a deep understanding of markets and create valuable offerings for customers globally. Broadly speaking, marketing strategy making is comprised of segmentation, targeting and positioning. Segmentation is the process by which we segregate a relatively heterogeneous mass market into relatively homogeneous market segments. Targeting is the process by which we analyze opportunities and identify those customers where our business has the greatest prospects for success. Positioning is the process of assembling the "total offering" (product, service, distribution and price) and communicating the benefits of this "total offering" to the members of our target market. Challenges students to think critically about global competition. As such, rote learning of terms and concepts is not sufficient to prepare students to manage a business in global markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	268	Intercultural Comm/Global Mgmt	In a dynamic and interactive format, this course presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Examines theories of communication (the basic concepts, principles and skills vital for understanding and improving communication across racial, ethnic and cultural differences). Places students in experiential situations in order to develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world. Explores in depth intercultural theories from the TGM three regional areas—China, Latin America and the Middle East.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student
TGM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	300	Princip of Finance/Global Orgs	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student

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TGM	310	Supply Chain Ops for Gbl Orgs	Studies the major elements of supply chain management. Students learn how to design an integrated supply chain and evaluate the fit with the business strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	312	Big Data in the Global Economy	Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important aspects of Big Data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereq(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student; Pre- or corequisite(s): ECN 221 or STP 226 with C or better if completed OR Visiting University Student
TGM	353	Regional Mgmt Environment	Provides future global managers with the analytical tools and frameworks for understanding the political, social, cultural and economic contexts within which business activities take place in various countries and regions throughout the world.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	391	Glbl. Bus. & Prof. Dev. Skills	Required for all continuing and transfer Thunderbird students that enhances critical thinking, communication, presentations and networking skills desired for success in upper-division TGM-specific classes as well as for international internships, study abroad and post-graduation work experiences.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student
TGM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	400	Advanced Topics/Global Mgmt	Focuses on advanced topics in global management designed to synthesize knowledge acquired from global business, language and cultural coursework.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student; minimum 60 hours
TGM	410	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N	LEC	N	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereqs w/in C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cull(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
TGM	430	Intl Trade Reg Econ Agreements	Explores recent trends in global finance and trade and in regional trade agreements (GFTAREAs), especially as they appertain to national business environments and the global political economy. Also explores how globalization and regionalism impact business decision making and policy making at the national level and in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	460	Global Risk Assess & Mgt	Covers concept of regional and country risk as it affects foreign businesses and investors, and develops participants' abilities to identify, analyze and design management strategies for mitigating such risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	468	States and Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of opportunities in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	SB & G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student

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TGM	478	Cross-Cultural Comm & Negotiat	This two-part course begins by focusing on cross-cultural communication with the ultimate purpose of helping improve global mindset. In the second part, focusing on cross-cultural negotiation helps students understand the theory and processes of global negotiation so that they can negotiate successfully in a variety of settings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	487	Global Entrepreneurship	Deals with entrepreneurship and new venture creation that takes place in international and global settings. As such, it integrates many of the ideas, concepts and frameworks of international business and global management with those of traditional entrepreneurship. Starts at the firm level, looking at basic ideas of how entrepreneurs start and launch new ventures. It then expands to the industry level, looking at the role of business models in new venture creation, industry analysis, and scaling promising ideas. Focuses on the international and global levels, on topics such as cross-national comparative entrepreneurship, born-global new ventures, entrepreneurship in emerging and developing countries, and the global venture capital market. Also includes a number of special topics in global entrepreneurship, such as social entrepreneurship and family business. Finally, students have the opportunity to apply theory.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	489	Mltntnl Organizational Ldrshp	Explores multinational organizational management strategies, organizational practices/systems, and related managerial skills which are an essential part of global competitiveness. Develops skills to understand the application of analytical tools and frameworks, executes complex strategy, and builds and leads competitive teams and people.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): Barrett Honors student
TGM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6	L	Prerequisite(s): Barrett Honors student
TGM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-7	L	
TGM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		
TGM	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	501	Global Accounting	Focuses on two aspects of accounting: financial and managerial accounting. Financial accounting is about how outsiders view and evaluate an organization such as a business, a not-for-profit entity or a governmental operation. It focuses on how economic events are reflected in a firm's financial statements including a balance sheet, an income statement and a statement of cash flows. It also focuses on how financial statement information is used by various stakeholders such as shareholders, creditors, employees and customers in making decisions with regard to the firm, including credit decisions and/or valuing a firm's equity securities. Analysis and equity management accounting involves providing information, both financial and non-financial, to management and employees to aid in planning, organizing activities, and monitoring and controlling business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	502	Financ! Mgt Gbl Value Creatn	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	503	Global Marketing	Provides a managerial orientation to the topic of global marketing in today's complex, rapidly changing international business environment. A key focus is developing competitive advantage by creating customer value. Course participants gain a fundamental understanding of marketing strategy and marketing analysis (i.e., customer, competitor and company analysis) as well as an appreciation of the basic strategic issues involved in market segmentation, market targeting and market positioning in the international arena. Also examines the major tactics/tools used by global marketers to facilitate the management of their international marketing plans (i.e., product development, pricing strategies, marketing communications, distribution management). Emphasizes developing skills for entering new markets and sustaining or growing current markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	504	Managing Org Gbl Perspective	Covers two key aspects of successfully managing an organization in a global environment. The first component covers the strategic direction of the organization, and the second component discusses how to harness the power of people in the organization to build teams and lead people to execute the strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	505	States & Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of the opportunities they will encounter in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	506	Communicating & Negotiating	This dynamic and interactive course provides managers with an effective framework for achieving their goals in global management settings. Assists students to prepare for and execute time-tested strategies for achieving communication competence with persons from different cultures. Also covers negotiating in the global context. Not only examines theories of culture and communications, but also places students in an experiential situation to gain valuable skills for overcoming obstacles in global management environments. Through use of cases, multicultural team exercises, student negotiation exercises and simulations, equips the global manager with tools to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	507	Gbl Organizational Consulting	Consulting course provides an overview of the field of consulting and the role of the management consultant. Familiarizes students with the tools and techniques used during a consulting engagement, including project entry, problem definition, intervention planning, data collection, problem solving, alternative generation, feedback, project exit, client relations skills and project management. Requires students to work in project teams to solve business problems in organizations through the application and expansion of technical skills acquired in other classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TAM 541 OR TGM 517; TGM 545; TGM 557
TGM	508	RBE I: Emerging Mkts	As an extension of states and markets in a global economy, provides an analysis of contextual factors that influence dynamic business environments by employing frameworks that integrate political, economic, geographic, and sociocultural factors in a specific regional area.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 505 or 515
TGM	509	RBE II: Developed Economies	Provides future global managers with the analytical tools and frameworks for understanding the developed markets business environment. Also provides a broad understanding of those economies in order to be successful therein. In order to succeed as managers in the environment, requires knowledge of political, social, cultural, economic, business and economic factors, both across the developed markets landscape and within individual countries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 505 or 515

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TGM	510	Strat in Gbl Development	The nuances and challenges of development in the less-developed countries (LDCs) and in the transition economies of the world. Analyzes the economic, social, political, cultural and other challenges that LDCs and transition economies face, and the strategies they are employing in their quest for development.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	511	Global Financial Accounting	Accrual accounting concepts, teaching students how to prepare and understand the content of traditional financial statements. Topics include the recognition and measurement of accounting events; preparation and analysis of income statements, balance sheets and statements of cash flows; and the measurement of revenue, expenses, assets, liabilities and stockholders' equity, including both U.S. and international principles.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	512	Managerial DecisionMkngGblEnv	Teach students how to use accounting information to help organizations succeed in a rapidly changing global environment. Introduce a variety of tools and techniques such as cost allocation, cost-volume-profit, relevant costing, performance evaluation, budgeting, transfer pricing, customer profitability analysis, nonfinancial performance evaluation, and/or sustainability reporting. By applying these tools and techniques to different types of global organizations, students learn how to use accounting information to make effective decisions. Throughout the course, emphasizes integrating other subject areas such as strategy, data analytics, entrepreneurship, corporate social responsibility, and/or behavioral economics into the decision analysis process.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 501, 511 or 517
TGM	515	Navigating Gbl & RBES	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. The first part of the course develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. The second part deals with the regional business environment. This part begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the business environment. While the emphasis is on a specific region, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	517	Gbl Acct & Fin Mgmt	Two-part course covering global accounting and global financial management. The first section covers financial accounting from a global perspective. Students have an opportunity to learn how to develop and use financial accounting information for external decision-making purposes. The second section equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	518	International Finance & Trade	Covers the two major areas of international economics: international trade and international finance. Offers a detailed look at the foreign exchange market, instruments and practices, as well as related theories and government policies. Also places a significant focus on the macroeconomy and its relationship to capital flows and economic relations with other countries. Also examines the flows of goods and services in international trade and the policies that relate to this trade.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	519	Global Financial Engineering	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	521	Mnging for Gbl Value Creation	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	522	Global Financial Decisions	Covers modern practices of financial decision-making and management in a market-oriented multinational framework. Topics include financial technology, cryptocurrencies, capital structure decisions, risk management involving financial derivatives and currency hedging, cross-border investment decisions, subsidiary management, and cross-border merger and acquisitions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 517 or 521
TGM	523	Global Investments	Surveys the investment management landscape and delivers the theory and technology attendant to intellectual and/or career pursuit in this domain. Topics explored include the domestic and international aspects of portfolio optimization; emerging markets and global asset allocation; security analysis and selection; stock sorting and screening algorithms; mutual fund performance decomposition and benchmarking; fixed income analytics and metrics; earnings quality; the franchise factor; distress prediction and credit scoring models; the behavioral finance salient; and financial derivatives from a portfolio management perspective, inter alia. A respectable floor of numeracy is advisable; a CFA® emphasis prevails.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	524	Valuation of the Private Firm	Provides a practical and theoretical understanding of the valuation of non-trading private enterprises. Basic theory, methodology and application of modern financial concepts as they relate to the valuation of these types of business organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	525	Gbl Fin/Forecast Pvt Firm	Focuses on finance concepts as applied in the real work by entrepreneurs. From the firm perspective, covers topics relevant to entrepreneurial finance, including financial statements, funding plans and venture capital. Prepares prospective general managers of entrepreneurial companies on how to make the financial decisions involved with building high-risk, high-growth new enterprises. Prepares business-minded students for careers focused on entrepreneurship and corporate entrepreneurship. Through the use of excel-based modeling, combined with lectures and readings from assigned sources, students understand aspects in finance that are critical to the entrepreneurial venture. Prepares students to deal with the various financing resources available to these same enterprises, including venture capitalists, angel investors, investment bankers and other financial stakeholders.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	526	Global Portfolio Management	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517

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TGM	527	Global Private Equity	Overview of the private equity industry globally, its role in economy, its participants, its operations and its recent development. Covers different phases of the private equity investment process and the players involved at each stage. Phases include: setting up a fund, selection and screening of investments, exploring valuation techniques, managing and exiting investments. Emphasizes the practical aspects of private equity transactions through case studies and interactions with private equity professionals. Recommended for students interested in private equity investing, investment management, investment banking, entrepreneurship and entrepreneurial finance. Does not require previous experience in private equity or financial skills beyond those taught in the finance core classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	528	Business Intelligence	Examines the role that business intelligence—the systematic collection, synthesis and analysis of information on the external operating environment—should play in strengthening corporate strategies and decision making. Through lectures and client-sponsored competitive assessment projects, the course has two goals: to help students understand this management tool and to train them to be able to utilize it for competitive advantage. Also addresses the related issues of corporate/industrial espionage and information security.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 545
TGM	529	Multinational Corp Fin (FORAD)	Applies the theories of managerial and international finance to the problems of multinational treasury management. Topics include issues and techniques in multinational funds transfers; identifying and measuring foreign exchange and interest rate risk; multinational tax planning; managing foreign exchange and interest rate risk; hedging instruments, including forward contracts, options and swaps; and financially engineered synthetics. Students also manage the financial functions of a computer-simulated multinational corporation, construct a biennial report summarizing their management results and present oral reports to a board of directors consisting of professors and invited business professionals.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	530	Big Data in the Gbl Econ	Creating a sustainable IT-dependent competitive advantage is a major goal for forward-thinking multinational organizations. Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important technological aspects of big data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 557
TGM	531	Multinational Value Chain	Exposes students to the strategies and challenges associated with moving goods, services, information and associated payments across complex, globally dispersed value chains to end customers. Topics include value-chain structures, supplier partnerships, cross-cultural issues, technology, data networks, global logistics, risk management and value-chain mapping. A field project provides students with an opportunity to work in teams applying the course concepts to increase customer value in a real value chain.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	532	Leading Global Projects	Provides an overview of the global context of project leadership. Global project leaders work at the intersection of project management, leadership in a project context and cross-cultural effectiveness. Exposes students to key project leadership approaches including stakeholder management, methods for increasing inclusion on global project teams and building high-performing global project teams. Uses case studies, a simulation, several exercises and interactive discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	536	Global Risk Assess&Mitigation	Firms of all kinds are attempting to improve their competitive positions by strategically managing the flow of services, raw materials, work-in-process inventories and finished goods on a global basis. Global managers must be concerned with the ever-increasing number of diverse risks to their businesses posed by political, social, physical and financial forces at work globally and in specific regions and countries. Centered on state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring, assessing and forecasting risk, and methods of mitigating risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	537	States, Business and Trade	Explores the political economy of trade and multinational trade agreements, especially as they pertain to national business environments and the global economy. Covers the domestic and international politics of trade, the formation and composition of multinational trade agreements, and the implications for national and multinational companies.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 505 or 515
TGM	538	Corporate Partners	Experiential consulting practicum involving a highly visible, rapidly growing or start-up company or entity. Engages client in a specific activity such as strategic planning, opportunity assessment, policy or procedure redesign or competitive assessment. Requires the student team to integrate various skills encountered in Thunderbird's fundamental core courses to produce the desired deliverable. Students interact directly with the client during the semester to gain insights into the client's circumstances. The project results in complex deliverables and culminates in the presentation and recommendation to the client of suggested operational options or strategic directions. Entrance to this course is competitive and has an application process.	N	PRA	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517; TGM 545; TGM 557
TGM	540	ManagingPeople:GlobalPerspctv	Explores the mix of organizational practices and people that can be the basis of sustainable competitive advantage in the contemporary global business environment. Topics covered include cross-cultural issues in managing people, traditional and emerging models of organizations, organizational culture, leadership, employee skills and motivation, reward systems and change management.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	541	CompetveStrategyGlbIbPerspecti	Focuses on choices that impact the performance of the entire organization. Examines central questions: Why are some industries and firms more profitable than others? How do firms create competitive advantage? How does the choice of strategy drive organizational performance? How do firms manage scarce resources in the pursuit of strategic objectives? How do firms create unique and sustainable industry positions?	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	545	Global Leadership & Strategy	Creating value in modern organizations comprises the strategy that the organization deploys and the way in which its leaders execute the strategy to achieve superior economic returns. Thus, this course covers two distinct but interconnected domains dealing with competitive strategy and leadership. The strategy segment focuses on how organizations choose their strategic position, build sources of competitive advantage, and design their value proposition and business models. The leadership segment illustrates the integral role that leaders play in helping an organization realize its strategic potential and focus on what it means to compete through people in a way that produces positive results for individuals, teams and organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	546	Regional Industrial Analysis	Builds on concepts introduced in competitive strategy, global strategy and regional business environment. Focuses on the analysis of the strategies adopted by competing players and their impact on the global strategies pursued by the parent organization in the context of regional industry dynamics. Covers a spectrum of topics ranging from industry cluster formation, country-specific advantage, industry versus industry ecosystem analysis, the government's role in industry and regional development including national innovation systems, demand and supply chains in regions, and emerging market challenges. Applies multiple decision-making tools and frameworks to understand the Information and Communications Technology (ICT) industry in Asia Pacific--the fastest growing region in the world. Tools and frameworks learned in this course are applicable to other regions and other industries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 545
TGM	547	LeadngChg&Transfrmtn GlobalEnv	Increases understanding of the nature of organizational change (through conceptual frameworks, readings and discussions). Specifies skills needed for managing change. Enhances sensitivity to the contribution and consequences of the human element as related to change. Helps student's own capacity to "thrive on change."	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545
TGM	548	Global Strategy	Focuses on how global firms create value. Covers topics ranging from country-specific competitive advantage and the notion of distance to alternative global strategy archetypes and sources of competitive advantage for emerging market multinationals. The approach applies multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545
TGM	549	Global Leadership	Explores the concept of effective leadership within and across a variety of organizations and global contexts. Definitions of "leadership" and strategies for becoming an accomplished leader abound. Rather than attempt to narrowly focus our attention on definitions, leadership styles, and supposedly "definitive" theories of leadership, focuses on the demands of and competencies associated with excellent leadership. Most importantly, examines how leaders sense the need for and then manage organizational change. Given the increasingly complex world we live in and the ongoing and rapid rate of change, change management has become one of the most critical of leadership skills.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	551	Global Marketing Strategy	Covers the major concepts involved in creating and sustaining customer value, analyzing the firm's macro environment, choosing whether or not to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	552	Global Marketing Management	Covers the functional aspects of marketing including decisions relating to segmentation, targeting, branding, product development, pricing, distribution and advertising/promotion. Students integrate their knowledge of these topics through the creation of an international marketing plan based on a product or service and in a country approved by the instructor.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 557
TGM	553	Gbl Customer Decision Making	Both theoretical and applied, the backbone and foundation of the course draws heavily from behavioral economics, consumer psychology and consumer information processing. Equips students with a comprehensive understanding of how and why consumers make decisions the way they do in the market (B2C). Although consumers desire to make rational decisions that maximize their utility, in reality, more often than not, they tend to make irrational and suboptimal choices. Offers why such phenomena occur and how consumers can improve their quality of decision making. Offers a richer appreciation of the heuristics and decision-making rules that consumers use and biases that affect consumer decision making.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557

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TGM	554	Global Marketing Research	Focuses on the use of marketing research techniques for competitive advantage in a global business context. Develops the necessary skills to plan a research project, collect data, analyze the data and report findings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	555	Gbl Product and Pricing Dev	Combines global product development (GPD) and global pricing (GP). GPD examines how an organization can identify, develop and manage products for global markets. Pays special attention to issues such as the product development cycle, innovation charter, barriers to product development and effectively organizing for product development. GP provides in-depth knowledge of the field of global pricing, covering the psychology, economics and tactics of pricing for a business enterprise, product or service. Better pricing knowledge usually converts to better bottom-line results. Students learn pricing theory and tactics as well as develop hands-on pricing skills, all aimed at improving profitability. These skills can be applied across the full range of professional contexts—as entrepreneurs, brand managers, business unit managers, management and M&A consultants.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	556	Gbl Strat Services Mkt	Services have come to dominate our economy. Yet there remains a naive belief that services marketing and management is a simple adaptation of goods marketing and management. Unlike physical goods, services are co-produced with customers at a time, and in a place, of the customer's choosing. This co-production directly involves an organization's front-line employees. As a result, it is more difficult for services to be inventoried and checked for quality assurance. Provides a thorough understanding of the management and continuous improvement of service operations, including a thorough understanding of the role of customers in service operations such that service firms can design effective service experience so as to minimize service failure. Provides students with an end-to-end hands-on customer experience management (e.g., customer satisfaction and loyalty), project that involves survey design, customer experience model development, data collection, data analysis, and recommendations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	557	Gbl Marketing&Data Analytics	Global companies are embracing digital technologies to better understand their customers' journey and subsequent word-of-mouth discussions consumers have about their product online. This course is about understanding how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. It delves into the understanding of global data, choosing whether to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	558	Gbl Data Analysis Strat Mkt	Provides an understanding of the key marketing issues through an examination of various marketing decisions. Course complements other marketing courses by adopting a more hands-on and practical approach to strategic market planning. A combination of lectures and discussions, analyses of cases, software demonstrations, and a simulation game facilitate understanding of the material. Requires a solid understanding of marketing planning, statistics and quantitative methods.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	559	GBL Brand Management	Provides a managerial orientation to the topic of global brand management. Prepares participants for a career either in the role of the "traditional brand manager" or in the role of a "manager with brand-related responsibilities." A major portion of the course is working on a global brand field project to develop a brand management/marketing plan for a brand and brand challenge of student (and team) choosing. Emphasizes the ethical dimension of global brand management; focuses on an individual brand ethics project.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557

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TGM	572	Gbl Import Export Mgt	Requires understanding theoretic, strategic, finance and practical business principles complicated by the differences in business practices, culture, laws and currency regulations of multiple countries and regions. Focuses on important pragmatic aspects of selling and acquiring goods and services to and from trading partners in foreign markets. Today's global marketplace, while dynamic with opportunity, contains rapidly changing physical, fiscal, technological and regulatory considerations for those who manage such activities. Important concepts to be learned include establishing strategic direction, identifying and managing a multitude of risks, protecting company assets, lowering the cost of finance, building winning business relationships and profitably expanding business into new markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	573	Country Risk Management	Global managers must be concerned with potential risks to their businesses posed by political, social and financial forces at work globally and in specific regions and countries. This course centers around state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring and forecasting risk and mitigating risk. Recommended for students interested in business risk forecasting as a function in and of itself, and in operations, marketing, and any arena in which business investors must be able to anticipate and manage risks.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	575	Global Affairs	Examines major theories and concepts in global affairs including different schools of international relations thought and levels-of-analysis determinants of foreign policy. These theories and concepts provide key insights on contemporary global affairs issues, and are applied to real-world events and case studies. Covers the role of political economy in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	576	Global Affairs Methods	Covers research methodologies and analytical techniques used to investigate global issues. Topics include research design, quantitative methods, qualitative methods, policy analysis and database resources. These tools are used in government, in intergovernmental organizations, in nongovernmental organizations, and in the private sector. They are applied to key issues in global affairs such as democratization and human rights, income inequality and development, political violence and international security, and political risks to foreign investors.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	577	International Organizations	Examines the role of international organizations in global affairs particularly in the areas of international peace, security, humanitarian and environmental issues. Focuses on intergovernmental organizations such as the United Nations and International Criminal Court as well as regional organizations such as the North Atlantic Treaty Organization and the African Union. Also focuses on international nongovernmental organizations such as Amnesty International and International Red Cross. Examines the impact of as well as the constraints on international organizations in real-world events and case studies. Covers major economic intergovernmental organizations in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	579	Communicating Global Context	In a dynamic and interactive format, presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Not only examines theories of communication, but places students in experiential situations in which they develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		

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TGM	581	Negotiating in Global Context	Provide students with knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 506
TGM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	585	Corp Social Resp Gbl Context	Provides knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability. Corporate Social Responsibility (CSR) has become essential for corporations seeking to succeed in an intensely competitive global economy. Provides an in-depth understanding of what CSR is, how to apply it effectively in an international context and how to manage it well. Using a case-based approach, focuses on actual experiences of corporations that have used CSR strategies successfully--and unsuccessfully--to draw practical lessons for international managers. Incorporates several guest lectures from executives who share their firsthand experiences with CSR in various regions of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 586
TGM	586	Gbl Entrepr & Sus Bus	Presents an overview of entrepreneurship and sustainable business. Involves acquiring a basic understanding of both the global entrepreneurship space and the sustainable business space. Students become familiar with the definitions applicable to these two topics, the basic place and role of these two domains in the global economy, and the significance of the two domains in the creation of jobs and sustainable economic activity.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	Thunderbird School of Global Management	Thunderbird School of Global Management	1		

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TGM	596	Thunderbird Experiential Pract	Capstone course offering students an opportunity to apply the full range of professional skills they have acquired during graduate business and management studies. Consists of participation in a consulting project for a client system in an emerging market country, including Central America, Latin America, the Middle East, Africa, central and eastern Europe, and the whole of Asia apart from Hong Kong, Japan, Singapore, Australia and New Zealand. Serves all sectors: public/governmental, private and NGO/nonprofit.	Y	PRA	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): TGM 506; TGM 517; TGM 545; TGM 557
TGM	597	Thunderbird PLD	Capstone course designed to equip students with the skills to transition from students to global managers in the 4th industrial revolution. Students create and continuously update their Career Development Plan. This plan requires them to research career options, commit to a career focus, devise a strategy, implement a networking plan, create career documents such as resumes and cover letter, prepare for interviews. Students also create their own Personal Leadership Development plan.	N	LEL	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	601	Megatrends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. The lead professor for this Phoenix-based course partners with faculty from ASU colleges including the Ira A. Fulton Schools of Engineering, the Walter Cronkite School of Journalism and Mass Communication, the School of Public Affairs, and the Sandra Day O'Connor College of Law (and possibly other ASU schools or units). Representative topics span from crisis management in an era of hypercompetition and mass communications to the global legal implications of digitalization (e.g., Industry 4.0) and the emerging role of NGOs in partnering with private companies to seek shared value and sustainability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	602	Sustainable Futures	Provides broad exposure to emerging and future transdisciplinary environmental drivers and their influences on business, nonprofit organizations and governments. Focuses on four interwoven themes. First, how do global firms create, experience and leverage shared value creation to drive innovation and growth. Second, exploration and application of contemporary models for mapping and understanding today's complex, dynamic systems, ecosystem development and cluster formation. Third, by delving into the function of multilateral agencies such as the WTO, WHO, UNHRC, UNCTAD and WBCSD in shaping and driving environmental influence on organizations, and understanding the public policy value chain. And, fourth, unbundling the impact of environment on innovation and growth success drivers in "next generation" manufacturing industries such as pharmaceuticals or precision engineering; on service industries such as banking or nonprofit organizations; on governments; and on NGOs.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	603	Shaping Markets	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. Integrative approach that seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	604	Capturing Digital Dividends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to innovation, technology and creativity. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from understanding technology trends and their drivers to structuring for innovation and creativity success, and the leader's role and relevant skillset therein. From input to process to output, this module provides access to leading-edge best practices for seeing what others miss (successfully finding and developing valuable innovation), effectively assessing, prototyping, and validating, and winning adoption for new ideas and insights (and fostering these skills in others).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	605	Delivering Results I	Provides broad exposure to emerging and future transdisciplinary drivers and their influences on strategy formation in global organizations. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. The approach will be integrative in that it seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	606	Delivering Results II	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to execution of strategy on global and local levels. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from implementing global strategy, evaluating and responding to regional dynamics in fast expanding markets, bridging potential headquarter and field chasms, and executing in peak dynamism. This module provides access to leading-edge best practices for implementing strategy in fast expanding, emerging markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
THE	100	Introduction to Theatre	Surveys theatre production from the Greeks to contemporary theatre.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): non-Theatre and non-Film students only
THE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	320	History of the Theatre I	Centers on the historiography of world theatre as art, as a medium of cultural expression and as a social institution. Involves, along with the reading of plays, advanced methodological approaches to studying the creation of theatre within cultural and political contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre or Performance and Movement BA major; THF 220 OR New College student; junior or senior standing OR Visiting University Student
THE	321	History of the Theatre II	Traces major developments in theatre production from the 17th century to modern times.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre BA major; THF 220 with C or better OR New College student; minimum junior standing
THE	322	Theatre History and Culture	Critically examines major developments in theatre history, historiography, and dramatic literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): non-Theatre majors OR Visiting University Student
THE	325	Play Reading/Education Theatre	Assigned independent readings in plays for secondary school play production.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theatre student OR Visiting University Student
THE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	406	American Multicultural Film	Examines Native, African, Asian, and Latina and Latino American films and film artists in cinema history and production.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
THE	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
THE	421	Shakespeare: Stage and Film	Examines Shakespeare's plays as written texts, stage performances, and film productions. Focuses on play reading, performance analysis, and film critique. Online course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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THE	422	Latinx Theatre and Film	Explores issues of cultural identity through critical analysis of theatre and film by Latinx artists in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Pre-requisites: ENG 102, 105 or 108 with C or better OR Theatre Masters students
THE	423	African American Theatre	Readings, discussion, video of the history and dramatic literature of African American playwrights and theatre companies in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters student
THE	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425
THE	426	Pre-Columbia Thtre of Americas	Selected studies in pre-Columbian theatre forms and texts of the Aztecs, Mayans, Caribbean islands, and North American Indians.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters Theatre student
THE	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G & H	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 429 or SLC 429 or THE 429 OR Visiting University Student
THE	430	History of Fashion I	Fashion is rarely set but rather evolves with eras of upheaval between one generation and the next. Clothes express the personality and rank of the individual creating an instantaneous and lasting impression. Introduces over 400 years of Western fashion history drawing parallels between the fashion and the period in which it existed.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum sophomore standing OR Visiting University Student
THE	431	History of Fashion II	A century of fashion history, drawing parallels between the fashion and the period in which it existed.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only THE 431 or THE 494 (History of Fashion II)
THE	440	Experimental Theatre & Perform	Explores 20th-century modernist theatrical forms and movements and development of alternative strategies for analyzing contemporary theatre and performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Theatre undergraduate student; THE 320 or 321 with C or better; THF 220 with C or better OR Visiting University Student
THE	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
THE	480	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum junior standing; Credit is allowed for only THE 480 or THE 581
THE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Theatre or Film student
THE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Pre-requisites: Barrett Honors Theatre or Film student
THE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THE	500	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): graduate School of Film, Dance and Theatre major
THE	504	Studies/DramaticThry/Criticism	Surveys dramatic theory, criticism, and aesthetics as they relate to contemporary performance.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THE	505	Critical Theory & Performance	Surveys contemporary theories of culture as they apply to theatre and performance studies.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre graduate student
THE	510	Studies in Literature	Assigned individual reading program in standard sources and masterpieces in theatre literature. May be repeated for credit.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite: Must be a Theatre Education or Theatre for Youth student
THE	520	Theatre History and Literature	Surveys historiographical issues and dramatic literature related to key periods in theatre history.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student

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THE	524	Adv Studies/Theatre for Youth	In-depth study of the history, literature, and contemporary practice of theatre for young audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Theatre Education or Theatre for Youth student
THE	525	Adv Studies/Theatre Youth II	Project-oriented explorations of theory and practice of contemporary theatre for youth audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THE 524 with B or better
THE	562	Literary Management Workshop	Advanced literary management for the contemporary theatre, including trends in new play development, festivals and productions throughout the United States. Participation in Arizona Playwriting Competition.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 560 with B or better
THE	581	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THE 480 or THE 581
THE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
THE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Art Theatre student
THE	600	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THE	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Must be a Theatre Education or Theatre for Youth student or have instructor approval.
THE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THF	101	Acting Introduction	Introduces basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): non-Theatre student OR Visiting University Student

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THF	125	Orientation Film/Dance/Theatre	Orientation to university and school resources and procedures. Academic success strategies, mentorship, goal setting. Community-building exercises.	N	REC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Film (Film and Media Production or Filmmaking Practices) or Performance and Movement or Theatre (Acting or Design and Production or Theatre Exploratory) BA major; freshman standing OR Visiting University Student
THF	126	SoFDT First Year Seminar	Community building within the School of Film, Dance and Theatre; connections with faculty; foundations of creative process; attendance and written response to performance and media events.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Film (Film and Media Production or Filmmaking Practices) or Performance and Movement or Theatre (Acting or Design and Production or Theatre Exploratory) BA major OR Visiting University Student
THF	160	Introduction to Storytelling	Introduces the nature, structure, and operations of story, as well as the functions of narrative in societies and cultures. Several modules introduce a different mode of storytelling. Students learn to create their own stories utilizing several of the approaches introduced in the modules.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Film or Performance and Movement or Theatre BA major OR Visiting University Student
THF	215	Design and Composition	Introduces the aesthetic principles and practices employed by designers/artists of the stage and screen, including: basic knowledge of the elements and principles of design; conceptualization of design for theatre and film; director/designer collaboration models; methods and modes of visual communication for theatre and film (storyboards, renderings, models, etc.).	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Digital Culture (Theatre) or The Arts (Entertainment Design) or The Arts (Fashion Design) BA major OR School of Theatre and Film major OR Visiting University Student
THF	220	Principles/Dramatic Analysis	Analysis, evaluation and interpretation of dramatic literature for theatrical and cinematic production. Emphasizes the traditional canon of dramatic literature, the language of narrative film, and traditional structures and forms of drama for stages and screens.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): School of Film, Dance and Theatre major; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): THF 126 with C or better if completed OR Visiting University Student
THF	370	Seminar: Acting Concentration	Designed for a student's continued growth as a preprofessional acting student. Provides a series of master workshops focused on craft. In addition, under the guidance of the faculty facilitator, students receive career guidance and information to strengthen connections to the institute, the school and the university.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): admitted to Theatre (Acting) BA concentration; Credit is allowed for only THF 370 or THP 394 (Acting Concentration Seminar) OR Visiting University Student
THF	397	Prof Development Seminar	Preparatory course for senior projects. Students research and create senior project proposals while formalizing faculty mentorships.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Film BA or Performance and Movement BA or Theatre BA major; minimum 56 hours OR Visiting University Student
THF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THF	497	Senior Project	Mentored practicum for culminating capstone projects.	Y	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Film BA major OR Performance and Movement BA major OR Theatre BA major; THF 397 with C or better; minimum 56 hours
THF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	102	Acting I: Fundamentals	Explores and applies basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance (Music Theatre) BM major or Performance and Movement BA major or Theatre BA major OR Visiting University Student
THP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	201	Theatre Production Crew	Participation in university mainstage theatre production backstage and board operations.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THP	202	Acting II: Meisner Technique	American theatre technique based on improvisation and emotional truth. Rehearsal techniques and application of action to dramatic text.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THP 272 with C or better; THP 277 with C or better; Pre- or corequisite(s): THF 220 with C or better if completed
THP	212	Puppetry with Children	Construction and manipulation of puppets; practice in performance skills. Emphasizes educational and recreational uses of puppetry by and with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		

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THP	213	Intro to Technical Theatre	Procedures of technical theatre production and demonstration. Topics include design and construction of scenery, lighting, and properties.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Digital Culture (Theatre), Performance and Movement, The Arts, or Theatre BA major OR Visiting University Student
THP	214	Introduction to Costuming	Basic principles of costume design, construction, and survey of selected historical periods including makeup styles. Costume design project and production experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Digital Culture (Theatre), Performance and Movement, The Arts, or Theatre BA major OR Visiting University Student
THP	218	Introduction to Directing	Overview of emergence and practice of the director's craft. Explores director's role and responsibilities, play selection, conceptualizing, ground plans, blocking.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre student; THF 220 with C or better; THP 102 with C or better OR Visiting University Student
THP	251	Student Production Board I	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for acting, directing, design and technology.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	260	Introduction to Playwriting	Basic skills of playwriting including exercises in monologues, scenes, and conflict and resolution, leading to completion of a one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
THP	272	Introduction to Stage Movement	Movement vocabulary and physical training in relaxation, alignment, conditioning, and stage presence. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	277	Acting: Intro to Voice	Exercises and techniques to free the voice and improve quality and projection. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	301	Theatre Production	Participation in university mainstage theatre productions (e.g., acting, construction, stage management).	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 213 or 214 with C or better OR Visiting University Student
THP	302	Acting III: Adv Techniques	Advanced practice in methods, skills, and research for rehearsal and performance.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THF 220 with C or better; THP 202 with C or better; THP 272 with C or better; THP 277 with C or better; minimum junior standing
THP	307	Acting: Ten-Minute Plays	Acting in theatre projects, productions, or collaborative performances in directing classes.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	311	Creative Drama with Youth	Theories, materials, and techniques for facilitating improvisational drama with children and youth in classroom and community settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 25 hours OR Visiting University Student
THP	317	Stage Management	Readings in stage management and participation as a stage manager in a university theatre production.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre undergraduate or The Arts BA major OR Visiting University Student
THP	318	Intermediate Directing	Explores approaches to staging and composition. Studio work culminates in presentation of a fully rehearsed ten-minute play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 218 with C or better; THP 213 or THP 214 with C or better
THP	330	Costume Design	Explores the elements of design, taking abstract ideas and formulating them into concrete forms. Encourages the student to experiment with different ideas and mediums. Emphasizes design basics, research, figure drawing, and beginning rendering techniques. Uses projects that involve complex script and character analysis to promote the student's ability to effectively communicate.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better
THP	331	Costume Construction	Uses of materials and techniques for stage costumes with actual construction of period apparel. May be repeated for credit.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 214 with C or better
THP	332	Makeup	Practical guide to the theory and practice of theatrical makeup. Basic principles of stage makeup design and application. Develops and increases skills in the application and design of the medium through a combination of reading assignments, lecture, demonstration and supervised practice sessions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre (Design and Production) major or minimum 45 hours; Credit is allowed for only THP 332 or 494 (Makeup/Advanced Makeup)
THP	335	Advanced Stagecraft	Advanced construction techniques through applicable projects in carpentry and steel fabrication for theatre production in scenery and properties.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with C or better or THP 301 with B or better; minimum sophomore standing
THP	340	Scene Design	Studio projects in designing scenery for contemporary stages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Digital Culture (Theatre) or The Arts BA major or THP 213 OR Visiting University Student

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THP	345	Lighting Design	Principles and theories of stage lighting design, including design process and execution, advanced exploration of design implementation and equipment; course includes drafting and drawing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Minimum Junior standing or Design & Production student with minimum sophomore standing
THP	350	Sound Design	Introduces the equipment, process, and recording techniques used in sound design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre or Film or Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better
THP	351	Arts Management	Management, organizational behavior, and human behavior in the arts; marketing, financing, and budgeting for the arts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts BA major or minimum 45 hours; Credit is allowed for only THP 351 or THP 394 (Management and the Arts) OR Visiting University Student
THP	355	Media Design for Performance	Introduces the fundamental skills, practices and theories for media and projection design for live performance, building on traditional areas of design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre, Film, Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better OR Visiting University Student
THP	360	Intermediate Playwriting	Continued development of skills in playwriting through specific exercises and completion of a full-length play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite: THP 260 with C or better or Prerequisite(s): ENG 210
THP	372	Acting: Advanced Movement	Movement techniques for the classical and nonrealistic theatre.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 272 with B or better; minimum junior standing OR Visiting University Student
THP	377	Acting: Voice and Speech	Introduces phonetic alphabet, exercises, and techniques for voice and speech improvement. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 277 with B or better; minimum junior standing OR Visiting University Student
THP	385	Acting: Shakespeare&Span Goldn	Rehearsal and performance of Shakespeare and other classical playwrights. Emphasizes understanding poetic language, vocal and physical skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with B- or better; THP 277 with B- or better
THP	387	Screen Acting	Professional film acting techniques, terminology and on-camera experience.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Filmmaking Practices BA major, Performance and Movement BA major, Theatre major or minor; THF 101 or THP 102 with C or better OR Film and Media Production major or minor OR Visiting University Student
THP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	401	Theatre Practicum	Production assignments for advanced students of technical production, stage and business management, and design.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 301 with C or better or Master of Arts or Master of Fine Arts student
THP	411	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 311 with A- or better or graduate student; Credit is allowed for only THP 411 or THP 511 OR Visiting University Student
THP	418	Advanced Directing	Studio work building on skills learned in intermediate directing, culminating in the presentation of a fully rehearsed one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 318 with C or better or Herberger Master of Art or Master of Fine Arts student OR Visiting University Student
THP	420	Acting:Solo/Collaborative Perf	Creation and development of original performance art works combining text, movement, multimedia, visual art; the actor as writer, designer, performer.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102; minimum junior standing
THP	428	Theatre Capstone/Sr Project	Senior projects course that includes a culminating creative synthesis of student's knowledge.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 397 with C or better
THP	431	Advanced Costume Construction	Specialized training in costume construction problems and crafts with projects in tailoring, millinery, and period accessories.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre Design & Production or Digital Culture (Theatre) or The Arts BA major; THP 214 with C or better; THP 331 with C or better
THP	435	Technical Direction	Seminar in fundamental principles and practices of technical directors as managers, engineers and artisans in theatre production.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with B or better; THP 301 (Theatrical Construction) with B or better OR THP 301 (Production) with B or better; minimum junior standing; Credit is allowed for only THP 435 or 494 (Technical Direction)
THP	440	Advanced Scene Design	Advanced studio projects in designing scenery for a variety of stage forms.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better, or must be a Theatre Scenography or Performance Design student

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THP	441	Scene Painting	Studio projects in painting stage scenery.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better, or Theatre Scenography or Performance Design student
THP	442	Rendering Design & Production	Techniques in drawing and rendering for scenic, costume, and lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Digital Culture (Theatre) or The Arts (Entertainment Design) or The Arts (Fashion Design) or Theatre major OR Visiting University Student
THP	444	Drafting for the Stage	Fundamentals of and practice in graphic techniques for the stage. Introduces computer-aided design for the stage.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with C or better, or Theatre Performance Design or Digital Culture (Theatre) student OR Visiting University Student
THP	445	Advanced Lighting Design	Specialized techniques in stage lighting. Advanced application of design process, graphic techniques of design presentation, and use of qualities of light.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 345 with C or better or Theatre Scenography or Performance Design student; THP 444 with B or better
THP	448	AutoCAD for Live Entertainment	Comprehension and practice of two-dimensional drafting techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better or Theatre Design and Production major; Credit is allowed for only THP 448 or 494 (AUTOCAD)
THP	449	AutoCAD 3D	Comprehension and practice of 3D drafting and rendering techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 448 with C or better; Credit is allowed for only THP 449 or 494 (AutoCAD 3D)
THP	450	Theatre Organization and Mgmt	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Herberger Institute for Design and the Arts student
THP	451	Student Production Board II	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for the binary officers and administrators only.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite(s): THP 450 OR Visiting University Student
THP	452	Arts Entrepreneurship Seminar	Challenges students to learn how individuals have used their creative skills to create new arts business models. Case studies examine how creativity can spur new opportunities in the arts industry. Students complete their own project proposals.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 with B or better
THP	455	Advanced Media Design	Explores advanced skills, practices and theories for media and projection design for live performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance, Film, Theatre, or The Arts BA major; THP 355 with C or better; Credit is allowed for only THP 449 or 494 or THP 555 OR Visiting University Student
THP	457	Digital Portfolio	Cross-disciplinary exploration of methods, technologies and aesthetics of portfolio presentation for professional designers and artists.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts (Fashion Design) or Theatre (Design and Production) major; minimum 56 hours; Credit is allowed for only THP 457 or THP 494 (Digital Portfolio)
THP	482	Theatre for Social Change	Interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite: Minimum sophomore standing
THP	483	Acting: Viewpoints/Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal and performance, and creating new work.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 202 with C or better; minimum junior standing or Performance and Movement major or MFA major
THP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Theatre or Film student
THP	489	Acting: Audition Tech/Career	Familiarization with the business of performance: preparation and techniques for auditioning; self-promotion and marketing strategies; grant resources, interviews, and unions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 102 or THF 101 with B or better; THF 220 with B or better; minimum junior standing OR Visiting University Student
THP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-7		Prerequisites: Theatre Design & Production student
THP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	501	Performance: Solo Performance	Students begin to define their mission in art. Emphasizes the actor as a solo storyteller, speaking as herself or himself.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-8		Prerequisites: Master of Arts or Master of Fine Arts Theatre student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
THP	505	Graduate Colloquium	Orientation to graduate study of theatrical practice; cohort development, introduction to the advanced literature and media in the art form.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Master of Fine Art Theatre student
THP	511	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THP 411 or THP 511
THP	512	Puppetry Workshop	Surveys puppetry in education, puppetry as an art form in design and performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student
THP	513	Touring Theatre	Provides an understanding of the theories and aesthetics of touring theatre and a practice in its conceptualization, creation, administration, and production. Examines a variety of styles and methods of creating "movable" theatrical material, focusing on forms that require minimal scenic and design support. Focuses on process and working toward a quality product.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Fine Arts Graduate student; Credit is allowed for only THP 513 or 598 (Touring Theatre)
THP	514	Prjcts/Community-Based Theatre	Theories and techniques of improvisational theatre with emphasis on youth. Stresses professional development through projects combining research, theory, and practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite: Master in Arts, Master in Fine Arts or PHD Theatre major
THP	517	Stage Management	Advanced study of the principles and practices of stage management in the professional theatre.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	518	Advanced Directing Lab	Active discovery of directing concepts through practical exercises and collaboration; deconstruction of contemporary/classic literature. Explores director as primary artist.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	519	Directing: Works in Progress	Advanced projects in directing concentrating on a collaborative process among director, playwright, actors, and designers. Focuses primarily on new scripts or adaptations of literature.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	520	Directing the New Play	Advanced methods and studies in directing, focusing on new play development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	521	Performance I: Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination; emphasizes physical diagnostics and development.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	522	Performance I: Acting & Voice	Advanced studio work in the performer's voice; emphasizes physical awareness, vocal anatomy, training, and interpretation of texts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	523	Performance II:Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	524	Performance II: Acting & Voice	Advanced studio work in the performer's voice.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	525	Design I: Concept & Collaborat	Conceptual structures of the design process in theatre; development of creativity, flexibility, and communication in the collaborative process.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	526	Design I: Drawing & Rendering	Development of drawing and rendering skills, techniques, and evaluation in the presentation, realization, and communication of performance design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	527	Design II: Concept & Collabor	Offers students the chance to develop advanced skills in creating fully realized design ideas, particularly in working with new and experimental forms. Through the coursework, readings, and projects, students develop new methods and systems of thought for dealing with challenging dramatic works.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre major
THP	528	Design II: Visual&Presentation	Advanced skills and techniques in rendering, visualizing and presenting design ideas and materials for performance.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	529	Viewpoints and Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal, performance and creating new work.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): School of Film, Dance and Theatre MFA or PhD student
THP	540	Scene Design Applications	Conceptual and practical application of the design process including graphic and sculptural projects. Practical design problems investigated in a lab.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Art or Master of Fine Art Theatre student
THP	545	Lighting Design Applications	Advanced studio projects in stage lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Fine Arts Theatre student
THP	550	Theatre Org & Management	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Theatre student

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THP	551	Arts Management	Advanced study of the principles and practices of arts management in the nonprofit and for-profit sectors.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	552	Arts Entrepreneurship	Project-based course in new venture creation for the arts.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	555	Advanced Media Design	Advanced applications for skills and practices in media design for live performance, including content creation, systems design, and playback.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre student; Credit is allowed for only THP 455 or THP 555
THP	556	Performance Technology	Examines issues surrounding the integration of live performance and digital media. Students study the work of contemporary practitioners and theorists and experiment with creating their own works of digital art.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Theatre major
THP	557	The Digital Portfolio	Crossdisciplinary exploration of methods, technologies, and aesthetics for portfolio presentation for professional designers and artists.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
THP	560	Dramatic Writer's Workshop	Practice and study of creating characters, dialogue, scenes, plays, and monologues for the stage.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	561	Scripts in Progress	Studio work with the instructor centered on revisions of original plays.	N	IND	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THP	571	Dev 1: Cncept,Collab & Authorsh	Includes five primary objectives: (1) To understand the continuum between leadership and authorship; (2) To analyze collaboration through collaborative projects; (3) To learn strategies for developing a hunch and creating a source book; (4) To conceptualize a devising project starting from three distinct prompts: visual images, literary adaptations, and site-specific space; (5) To develop a blueprint for a devising process on paper that articulates time lines, budgets, development process, methods and conceptual design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	572	Devising II: Methods	Introduces three devising methodologies: (1) Moment Work by Tectonic Theatre Project; (2) Frantic Assembly; and (3) site-specific/immersive theatre and audience participation. Divided into three units that introduces the vocabulary of each methodology and an autocours (student-devised work) using that specific methodology.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571
THP	573	Devising III: Projects	Culmination of previous coursework where students form groups for the entire semester and determine (1) their leadership/authorship structure; (2) their "hunch" or idea; (3) their preferred devising method(s); and (4) their collaborative process. Over the course of the semester, each group begins developing a 30-minute original devised work to be showcased at the end of the semester for graduate faculty and an invited audience. The pieces can occur in a FAC space or site-specific location.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572
THP	574	Devising IV: Production	Culmination of previous coursework where students continue to work on their culminating applied project. Each weekly seminar, a student presents a work in progress of his or her original, devised work and receives mentorship, peer review and feedback.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572; THP 573
THP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	582	Theatre for Social Change	Advanced, interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate or Doctoral student
THP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Theatre student
THP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		

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THP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Fine Arts Graduate student
THP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Fine Arts graduate student
THP	611	Sites of Inquiry-Performance	Examines scholarly, artistic and pedagogical pursuits in fieldwork and site-based studies in theatre, drama and performance. Requires development and execution of a research project.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Pre- or corequisite(s): THE 500 or 700
THP	618	Theatre for Youth Practicum	Practical experience in theatre for youth projects: improvisation, education, production.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisites: Master of Fine Arts or PhD Theatre for Youth student
THP	649	Design Studio	Projects include design of scenery, costume, lighting, or sound for lab or mainstage productions.	N	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisites: Master of Fine Arts Theatre student
THP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Fine Arts or PhD Theatre student
THP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
TMC	110	Understanding the Enterprise	Introduces essential functions required in technology-based and innovative enterprises and viewed in the context of their relationship to each other; examines the enterprise's role in society.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		
TMC	310	Promotion of the Enterprise	Whether they are entrepreneurial ventures or established companies, effectively promoting products is key to enterprise performance. Focuses on how to promote products from ideation to launch to growth. Covers understanding customers (values, behavioral economics); formulating strategies (landscape, segmentation, positioning); tactics (4P's); networks and data; digital promotion and growth. Also reviews quantitative techniques (conjoint, DOE, optimization). Applies concepts to market challenges and derives optimal solutions through analysis, strategy and tactics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 110 with C or better or minimum 56 hours OR Visiting University Student
TMC	320	Funding the Enterprise	Focuses on financial resource management techniques utilized by U.S. domestic companies and covers the unique aspects of revenue accounting and its application to company operations. Concepts covered include: data capture of requisite information from various computer systems; determination of revenues generated from sales of products and services to customers; in-depth analysis of operational expenses; preparation of accounting and financial data; monthly accounting requirements; account reconciliation; monthly/quarterly/annual reporting; development and analysis of financial reports and billing. Emphasizes accounting, planning and valuation concerns, as well as financial trends and industry prospects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Business Administration) BA or Biotechnology and Bioenterprise BS major or TMC 110 with C or better; MAT 170 or higher with C or better OR Visiting University Student

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TMC	330	Leading the Enterprise	Comprehensive overview of leadership strategies and development as it applies to individuals, organizations and events. Applies leadership development to workplace dynamics such as technology management, entrepreneurship and globalization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better; TMC 110 with C or better OR non-Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better OR Visiting University Student
TMC	331	Quality Assurance	Instrumentation and methodologies for materials testing and quality control in various manufacturing processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TMC	410	Enterprise Operations	Emphasizes basic principles of enterprise operations management, including productivity, strategic management, global environment, forecasting, capacity planning, new technologies, location and layout strategies, supply-chain management, inventory control and scheduling. Uses common decision-making issues and related qualitative and quantitative techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	430	Enterprise Strategy & Innov	Enterprise strategic plan development and implementation, concepts of open innovation; vision, mission, steps of strategic plan development; strategic goals, objectives, tasks, schedule, resource considerations; organization's strengths and weaknesses; environmental opportunities and threats; strategy implementation, impact assessment and refinement, organizational- and management considerations, theory and practice of open innovation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Aeronautical Management Technology (all concentrations) BS major OR Applied Science (Aviation) BAS major OR MGT 300 or TMC 330 with C or better; Credit is allowed for only TMC 430 or OMT 494 (Strategic Planning & Management)
TMC	470	Enterprise Planning & Implemen	Investigates and tests tools and techniques for effective design and management of enterprise projects and programs using computer applications. Develops and demonstrates teambuilding and leadership skills in course projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 570 or TMC 470 OR Visiting University Student
TMC	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 430 with C or better; senior standing
TMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-7	L	Prerequisite(s): Fulton Polytechnic School undergraduate or graduate student; minimum 2.25 GPA
TMC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Pre Requisites: Graduate or Non Degree Students Only
TMC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only

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TSS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	501	A Deep Hstry US/Mex Brldrs I	Using a comparative and relational approach, the seminar explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from pre-contact times to the Mexican American War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	502	Found of Transborder Studies	Using a comparative and relational approach, explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from the Mexican American War to the recent past. Centers on comparative economic growth and development of Mexico and the United States, the impact of unequal development on the border region and its people, and the development of a transnational society in the U.S./Mexico borderlands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	503	Epistemologies & Trnsbrdr Thgt	Examines different approaches to the production and critique of knowledge relevant to transborder social, political, economic, cultural, and institutional structures and processes. The complexity of these structures and processes require transdisciplinary methods of inquiry that go beyond a single set of disciplinary assumptions. Explores the transdisciplinary articulation of theory and method, and considers the strengths and limitations of various approaches and critiques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	504	Tools for Transborder Research	Focuses on the selection of methods appropriate for transborder research. Considers the pitfalls of conducting monodisciplinary research in a stratified, differentiated and multicausal world; the most robust methods used in various approaches; the main methodological obstacles to transdisciplinary research; and the challenges of using mixed methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	505	Theories & Methods Migration	Divided conceptually in three broad analytical areas: (1) migration with an emphasis on demography, (2) health with an emphasis on epidemiology, and (3) public policy analysis. Provides basic training in the application and interpretation of quantitative and qualitative methods and techniques commonly used in researching these areas. Applies these techniques to issues that are specific to the reality of transborder and/or transnational contexts. Students are required to apply and present an analysis in their field of interest which demonstrates their grasp of theory and method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	506	Theory & Mthds Transborder MEC	Overview of the interdisciplinary theories and methods employed to research and analyze media and creative cultural production. Objects of analysis include literature, film, live performance, theater, Web-based media, popular culture production, and visual arts. Required readings elucidate strengths, limitations, and applicability of particular theories and methods to different types of creative expression and media production as well as to their historical and political contexts. Students engage with, critique, and contribute to the theories and methods presented in the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	507	Thry Mthds Transbr Clt Lng Lrn	This course familiarizes graduate students with literature on relationship between culture, language, and learning, and their theoretical and methodological underpinnings within a transborder context.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TSS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	601	Intmshp Trmsbd Studies	Academic internship helps students become full participants in globalized, transnational contexts through a combination of practical experiences in community organizations, readings about transnational life in globalized contexts, reflection, and discussion.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	607	Colloq Transborder Studies	Provide students the opportunity to present their skills, learning, research, and topical interests before an open forum of faculty and students at the beginning of their third year and prior to their dissertation research.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	608	Trmsmt Trmsbdr Stds Pblcs Inst	Provides students with the most recent advancements in presenting the underlying theory, methods, and techniques in transborder analysis and application. Designed to enter multiple audiences in public, professional, academic, and school settings, course takes advantage of the latest developments in multimedia, print, and electronic technology, film, and print in order to provide systematic and detailed learning opportunities. Provides the basis of developing capacities to create and develop learning modules, and programs on issues of transborder political ecology, economic transformations, cultural development and emergence, literary constructions and projections, and issues of identity, class, and gender. Course is conducted bilingually and makes use of Spanish- and English-language resources. For this reason, it is advisable, but not required, that students are at least conversationally proficient with Spanish and English.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	609	Prspctus Desgn Trmsbd Studies	Provides doctoral students with the necessary tools to prepare a research proposal that could be submitted as a dissertation prospectus or to a funding agency. Students bring a well-formulated idea of the kind of research they wish to pursue for their dissertation. They also bring a clear idea of the relevant concepts, literature and methods, required to complete the proposal.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	611	Comp TB Prspctvs Lrng	This small class emphasizes discussion, presentations by students, and written research papers. Surveys theoretical and methodological aspects related to the use of comparative and transborder perspectives to the study of education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	612	Pol Cult Lrng Chng TB Cnbt	Examines a variety of development and learning issues confronting linguistically and culturally diverse groups with an emphasis on immigrant children and families. Includes such topics as: (1) Theoretical foundations and their related impact on organizing interventions for learning and socialization. (2) The intersection of the development of language, culture, and learning in context of linguistic diversity and immigration. (3) The influence and impact of public policy on language minority groups of immigrant backgrounds.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	614	Blngsm Dvrs Acq Prct Ctxts	Examines bilingualism, language in society, and languages in contact in transborder contexts and bilingual schooling.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): PhD student
TSS	615	Dial Inq TB Cnxts	Introduces the application of dialectical inquiry in value-relevant grounded research methods as a complementary approach to value-free scientific inquiry into practical problems in transborder cultural acquisition, language development, and learning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TSS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
TWC	214	Storytelling with Data	Students read and discuss theories of data visualization as well as produce a wide range of visualizations using a variety of data sets. Students learn how to process data to discover what's important about the data, and how to use data to tell visual stories that attempt to persuade, inform and engage audiences. Students learn basic principles of design and narrative to help them develop visually engaging data visualizations in narrative patterns that tell interesting and persuasive stories. And, they use a variety of software tools to construct data visuals and how to make choices in visualization style.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
TWC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	301	Fundamentals Writing Dig Media	Foundational concepts and technologies of writing for a variety of digital media.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TWC	347	Written Comm for Managers	Strategies, techniques and genres for developing and presenting information intended for business and other workplace audiences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student

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TWC	361	Writing for Health Care Mgmt	Strategies, formats, and techniques for effective writing and presentation of information for nursing professionals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): RN-BSN student; ENG 102, 105, or 108 with C or better; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	362	Writing in Health Professions	Focuses on effective communication practices in health-related fields, emphasizing communicating professionally with both scholarly and workplace audiences. In addition to providing a foundation in workplace communication, emphasizes information and technology literacy to help students become proficient in collecting, analyzing, interpreting and synthesizing information using appropriate tools, sources and styles.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Medical Studies major or Edson Nursing and Health Innovation student; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	371	The Science of Science Comm	Aims to teach science students how to effectively communicate across a range of audiences about why science matters, how it works and its relevance to the way we live our lives. Students learn to communicate effectively in a digital age where content is easily accessed, but understanding that content is harder to achieve. They also learn how to measure the effectiveness of their communication of science.	N	LEC	Y	NSW	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TWC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	401	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 401 or TWC 501 OR Visiting University Student
TWC	403	Writing for Prof Publication	Analyzes the market and examines the publication process, including the roles of the author, editor, and reviewer.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours
TWC	411	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 411 or TWC 511 OR Visiting University Student
TWC	414	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 414 or TWC 494 (Visualizing Information or Information Visualization) or TWC 514 or TWC 598 (Visualizing Information or Information Visualization) OR Visiting University Student
TWC	421	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 421 or TWC 521 OR Visiting University Student
TWC	422	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 422 or TWC 494 (Social Media in the Workplace) or TWC 522 OR Visiting University Student
TWC	431	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 431 or TWC 531 OR Visiting University Student
TWC	435	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents, and websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 435 or TWC 494 (Global Issues in Technical Communication) or TWC 535 OR Visiting University Student

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TWC	436	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication) OR Visiting University Student
TWC	443	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 443 or TWC 543 OR Visiting University Student
TWC	444	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 444 or TWC 544 OR Visiting University Student
TWC	445	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing, and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 445 or TWC 545 OR Visiting University Student
TWC	446	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 446 or TWC 546 OR Visiting University Student
TWC	451	Copyright/Intellect Prop/Elect	Explores issues related to copyright and intellectual property laws, with emphasis on electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 451 or TWC 551 OR Visiting University Student
TWC	452	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 452 or TWC 552 OR Visiting University Student
TWC	453	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 earned hours; Credit is allowed for only TWC 453 or TWC 553
TWC	454	Information Tech & Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 454 or TWC 554 OR Visiting University Student
TWC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
TWC	490	Capstone	Development of a professional portfolio, creation of a culminating document, and synthesis of undergraduate experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 87 hours
TWC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
TWC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student
TWC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
TWC	501	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 401 or TWC 501

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TWC	504	Applied Rhetoric and Tech Comm	Foundation in applied and technical communication. Covers the emergence and development of technical communication as a profession and field; rhetorical concepts and their application to technical and applied communication, ethical issues; and the impact of internationalization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student
TWC	505	Research in Tech and Appl Comm	Explores the research process and methods appropriate for technical and professional communication. Provides a foundation for understanding the research process; designing and planning valid research within the context of technical and professional communication; collecting and interpreting information, ethical issues related to research; and reporting results.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 504
TWC	506	Research Design & Development	Focuses on the research process, including the development of research questions, selection of appropriate methods, preparation of a literature review, and design of research projects. Prepares students to design the research for their applied project or thesis. Students apply their knowledge of research methods and the research process by preparing a fully developed proposal at the conclusion of the course.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 505; minimum 24 graduate TWC hours
TWC	511	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 411 or 511
TWC	514	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 414 or TWC 494 (Information Visualization or Visualizing Information) or TWC 514 or TWC 598 (Information Visualization or Visualizing Information)
TWC	521	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 421 or TWC 521
TWC	522	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 422 or TWC 522
TWC	531	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 431 or TWC 531
TWC	535	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents and Websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 435 or TWC 535 or TWC 598 (Global Issues in Technical Communication)
TWC	536	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools, and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life-cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations, and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication)
TWC	543	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 443 or TWC 543

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TWC	544	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 444 or TWC 544
TWC	545	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 445 or TWC 545
TWC	546	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 446 or TWC 546
TWC	551	Copyright/Intell Prop/Elec Age	Explores issues related to copyright and intellectual property laws; emphasizes electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 451 or TWC 551
TWC	552	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 452 or TWC 552
TWC	553	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 453 or TWC 553
TWC	554	Information Tech and Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 454 or TWC 554
TWC	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): User Experience MS student; minimum 24 graduate TWC hours; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
TWC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	596	Capstone	Synthesizes and applies the concepts, skills, strategies and techniques learned in courses completed for the program. Also reflects upon that work, analyzing their strengths as a technical communicator and identifying areas for growth. Demonstrates ability to respond to the needs of specific audiences and communication situations by selecting from their work to craft a substantive professional dossier that presents a compelling story of their technical communication abilities, along with a reflective statement that discusses their work in relation to program outcomes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student

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TWC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
UET	305	Intro to Microelectronics	Quantifies the role of microelectronics technology and its associated skills as drivers for electronics systems development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite: Academic Level greater than or equal to Junior
UET	331	Electronic Materials	Physical, chemical, electromagnetic, and mechanical properties of electronic materials. Solid-state device characteristics and their material properties.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; CHM 113; PHY 112 OR Applied Science (Electronic Energy Systems) BAS student
UNI	110	Critical Reading and Thinking	Prepares students to be successful in college-level academics and helps them improve their critical reading and critical thinking skills.	N	LEC	N	OPT	University College	Dean, University College	3		
UNI	120	Academic Success	Assists students in creating strategies for success in their academic lives. Students explore personal and academic strengths and barriers that impact success, identify and utilize university resources available to support success at ASU, acquire and enhance academic skills necessary for success in the university, and discover ways to stay on course to meet academic goals.	N	SEM	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 150 or UNI 120 or UNI 194 (Academic Success: Residential, Academic Success: Off-Campus, or Academic Success Seminar) OR Visiting University Student
UNI	150	Major and Career Exploration	Concepts and skills in the process of selecting a major: self-assessment, research, interviewing, and decision making. Exploration of ASU opportunities and investigation of career options.	N	SEM	N	OPT	University College	Dean, University College	1		
UNI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	University College	Dean, University College	1-4		
UNI	220	Mindset Connections	Explores how students' strengths and barriers influence success (i.e., how mindset, perception and beliefs influence behavior) and discovers methods for staying focused and meeting academic, personal and professional goals. Students acquire and enhance emotional intelligence skills for success in and out of the classroom.	N	SEM	N	GNA	University College	Dean, University College	1		
UNI	240	Researching Mindfulness	Explores mindfulness and the impact it has on success as a student, an individual and in the future. Therefore, students research instructor-approved topics within the subjects of psychology, emotional regulation and mindfulness in order to deepen their understanding of how the brain and the mind influence beliefs, choices, behaviors and learning. Students develop skills that support their academic, personal and professional goals, using tools such as Dweck's Mindset Theory and Rock's SCARF Model. Develops critical thinking skills, and how to apply research to their daily lives.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only UNI 240 or UNI 294 (Mastering Mindsets)
UNI	250	Choosing a Major	Advanced, one-hour career development course helps students make a thoughtful selection of major and consider the career direction that fits best for them. Students complete advanced assessments of interests, personality, and values; investigate relevant majors and careers, including connecting with working professionals; learn effective decision-making strategies; identify barriers and resources; and make connections to new major department.	N	SEM	Y	OPT	University College	Dean, University College	1		Prerequisite(s): UNI 150 with a C or better OR Visiting University Student
UNI	270	Career Direction for Success	Actively engages students in their educational and career-planning process by exploring factors that influence personal decision making and planning for the future. Students examine their strengths and personal narrative, identify decision making factors, research career development and a particular career, and develop teamwork skills for the workplace.	N	SEM	N	GNA	University College	Dean, University College	1		Prerequisite(s): UNI 250 with C or better; Credit is allowed for only UNI 270 or UNI 294 (Next Steps in Career & Major Exploration) OR Visiting University Student
UNI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
UNI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
UNI	400	Society and the Individual	Various social institutions, how they shape the socialization process of a group and individual and give a community meaning, values and a set of norms. Focuses on Arizona as a case study for student research inquiries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Bachelor of General Studies major; minimum 2.00 GPA; minimum 90 hours; Credit is allowed for only UNI 400 or COM 494 (Society and the Individual) OR Visiting University Student

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URB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
URB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
URB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student
URB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
USL	210	Srvclrning:Intro Commtly Issues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions, and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship, and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	
USL	216	Service Learning:For Educators	Examines the effects of social justice issues on student achievement. Correlates academic coursework with required community service to analyze community needs, the importance of civic engagement and community issues affecting ethnic minorities and marginalized populations in contemporary American society, particularly how it applies to our education system. Students dedicate a minimum of 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services) directly serving high-needs youth or adults. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and social injustices, and how to utilize this knowledge in the teaching profession to better serve all students. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): Mary Lou Fulton Teachers College major OR Visiting University Student
USL	402	Service Learning: Educ & Youth	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement, and an in-depth study of the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society as they apply to education in Arizona and the United States (policy, student achievement, teacher and administration effectiveness and parental involvement). Students dedicate 100 service hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies), directly serving high-needs youth. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and the importance of civic engagement particularly how it applies to the education system. Provides real-world experiences that exercise advanced academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student

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USL	410	SrvLrning:DiverseCommyIssues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 100 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
USL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
USL	496	Service-Learning Capstone	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Applies theory from service-learning pedagogy and educational studies to real-world application and academic success. Provides field experience for students to exercise academic knowledge and skills applicable to career experience and program studies. Students must (a) successfully assess a community need in education that correlates to current research and (b) collectively plan a sustainable service project that benefits high-needs children. The student-directed service project addresses social justice issues in education related to corresponding research.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 402 or 410
USL	497	Service-Learning Capstone Proj	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Implements a sustainable service project addressing social justice issues in education. Student-directed project corresponds to research and planning completed during the previous semester. Provides field experiences for students to implement academic knowledge and skills acquired through the Educational Studies program and to create realistic solutions to national and local community issues that impact student achievement.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 496
VIP	194-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	194-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	194-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	194-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	194-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	294-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	294-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	294-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	294-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	294-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	394-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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VIP	394-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	394-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	394-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	394-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	394-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	394-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	494-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	494-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	494-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	494-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	494-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VTN	101	Elementary Vietnamese I	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	
VTN	102	Elementary Vietnamese II	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 101 with C or better
VTN	201	Intermediate Vietnamese I	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 102 with C or better OR Visiting University Student
VTN	202	Intermediate Vietnamese II	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 201 with C or better
VTN	321	Adv Vietnamese & Literature I	Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): VTN 202 OR Visiting University Student
VTN	322	Adv Vietnamese & Literature II	Continuation of VTN 321. Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Pre-requisite: VTN 321
VTN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
VTS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
VTS	301	Veterans, Society and Service	Be part of this new field in veteran studies to create bridges among military, veteran and civilian cultures. Who are veterans? How and why do citizens become military service members and what is the experience of recruitment, training, service and transition to civilian life? How do we "read" a military uniform and differentiate the language and cultures of the five branches? How does military service lead or follow the nation in issues of class, gender, civil rights and LGBTQ? What are society's obligations to veterans and families as they transition through health care, higher education, employment and continued service?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student
VTS	302	Representations of Veterans	What is a hero? At what cost do we create them and how do they make a total homecoming after trauma? What do we mean when we use words like sacrifice, warrior queens, war crimes, and just war? Using sources from the Bhagavad Gita through Homer and Shakespeare, course surveys the foundations of history, war, politics and economics as well as the mythology of religious practices of Greeks and Romans to see the change and consistency with contemporary visual arts, theater, fiction, social media, poetry and film.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
VTS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		

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VTS	402	Undergraduate Research	Students learn about various research tools and methodologies of use in developing individual or group research projects in the veteran studies field. Completed projects may include bibliographies, literature reviews or articles for publication.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): VTS 301; VTS 302
VTS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
VTS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
WAC	101	Intro to Academic Writing	Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ACT English score of 0-18, or SAT Verbal score of 0-510 (or SAT Verbal score of 0-460 if taken before 2016), or Accuplacer score of 0-4 OR Visiting University Student
WAC	107	Intro to Academic Writing	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): TOEFL score below 560PBT/220CBT/83iBT, or IELTS score 0-6.5, or ACT English score 0-18, or SAT Verbal score 0-510 (or SAT Verbal score 0-460 if taken before 2016), or Accuplacer score 0-4 OR Visiting University Student
WAC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
WPC	101	Student Success in Business	Introduces students to resources that help them to succeed in the W. P. Carey School of Business.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Credit is allowed for only ASU 101 (or equivalent) or WPC 101 or WPC 201 or WPC 194 (Business Student Development) OR Visiting University Student
WPC	148	Intro to Career Development	Building career skills, interests and strengths as a college student.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; minimum 12 hours; Pre- or corequisite(s): ACC 101 or WPC 101; Credit is allowed for only WPC 148 or WPC 301 or WPC 347 OR Visiting University Student
WPC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	248	Soph Career Narrative Design	Research methods and strategic thinking for finding internships.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 148 with C or better; minimum 30 hours; Credit is allowed for only WPC 248 or WPC 301 or WPC 347 OR Visiting University Student
WPC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	300	Prob Solving & Act Analytics	Provides foundational skills for exploring unstructured business problems. Covers techniques to approach decision making in a systematic manner, enabling students to become more comfortable in handling tasks or projects that are not initially well defined. Methods include exercises in brainstorming and iterating as well as use of more traditional analytical tools (such as spreadsheets and visualization software).	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prq(s): BUS mj w/C or btr: ACC231, 232, 261; ECN212, 214; ECN221, 231, IEE380 or STP280; MAT211, 266, 271 OR Tch Ldrsp mj; 30 hrs; AME230, CSE110 or SES 230(130); STP226; Pre-or corq(s): BUS mj; ACC 241, 242, 271 w/C or btr OR Visiting University Student
WPC	301	Business Forum	Provides professional program business students with information on careers, interviewing, job hunting, and résumé skills. Must be taken in the first semester of the professional program for business students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Prerequisite(s): Business BA or BS major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 or WPC 348 or WPC 448 or WPC 449 OR Visiting University Student
WPC	347	Intermediate Career Management	Skills for transfer students for balancing career preparation with academic success as they transition to the W.P. Carey School of Business.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.5		Prerequisite(s): Business major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 OR Visiting University Student
WPC	348	Junior Networking Foundations	Career relationship-building techniques and full-time, job-readiness skills.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 248 or 347 with C or better; minimum 60 hours; Credit is allowed for only WPC 301 or WPC 348 OR Visiting University Student
WPC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR Visiting University Student

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WPC	448	Sr Career Transition Mgmt	Intensive application of the job search cycle and processes for students still seeking post-graduation employment.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449 OR Visiting University Student
WPC	449	Campus to Career	Transitional skills for workplace success for students who have obtained post-graduation, full-time, college-level positions or graduate school acceptance.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449
WPC	470	Business Admin Capstone	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers buy at prices that cover the costs of producing them is the key to success for business organizations. The starting point for thinking about how an organization might create value and gain sustainable competitive advantage is analyzing current and future environments to understand threats and opportunities in various institutional settings around the world. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s) with C or better: W.P. Carey Bus Admin or Health Care BA major; FIN 300, 302 or 303; LES 305; MGT 300 or 303 or HCD 302; MKT 300, 302 or 303; SCM 300 or 303; Int'l Bus course; senior standing; Credit is allowed for only WPC 470 or 480
WPC	480	Capstone Course	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers will buy at prices that cover the costs of producing them is the key to success for business organizations. Analyzing current and future environments to understand threats and opportunities in various institutional settings around the world is the starting point for thinking about how an organization might create value and gain sustainable competitive advantage. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3	L	Prerequisite(s) with C or better: W.P. Carey BS major; FIN 300, 302, or 303 or IEE 300 if Engr Mgmt major; LES 305; MGT 300 or 303; MKT 300, 302, or 303; SCM 300 or 303; Int'l Bus course; senior standing; Credit is allowed for only WPC 470 or WPC 480
WPC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-6		Prerequisite(s): Barrett Honors student
WPC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Prebusiness Office	1-6	L	Prerequisite(s): Barrett Honors student
WPC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): W. P. Carey BS or BA major; minimum junior standing OR Visiting University Student
WPC	501	Statistics for Business	Fundamentals of statistical analysis to aid management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	2-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	502	Career Coaching	Prepares students to navigate the challenging MBA world of work. Applies theories and best practices of career management and job search to help students make informed career choices, to obtain an internship between year one and year two of the program, and to obtain a full-time position upon graduation.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): W.P. Carey MBA degree major; Credit is allowed for only WPC 502 or MGT 594 (Career Leadership)
WPC	503	Managerial Communications	Provides opportunity to develop and enhance all aspects of business communications including presentation skills, business writing, informal business communication and giving feedback. Students (1) use PowerPoint or other presentation tools to deliver an effective team presentation; (2) write an effective memo proposing a course of action to solve a business problem; (3) deliver effective feedback to peers to enable them to improve their communications skills; and (4) communicate effectively in a team problem solving setting.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WPC 503 or MGT 594 (Leadership Communication)

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WPC	504	Basics of Stats for Managers	Provides conceptual introduction to the field of statistics and its many applications. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): degree-seeking graduate student
WPC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-12		
WPC	585	Future Forward Leadership	Today organizations operate in a world that is globally and economically connected, complex and rapidly changing. Rapid technological change and start-up disrupting companies are changing the speed and nature of work. The evolving nature of work requires leaders who know how to contextualize and understand ambiguous, uncertain problems, to discover innovative and creative solutions. Future Forward Leadership develops the cognitive and leadership capabilities for this changing arena. The course builds on the knowledge gained in all of the prior courses in the MBA curriculum and applies it to ambiguous and volatile problems and issues. Team taught by faculty from across ASU and WP Carey using simulations and scenarios and hot evolving cases covering the following topics: design thinking, improvisation, super-flexibility, uncertainty, sense-making, execution through experimentation and recalibration.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	2.5		Prerequisite(s): W.P. Carey MBA major
WPC	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	100	Women, Gender, and Society	Interdisciplinary introduction examining critical issues in women's studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only WST 100 or WST 300 OR Visiting University Student
WST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisites: Must be a freshman with 25 or less total earned hours
WST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	220	Gender, Media and Culture	Introduction to gender and the media including magazines, films, advertising, new media, and other popular culture forms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	
WST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 or SST 294 (Disability Justice and Advocacy) OR Visiting University Student
WST	270	Global Perspectives on Women	Through lectures, creative class activities and discussions, presents a comprehensive overview of gender and globalization with special emphasis on lived realities of women worldwide. Understands women's lives and gendered experiences through the issues of work, identities (nationality, race, class, age, ability), bodies and embodiment, belief systems, political economy and difference.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only WST 270 or WST 294 (Global Perspective on Women)
WST	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
WST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	300	Women & Gender Contempry Soc	Advanced interdisciplinary examination of such topics as gender, intersectionality, media and representations, sexuality, politics, health, violence and feminism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 30 hours; Credit is allowed for only WST 100 or WST 300 OR Visiting University Student

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WST	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
WST	313	Women and Sexuality	Explores U.S. women's sexuality in social context, including how women's sexuality is portrayed in popular media, medicine and education; how girls learn to think about sexuality; and how public policies address women's sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	320	Gender, Drugs and Alcohol	Drug and alcohol use have multiple and diverse meanings shaped by their historical, social and cultural context. Examines how and why alcohol and drug use have been identified as social problems and the role of gender in shaping this process. Reviews multiple social and cultural aspects of gender, drug and alcohol use, as well as the emergence of gender-based health disparities within this context. Fulfills a science and society requirement. Basic scientific principles such as the formulation of research questions, data collection and analysis, have been used to develop our understanding of gender, drugs and alcohol. How society influences the nature of those questions, the perceived value attached to particular scientific studies over others, and how to critically evaluate law and policy around drugs and alcohol in light of those studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only WST 320 or WST 394 (Gender, Drugs and Alcohol) OR Visiting University Student
WST	330	Women, Film, and Culture	Critical examination of the way films can reflect, reinforce or challenge mainstream cultural ideas about women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 with C or better OR minimum 30 hours
WST	331	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
WST	333	Crit Perspectives on Sexuality	Examines critical theories of sexuality, including history, commerce, pleasure, LGBT issues, identity, medicalization of sexuality, disorders, sex crime, and pornography.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	335	Gender, Race, & Sex in Sci Fi	Surveys the complex interrelationships of biomedical research and discourses of biological difference as reflected in science fiction. Explores such questions as: How have biological scientists explained human differences along axes of gender, race, class, sexuality? In what ways have these scientific discussions manifested themselves in science fiction?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only APA 394 (Science Fiction Adventures Race/Gender) or WST 335 or WST 394 (Lost in Space: Gender, Race, & Sexuality in Sci Fi) OR Visiting University Student
WST	340	Gender, Science & Technology	In-depth examination of the complex interrelationships of gender, science, technology, and society in a number of different contexts. Looks at the participation of women in scientific and technical fields both historically and cross-culturally, and addresses such topics as: gender segregation by status and discipline, feminist theories of gender and science, the conditions under which women have succeeded in the sciences, gender and biological determinism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	341	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341
WST	345	Gender, Religion & Violence	In-depth study of forms of gendered violence in which religion plays a key role in either the practice or perpetuation of that form of violence in a myriad of cultures and contexts. Analyzes current responses and proposes new approaches to combating or redefining these forms of violence, emphasizing the need to understand and respect the religious and cultural contexts in which these actions occur.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Pre-requisites: WST 100, 300 or minimum 30 hours
WST	360	Women as Healers	Advanced examination of the role of women as caregivers, healers, physicians, midwives, and nurses in different cultures and historical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours

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WST	364	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 earned hours; Credit is allowed for only AFR 365 (or AFH364) or WST 364
WST	365	Women Int'l Health	Advanced study of gender-based disparities and global health, including impact of poverty, gender discrimination, political economy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	370	Chronicling Women's Lives	Explores the lives of a selected group of American women as a point of departure for the chronicling of contemporary women's lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	371	Sex and the City	An in-depth study of the changing media representations of young, sexually autonomous women in the city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours. Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student
WST	374	Desperate Housewives	In-depth examination of the representations of women as wives and/or mothers in the popular discourse from the 20th century to current day through an analysis of various forms of popular culture such as film, magazines, popular writing and television.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Minimum 30 hours; Credit is allowed for only WST 374 or 394 (Desp Housewives: Gender, Family & Pop Culture)
WST	375	Women & Social Change	In-depth course on feminist activism and social change. Combines research and theory on a contemporary social problem with a community action experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	376	Feminist Theory	Explores feminist theories and the intersection of gender, race, ethnicity, and class through critical analyses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	377	History/Amer Feminist Thought	Critical analysis of the origins and development of American feminist thought and political movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	H & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	378	Global Feminist Theory	In-depth studies of global feminist theories and exploration of the intersections of gender, race, ethnicity, class, and nation through critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
WST	382	American Indian Women	Investigate the economic, political and ideological factors contributing to American Indian women's intellectual and creative activities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 30 hours; Pre- or corequisite(s): AIS 180 or WST 100 or WST 300 with a C or better; Credit is allowed for only AIS 381 or WST 382
WST	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
WST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
WST	413	Queer Studies	In depth exploration of lesbian, gay, bisexual, transgender, and queer experiences in the U.S. and globally, from an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better or minimum 45 hours
WST	415	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit for only ENG 443 or ENG 494(Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student

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WST	417	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
WST	420	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
WST	421	Girlhood and Adolescence	Critical analysis of the changing construction of girlhood and female adolescence through history, memoir, fiction, myth, music, and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422
WST	428	Gender, Madness and Justice	Interrogates the interplay among gender, madness and justice; that is, the treatment of women and men within psychological discourses both individually and within the culture at large. Utilizes a feminist and social justice perspective to interrogate a variety of subjects related to the psychology of women and gender, including histories of madness, socialization, childhood, adolescence, intelligence, eating behavior, sexuality, queerness, violence, depression, therapy and activism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
WST	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Movt)
WST	440	Politics of Women's Health	In-depth and interdisciplinary exploration of how women's social, cultural, and economic position affect their health and health care.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Pre-requisite: WST 100 or WST 300 or minimum 45 hours
WST	444	Gender, Health, and Bodies	Explores gender and health from a feminist perspective, including critical analyses of medicine, science, and popular culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better; Credit is allowed for only MAS 598 (Gender, Health, and Bodies) or WST 444
WST	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development)
WST	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WST	457	Women, Cultures, and Societies	Examines issues such as poverty, dependency, interdependency, race, class, and gender in different societies of the world.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	460	Women and the Body	In-depth analysis of the cultural construction of the gendered body and societal prescriptions about beauty, body image, and size.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	467	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Latina, and Asian-American.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 (or WST 300) with C or better; Credit is allowed for only ENG 460 or WST 467
WST	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or WST 469 or WST 494 (Trash, Freaks and SCUM) or JHR 598 (Trash, Freaks and SCUM) or MAS 598 (Trash, Freaks and SCUM)
WST	470	Gender and Popular Culture	Advanced interdisciplinary examination of how gender is constructed in various popular cultural forms such as film, television, magazines, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Pre-requisites: WST 100 or WST 300 or minimum 45 hours
WST	471	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471
WST	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
WST	477	Gender and Violence	Critical examination of gender-based violence from societal, institutional and individual levels using intersectional and interdisciplinary perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	483	Women Writers Across Cultures	Comparative approach to contemporary writings by women from around the world.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	485	Women, Gender, and Leadership	Explores the gendered nature of leadership and studies strategies that enable women to lead successfully in areas such as business, education, and public service.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	490	Tmsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latina/o artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL 490 or WST 490
WST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
WST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student
WST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Pre-requisites: WST 100 or 300 with C or better; ENG 101 or ENG 107 or ENG 105; Majors only

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
WST	501	Foundational Feminist Thought	Provides key concepts and theories that have shaped the field of women and gender studies. Also provides overview of resources for research in women's studies scholarship at ASU and prepares students to participate in the field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 501 or WST 691 (Foundations of Fem Thought)
WST	502	Gender Research Methodologies	Describes the ways in which feminist scholars conceptualize and design their research. Explores the decisions scholars make in their research including the choice of research topics, applications of feminist theories and methodologies, the choice of methods and how and why feminist scholars have increasingly incorporated interdisciplinary methods, and what is at stake in these decisions for the research design and research outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: degree-seeking graduate students only
WST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
WST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	LEC	N	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	601	Critical Concepts of Gender	Key concepts, theoretical frameworks, disciplinary and interdisciplinary approaches, and the critical debates that have shaped the field of gender studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: degree-seeking graduate students only
WST	602	Mapping Intersections Gender	Theoretical concepts, metaphors, and frameworks employed by feminist scholars to understand the way gender articulates with other categories of difference.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	603	Engendering Methodology	Focuses on the methodologies, epistemologies, and ethical dilemmas of researching gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	615	Masculinities	Explores the theoretical concepts, frameworks and disciplinary and interdisciplinary approaches that have accompanied the emerging analysis of masculinity studies as a field. Interrogates the ways in which masculinities have been defined in relation to femininities and other institutionalized constructions of difference, and how these definitions have contributed to material conditions and specific socio-historical contexts in which gendered bodies are included or excluded, privileged or disadvantaged, taken for granted or contested. Considers the articulations and contestations of diverse masculinities as expressed through gender, race, sex, ethnicity, sexuality, kinship, politics, popular culture, economics, nationalism, science and medicine, and violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 615 or WST 691 (Masculinities)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WST	620	Advanced Feminist Theory	Concentrates on transnational feminist theory and its intersections with queer theory, postcolonial theory, and critical race theory. Also looks at the ways in which (or indeed, whether) academic discourses have anything useful to say about the worlds in which we live. Among the questions we'll need to have constantly in our minds are: In what ways has feminist theorizing changed over time? Does transnational feminist theory challenge or even undermine previous feminist theoretical discussions or the perspectives you might be familiar with from your undergraduate days? What kinds of engagements do our authors have with theorists in other areas (queer studies, postcolonial studies, critical race theory)? Can you discern any sort of new feminist grand narrative emerging from these works? In what ways might our authors' perspectives help you conceptualize and contextualize your own work?	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 620 or WST 691 (Feminist Theory) or WST 791 (Feminist Theory)
WST	640	Visual & Narrative Culture	Feminist analysis of gender representations in visual and narrative culture, including film, dramatic literature, fiction, and autobiography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	701	Resrch Design & Prop Dev	Prepares students for careers in gender studies by developing skills in research design, proposal writing, and identifying funding outlets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
WST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
WST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
WWS	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WWS	561	Decision Points I	In-depth analysis of the origins, impact and controversies over the key decisions related to the beginning and early years of World War II, with an emphasis on the contingent nature of historical events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	562	Decision Points II	In-depth analysis of the origin, impact and controversies over the key decisions related to the later years and the ending of World War II, with an emphasis on the contingent nature of historical events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	563	The Lived Experience of WWII	Using the vast oral history collection of the National World War II Museum in New Orleans, Louisiana, this course examines how individuals experienced the war. A number of factors shaped how people experienced the war--whether one was a soldier, non-combatant, resistor or collaborator. Focuses on how ordinary people made sense of their experiences during the war. In addition, students explore the theory and practice of collecting and using oral histories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	564	The Global War	Examines the global dimensions of World War II with particular focus on those regions which have been deemphasized in Western historical discourse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	566	World War II Today	Analyzes the impact and legacy of World War II, with an emphasis on the roots of contemporary problems and issues. A global conflict that impacted millions of people, World War II fundamentally reshaped the political and cultural landscape of our planet. Explores the new global order that emerged after the end of World War II in 1945. While the war had immediate impacts in the postwar era, the legacy of the war continues to inform current conflicts across the globe and resonates in the current social and political order. This is especially apparent in how contemporary narratives situate, remember and memorialize the war. Uses themes to help us think historically and uncover the historical roots of the present order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
WWS	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568
WWS	569	Memory and Monuments	Focuses on the historical memory of World War II by examining the processes of commemoration, monument building, and memorialization. Through theoretical texts and case studies, students explore how societies remember and forget and how they create collective memory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WWS	597	Capstone	Students draw on the experiences, skills and competencies they developed throughout the WWII Studies MA program to generate a digital portfolio that showcases the breadth and depth of their MA experience. Students refine and extend work they produced in previous WWS courses and also develop reflective essays that critically assess their performance in the program, as well as essays that articulate the transferable value of the degree to potential employers or admissions committee members. Through required components in the portfolio students demonstrate competency in source analysis, comparative analysis and argumentation, as well as the ability to effectively communicate to scholarly and public audiences.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): 21 hours of 500-level courses with C or better including WWS 561; WWS 562; WWS 563; WWS 566
WWS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

Fall 2021

Fall 2021 Course Catalog

Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ABS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	207	Applied Plant Taxonomy	Introduces identification of vascular plants emphasizing seed plants. Surveys seed plant families.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or BIO 282
ABS	225	Soils	Fundamental physical, chemical and biological properties of soils as related to sustainable natural resource management. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SQ	Prerequisite(s): CHM 101 or 113 OR Visiting University Student
ABS	226	Soils Laboratory	Selected exercises to broaden the background and understanding of basic soil principles. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LAB	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1	SQ	Pre- or corequisite(s): ABS 225 OR Visiting University Student
ABS	260	Sustainable Horticulture	Principles and practices of horticulture, emphasizing development, growth, and propagation of horticultural plants and environmental factors that affect these processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SG	
ABS	270	Sustainable Biological Systems	Ecological foundations of sustainable biological systems, anthropogenic impacts on ecosystem structure and function, and ecological risk assessment. Examines climate change, water scarcity, deforestation, soil degradation, and human displacement on global ecosystem functions and utilization of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	271	Veterinary Medicine Today	Introduces the role of the veterinarian as related to the fields of food supply and veterinary medicine.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	274	Intro to Wildlife Management	Fundamentals of wildlife conservation and management through lectures, guest speakers and lab activities. Divided into three parts: (1) introduction to conservation, management and the scientific method; (2) themes of earth, water, fire and air; and (3) wildlife techniques and field methods.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	302	Ethical & Policy Issues in Bio	Policy environment and ethics in the practice of biology. Covers ethical reasoning, policy formulation, and regulatory agencies with examples from biotechnology and the environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	311	Molecular and Cellular Biology	Overview of the biology of the cell; emphasizes structure and function of biomolecules within the cell and their applications associated with recombinant DNA technology, genetic engineering, plant and agriculture biotechnology, and human pharmaceutical development.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better OR Visiting University Student
ABS	312	Structure and Function	Surveys structural and functional attributes of plant and animals of particular importance in the applied biological sciences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better OR Visiting University Student
ABS	314	Applied Plant Physiology	Understanding control of plant growth and developmental processes through innovated technologies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	318	Unseen Life on Earth	Develops an understanding of how microbes exist in the context of both their environment and the organisms they come in contact with. Focuses on how the microbial interactions with the environment play a vital role in the multitude of biological processes that support the Earth system. Studies a myriad of extreme environments that host microbial systems, such as cloud, hydrothermal vent, acid-mine drainage and gut microbiomes. Utilizes a synthesis-driven approach where students apply their knowledge on microbial systems to discern whether life is possible on other planets. Also pays attention to the tools used to evaluate microbial diversity and function, applications of microbial ecology, and how microbes can be harnessed to improve life on Earth.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 318 or ABS 394 (Unseen Life on Earth) OR Visiting University Student
ABS	350	Applied Statistics	Statistical methods with applications in the biological sciences and natural resource management. Uses computers and the Internet.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): one course meeting General Studies MA requirement with C or better OR Visiting University Student
ABS	355	Vertebrate Adaptations	Evolution, systematics, diversity, zoology, conservation and anatomical and physiological adaptations and specializations of the vertebrates.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	360	Southwest Home Gardening	Multimedia course for nonmajors surveying contemporary topics in Southwest home horticulture, including landscaping, flower and vegetable gardening, citriculture, interiorscaping, and others.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		

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ABS	362	Landscape Plants	Identification, design, and use of plants in urban landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours
ABS	363	Sustainable Landscape Practice	Landscape technologies and practices including landscape design theory, job costing and bidding, sprinkler and drip irrigation design, landscape installation, landscape valuation techniques, landscape ordinances, and maintenance practices of commercial and residential landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): ABS 260
ABS	364	Urban Forestry	Care, maintenance, and valuation of the urban forest, including public and private landscape codes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: ABS 260
ABS	368	Plant Propagation	Theory and application of sexual and asexual propagation techniques. Considers plant materials used both for urban horticulture and ecological restoration applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	370	Ecology	Interactions between organisms and their environments; structure and dynamics of populations, communities, ecosystems, and landscapes, with emphasis on vegetation.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	372	Captive Animal Behavior Mgmt	Natural animal behaviors during captive animal management including wild and domestic animal training and enrichment, exhibit design, husbandry, and livestock management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better; Credit is allowed for only ABS 372 or ABS 394 (Applied Animal Behavior) OR Visiting University Student
ABS	376	Wildlife Ecology	Explores population biology, conservation genetics, habitat ecology, ecological communities, competition, invasive species, habitat fragmentation and connectivity, and other related topics. Students work in small groups to design, implement, and complete a field-based research project on the ASU Polytechnic campus.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre- or corequisite(s): ABS 274; ABS 370
ABS	377	International Wildlife Conserv	Studies wildlife around the world including biogeography, biodiversity, conservation topics and the complexity of conserving wildlife in both developed and developing nations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282; Credit is allowed for only ABS 377 or ABS 494 (International Wildlife Conservation) OR Visiting University Student
ABS	378	Animal Nutrition	Principles of nutrient metabolism in animal species; emphasizes understanding the interaction of animals with their environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: BIO 181 or BIO 182; CHM 101 or CHM 113
ABS	380	Restoration & Wildlife Plants	Important wildland plants, including invasive and endangered species, wildlife food species, and species used for ecosystem restoration such as rangeland revegetation and seeding.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 207 OR Visiting University Student
ABS	381	Natural Resources Policy	Policies and regulations affecting management of natural resources, with emphases on wildlife, rangeland and ecological restoration.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	384	Natural Resources Meas	Inventory, sampling and monitoring techniques of natural resources. Data evaluation and interpretation as related to management, restoration and conservation needs of natural resources.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	414	Plant Pathology	Identification and control of biotic and abiotic factors that cause common disease problems to plants.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better; ENG 101, 105 or 107 with C or better OR BIO 281 with C or better; BIO 282 with C or better; ENG 101, 105 or 107 with C or better
ABS	417	Comparative Immunology	Examines unique but also shared immunological characteristics of animals with the goal of understanding how different animals respond to microorganisms such as viruses, bacteria, fungi and parasites. Presentation of material is guided by hierarchy of structural organization, using molecules, organelles, cells, tissues, organs, organ systems, whole animals and even ecosystems and the environment to convey important concepts related to our relationships with pathogens.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 417 or ABS 394 (Comparative Immunology) OR Visiting University Student
ABS	430	Watershed Management	Hydrologic, physical, biological, and ecological principles applied to watershed management. Impact of ecosystem manipulations on water yield and quality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	434	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370 or BIO 320; Credit is allowed for only ABS 434 or BIO 418
ABS	435	Applied Systems Ecology	Simulation modeling as a tool to study ecological processes and human impact on ecosystems and organisms.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370, ABS 350 (or STP 420)
ABS	440	Ecological Restoration Techniq	Techniques for ecological restoration, riparian and wetland restoration, and monitoring restoration success.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370

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ABS	441	Ecological Restoration Practcm	Field experience in the evaluation and monitoring of implemented ecological restoration projects.	N	LEL	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre/Co-requisite: ABS 440
ABS	452	Comm App of Fermentation	Biochemical applications and technologies of fermentation including use of fungi and bacteria in fermentation to improve human health and immunity, and produce pharmaceutical drug supplements and medicines, foods, beverages, and alternative fuels.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better; Credit is allowed for only ABS 452 or ABS 494 (Commercial Applications of Fermentation) OR Visiting University Student
ABS	460	Organic Gardening	Applies principles and practices of organic gardening in the low desert, including environmental impacts of modern food production.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		
ABS	462	Greenhouse/Nursery Management	Greenhouse structures, environment, and nursery operations. Includes irrigation, nutrition, and other principles relative to production of nursery crops.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: ABS 260
ABS	464	Desert Horticulture	Students learn about and practice the principles of sustainable horticulture in an arid climate. Includes capstone projects on sustainability issues related to horticultural practice in arid environments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 260; Credit is allowed for only ABS 464 or ABS 494 (Sustainable Desert Horticulture) or ABS 498 (Desert Horticulture) OR Visiting University Student
ABS	470	Life History of Mammals	Evolution, classification, environmental, anatomical and physiological adaptations, ecology, and conservation of mammals worldwide. Emphasis on the identification, habitat relationships, conservation, and management techniques of Arizona and select North American mammals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370
ABS	472	Applied Herpetology	Systematics, evolution, ecology and life history of amphibians and reptiles emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 472 or ABS 498 (Applied Herpetology) OR Visiting University Student
ABS	473	Applied Ornithology	Evolution, ecology, classification and life history of birds, emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 473 or ABS 494 (Applied Ornithology)
ABS	474	Riparian Ecosystem Mgt	Management principles of riparian ecosystems based on fluvial geomorphological and ecological concepts. Discusses human impacts to riparian ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	475	Habitat Mgmt Small Wildlife	Habitat management considerations and practices for small game and nongame wildlife species in North America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320
ABS	476	Big Game Habitat Management	Conservation and management issues focused on large mammals in North America. Topics include habitat ecology, nutrition, migration, predator-prey dynamics, trophic cascades, habitat management and restoration of populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320 OR Visiting University Student
ABS	479	Ecosystem Mgmt and Planning	Principles of ecosystem management, with emphasis on economic and policy constraints on the planning process. Risk assessment and management. Includes the process of complying with NEPA while developing rangeland management plans.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum senior standing OR Visiting University Student
ABS	481	Riparian & Wetland Restoration	Principles and problems in the restoration of degraded riparian and wetland ecosystems. Construction of wetlands.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370
ABS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	485	GIS in Natural Resources	Principles of Geographic Information Systems (GIS) utilized in natural resource management. Use of computers for spatial inventory and analysis of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	486	Introduction to Remote Sensing	Remote sensing is an important source of environmental information that can support a deeper understanding of trends and clarify management strategies in a wide range of ecological application. Focuses on the application of satellite and aerial/drone remote sensing in environmental science and management. With this basic background, course participants use remote sensing data to make spatial decision. Presents the concepts of biodiversity and wildlife management parallel to the remote sensing information. Image processing instruction and exercises begin with an analysis of digital imagery and proceed through the three broad classes of processing techniques: preprocessing, enhancement and information extraction.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 486 or ABS 598 (Integration of Remote Sensing) or ABS 598 (Introduction to Remote Sensing)
ABS	489	Undergraduate Research	Undergraduate research under the supervision of an applied biological sciences faculty member.	N	RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): Junior or senior standing OR Visiting University Student
ABS	490	Applied Biol Sciences Seminar	Current literature and significant developments related to applications of the biological sciences. May be repeated for credit.	N	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Senior standing OR Visiting University Student

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ABS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ABS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ABS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
ABS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	541	Adv Rangeland Mgt	Combines the principles of ecology, planning and restoration in the application of rangeland ecosystem management. Studies fundamental topics such as range plant physiology, range plant ecology, rangeland stocking-rates and grazing systems in considering management practices for rangeland ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: Degree-or non-degree seeking graduate; Credit is allowed for only ERM 541 or ABS 598 (Adv Rangeland Ecosystem Management)
ABS	542	Mgt Fire Adapted Ecosys	Fire adapted ecosystems which evolved with high-frequency and low-intensity fires now support a range of regimes from no fire to uncharacteristically large and intense fires, causing a concern about the current and future role of wildland fire as well as forest and rangeland health. Explores management considerations and techniques for reintroducing fire to these ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ABS 598 (Fire Ecology), or ERM 542
ABS	550	Vegetation Dynamics	Dynamics of vegetation linking physiological, population, and community ecology. Collection and analysis of vegetation data.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	555	Wildlife Dynamics	Explores major concepts in population and community ecology with an emphasis on their application to the study and management of wildlife species. Explores the theory and sometimes controversial nature of these concepts in the form of lectures and discussions. Instructor and student workshops and oral presentations of student research.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ABS 555 (or ERM 550) or ABS 598 (Wildlife Dynamics) or ETM 598 (Wildlife Population Ecology)
ABS	560	Ecological Modeling	Mathematical modeling of animal populations, food-web structural and ecological processes in space and time. May use modeling tools on computer clusters.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	570	Advanced Animal Nutrition	Metabolic and physiological interactions of nutrients in wild and domesticated animals consuming natural feeds.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	586	Remote Sensing/Envir Resources	Principles and application of remote sensing technologies in natural resource management using computerized data from aerial photography and satellite imagery.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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ABS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	101	Accountancy LEAP Program	The Leadership, Ethics, Accountability & Professionalism (LEAP) program aims to ensure a successful transition from high school to college and, ultimately, one's career. Based on the hallmarks of the accounting profession, provides the tools, resources, and expectations to succeed at ASU, W.P. Carey School of Business and the School of Accountancy.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1		
ACC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	231	Uses of Accounting Info I	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): CIS 105 or 236 with C or better; min 25 hours OR Technological Entrepreneurship Management major: EDT 180; min 25 hours OR Pre- or corequisite(s): Engineering Management major: CSE 205; min 25 hours OR Visiting University Student
ACC	232	Financial Accounting I	Develops an understanding of the theory, concepts, principles and practices underlying preparation, interpretation, and use of external financial reports. Emphasizes interpreting the economic substance of events and transactions and their association with contemporaneous and prospective events, relationships, and outcomes. Gains understanding of the accounting information model and develops an ability to analyze and record business transactions and analyze basic financial statements. Meant for prospective accounting and finance majors (and students who plan current majors in these areas) and develops skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy or Finance majors; CIS 105, 220 or 236 with C or better OR Visiting University Student
ACC	241	Uses of Accounting Info II	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): ACC 231, 261, or 303 with C or better OR Visiting University Student
ACC	242	Mgr Acct I	Develops an understanding of the theory, concepts, principles, and practices underlying managerial accounting. Emphasizes three functions managers must perform within their organizations: plan operations, control activities, and make decisions. Explains what accounting information is necessary, how to collect it, and how to interpret it. Meant for prospective accounting and finance majors and students who plan current majors in these areas and develop skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy and Finance majors, and others with School of Accountancy approval; ACC 231, 232, 261, or 303 with C or better OR Visiting University Student
ACC	261	Honors Fund of Fin Accounting	Covers basic financial accounting concepts and applications. Develops an understanding of the environment in which financial reporting choices are made.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey School of Business Honors student; CIS 105 or CIS 220 or CIS 236 with C or better
ACC	271	Honors Fund of Mgr Accounting	Covers basic managerial accounting concepts and applications.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business major; Barrett Honors student; ACC 231, 232, or 261 with C or better
ACC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	310	Intermed Acctg for Corp Accts	Intermediate-level financial accounting course with in-depth focus on asset, liability and owner's equity measurement, revenue determination, investments accounting, lease accounting, financial statement preparation, presentation and analysis. Emphasizes the statement of cash flows and interpreting footnote disclosures. Where appropriate, compares International Financial Reporting Standards and U.S. GAAP (Generally Accepted Accounting Principles).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
ACC	320	Mgmt Acc for Corp Accts I	Covers internal reporting systems for planning, control, and decision making. Deals with conceptually and computationally understanding the various accounting, economic and/or business models, frameworks and methods in order to be more knowledgeable and literate in these areas while building overall stronger decision-making skills.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student

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ACC	330	Data Analytics in Actng	Explores accounting concepts through the application of data analytics. Focuses on developing an analytics mindset and learning how to use big data analytical tools to examine and analyze data, and then effectively interpreting results to make business decisions.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prereqs: WPC ACC or FIN BS mj; ACC 241, 242, 271 w/ C or btr; ECN 221 or 231 w/ C or btr; MAT 211, 266, 271 w/ C or btr; Pre- or coreq(s): FIN 300, 302, or 303; Crdt for only ACC 330 or ACC 494(Acc Only or Data Only in Acc) OR Visiting University Student
ACC	340	External Reporting I	Financial accounting theory and practice related to external reporting.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prereq(s): W.P. Carey Accountancy or Finance BS major; ACC 241, 242 or 271 w/ C or better; ECN 221 or 231 w/ C or better; MAT 211, 266 or 271 w/ C or better; Pre- or coreq(s): FIN 300, 302 or 303 w/ C or better if completed OR Visiting University Student
ACC	350	Internal Reporting	Internal reporting systems for planning, control, and decision making.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better OR Visiting University Student
ACC	354	Gov, Risk, Comp Int Con Ethics	Equips students to understand, evaluate and participate in corporate governance. Surveys best practices in corporate governance including internal controls, enterprise risk management (ERM), fraud deterrence, and ethical organizational culture. Emphasizes the Committee of Sponsoring Organizations (COSO) framework. Provides the necessary background and understanding of key internal control and ERM concepts and tools for corporate accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	360	Ethics for Prof Accountants	Addresses ethical obligations and responsibilities of professional accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
ACC	382	Acntng & Financial Analysis	Introduces nonbusiness majors to financial accounting concepts related to operating, financing, investing, and ethical decisions.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prereq(s): Non-Business student; must not have previously earned credit in ACC 230, 231, 232, 240, 241, 242, 261, 271 or BUA 381; min 2.0 GPA; min 56 hours, OR non-degree student with min GPA of 2.00, OR graduate student OR Visiting University Student
ACC	410	Fin Statement Analysis	Focuses on core knowledge and skills essential to financial statement analysis. Topics covered include strategic ratio analysis, cash flow analysis, forecasting, pro-forma financial statements and firm valuation.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better OR Visiting University Student
ACC	420	Mgmt Acc for Corp Accts II	Covers the higher-level managerial accounting topics and uses of accounting data to assist corporate accountants in their plans and decisions regarding complex resource allocation, organizational control, and performance evaluation issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 320 with C or better OR Visiting University Student
ACC	430	Taxes and Business Decisions	Federal income taxation of sole proprietors, partnerships, corporations, fiduciaries, and individuals with an emphasis on tax consequences of business and investment decisions.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 340 with C or better; LES 305 with C or better OR Visiting University Student
ACC	435	Personal Tax Mgmt & Planning	Strategies used by financial planners to help clients achieve greater tax efficiency.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey major; ACC 340 or FIN 380 with C or better
ACC	440	External Reporting II	Continuation of ACC 340 with emphasis on the recognition, research, and resolution of financial reporting issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS student; ACC 340 with C or better OR Visiting University Student
ACC	444	Enterprise Proc Analys & Desgn	Focuses on the flow of data through ERP systems and discusses the difference between several types of data and the flow of data from various transactions through the database.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s) with C or better: Accountancy BS major; ACC 241, 242, or 271; CIS 360; ECN 221 or 231 OR Computer Information Systems major; ACC 241, 242, or 271; CIS 235 or 236; ECN 221 or 231 OR Visiting University Student

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ACC	450	Principles of Auditing	Standards and procedures in auditing. Planning, evidence gathering and accumulation, and reporting. Ethical and legal considerations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 440 with C or better OR Visiting University Student
ACC	454	Tax for Corp Accountants	Integrates tax compliance, tax planning, accounting, economics and finance. Examines current tax rules while developing the ability to think about taxes in a way that is not specific to the current federal system.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): W. P. Carey BS Accountancy major; ACC 340 with C or better; ACC 350 with C or better; ACC 430 with C or better; ACC 440 with C or better; ACC 450 with C or better; minimum 3.50 GPA; minimum 72 hours
ACC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-6		Prerequisite(s): Barrett Honors student
ACC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	School of Accountancy	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ACC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Accountancy BS major OR Visiting University Student
ACC	501	Fundmntls Financial Accounting	Covers contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): degree-seeking graduate student
ACC	502	Financial Accounting	Contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey Finance MS or MBA student
ACC	503	Managerial Accounting	Managerial accounting concepts and procedures for internal reporting applied to the decision making activities of the professional managers.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey MBA student; ACC 502 with C or better
ACC	504	Fundmntl Managerial Accounting	Covers managerial accounting concepts and procedures for internal reporting applied to the decision-making activities of the professional managers. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): ASU degree-seeking graduate student; Pre- or corequisite(s): ACC 501 with C or better if completed
ACC	509	Stats for Acctg Analytics	Addresses theories of probability and uncertainty through the use of statistics including descriptive, predictive and prescriptive analyses as well as regression and other models to support audit decisions and conclusions. This heavily quantitative course starts with a realization that probability and uncertainty can be alleviated (or compounded) with different statistical decision making and so starts with theories of probability and uncertainty to properly understand these concepts. Once these concepts are grounded, this class focuses on data, techniques and technologies that can aid in appropriate decision making with accounting. Emphasizes formulating real-world models--driven by descriptive, predictive and prescriptive statistics--to represent complex real-world accounting decision problems and on using a variety of tools to gain better insight into properly addressing these problems.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	510	Internal Control Audit & Fraud	Addresses internal control frameworks and U.S. Generally Accepted Auditing Standards (GAAS) related to an auditor's consideration of internal controls for purposes of financial statement audits and audits of internal control over financial reporting. Covers various schemes pertaining to misappropriation of assets, corruption and fraudulent financial reporting.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy MACC student; Credit is allowed only for ACC 510 and ACC 591 (Int Contrls Audit, & Fraud Prevention & Detection)
ACC	511	Taxes and Business Strategy	Economic implications of selected management decisions involving application of federal income tax laws. Recognition of tax hazards and tax savings.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	512	Advanced Auditing	Builds on the skills obtained in the beginning auditing (assurance) course and focuses on audit planning, risk assessment, evidence, and reporting procedures and fraud.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Master of Accounting student
ACC	513	Advanced Financial Accounting	Focuses on advanced financial accounting topics along with their application in the financial reporting process.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Specific Business Graduate majors

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ACC	520	Accounting Analytics I	Addresses analytics in accounting, auditing and tax contexts. Focuses on the introduction of methods and techniques to analyze data sets while also making it easier to interpret, present and utilize the results for financial decision making. Presents frameworks and approaches to equip students to recognize and interpret patterns in data and models and recommend actions. Teaches multiple concepts to improve decision making related to accounting data. Also serves as a practical introduction to the extraction, cleaning and transformation of data for accounting applications.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy MACC student; Credit is allowed for ACC 520 or ACC 591 (Accounting Analytics)
ACC	521	Accounting Analytics II	Addresses analytics in accounting, auditing and tax contexts. Focuses on the methods and techniques to analyze data sets while also making it easier to interpret, present and utilize the results for financial decision making. Presents additional frameworks and approaches to equip students to recognize and interpret patterns in data and models and recommend actions. Students learn multiple concepts to improve decision making related to accounting data. Also serves as a continuation of the extraction, cleaning and transformation of data for accounting applications.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	522	Innovations with Audit Tech	Focuses on understanding the role of technology-related innovations on audits and auditing performance. Looks at both capturing data from recent innovations in technologies for audit applications (e.g., IoT) as well as examining the roles of these recent technology innovations for audit performance (e.g., cognitive computing).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	560	Ethics for Prof Accts	Reviews ethics in business, fiduciary responsibility, ethical issues, codes of conduct in the field of accounting. Individualized instruction.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy or Master of Taxation student; Credit is allowed for only ACC 560 or ACC 591 (Ethics for Professional Accountants II)
ACC	571	Taxation/Corps/Shareholders	Tax aspects of the formation, operation, reorganization, and liquidation of corporations and the impact on shareholders.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey Taxation student
ACC	573	Taxation/Pass-Through Entities	Tax aspects of the definition, formation, operation, liquidation, and termination of a partnership. Emphasizes tax planning.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Taxation MTax student
ACC	575	Family Tax Plan/Wealth Trans	Tax treatment of wealth transfers at death and during lifetime, with emphasis on tax planning.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	577	Tax Rsrch Prof Resp Prop Trans	Federal tax issues and consequences, tax authority, property transactions and tax consequences of acquiring, holding and disposing of property.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Taxation major. Credit is allowed for only ACC 577 or ACC 591 (Tax Research, Professional Responsibilities & Property Transactions)
ACC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	585	Perf Measuremt&Adv Mgrl Acctg	Applies quantitative techniques to accounting problems.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Business Graduate student
ACC	586	Shareholder Value Creation	Develops skills necessary to exploit financial reporting information in a business environment and appreciation of reporting issues faced by management.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	587	Multi-Jurisdictional Tax I	Multistate taxation and interplay between multistate tax issues and federal and state constitutional limitations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Taxation major
ACC	588	Professional Accounting Resrch	Applies the technical knowledge of accounting theory and principles developed in other academic courses through the use of "real life" case studies, where such knowledge and professional judgment is applied in resolving advanced accounting problems and issues.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: W. P. Carey Master of Accountancy student
ACC	589	Multijurisdictional Tax II	Addresses the U.S. taxation of U.S. individuals and businesses that do business outside the U.S. as well as the U.S. taxation of foreign persons and tax treaties, allocation of income, foreign tax credits, and transfer pricing. Emphasizes planning related to some of the tax issues that commonly arise in cross-border businesses.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Master of Taxation student
ACC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Pre-requisite: Specific Business Graduate majors
ACC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Pre-requisite: Business Administration (Accountancy) PHD student
ACC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	Z2	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	100	All About Data	Data modeling and design, spreadsheets, relational databases and querying, visualization and XML.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	
ACO	101	Intro to Computer Science	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms, computer system concepts. Social and ethical responsibilities.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	
ACO	102	Object-Oriented Programming	Object-oriented programming using introductory algorithms and data structures. Overview of concepts in computer science.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 101 with C or better; Credit is allowed for only ACO 102 or CSE 205 or CST 200 OR Visiting University Student
ACO	131	Global Cybersecurity	Introduces the basic concepts and tenets of cybersecurity from a global and cultural perspective, instead of a technical perspective. Explores how various nation-states view and employ cybersecurity in order to achieve their national strategic imperatives. Students articulate and understand fundamental cybersecurity concepts and principles rooted in U.S. and other national policy, compare and contrast various nation-state approaches to national security, the monitoring of other nations and foreign citizens, and how these relate to cybersecurity policies and practices. Students identify and describe cultural and political philosophies regarding personal data and personal privacy and their influence on national security policy and objectives.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G	Credit is allowed for only ACO 131 or ACO 194 (Global Cybersecurity)
ACO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	201	Data Structures and Algorithms	Static and dynamic data structures, recursive and iterative sorting and searching, object-oriented design and programming, software design models and implementation/testing strategies, professional responsibilities.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 102 with C or better; MAT 210 or higher with C or better OR Visiting University Student
ACO	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240
ACO	320	Database Systems	Entity-relationship and relational data models. Database design theory. Relational algebra, calculus and SQL query languages. Query optimization. XML fundamentals. Transactions, recovery and concurrency control.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201; MAT 243 or 300; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student

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ACO	321	Database Development & Apps	Stored procedures and triggers. Security and authorization. Call-level interface. Database Web applications. Advanced topics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; Credit is allowed for only ACO 321 or CSE 414 or IFT 458 OR Visiting University Student
ACO	330	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 325; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
ACO	331	Network Forensics Analysis	Fundamental principles of network forensics and traffic analysis, evidence acquisition, network intrusion detection and analysis, anomaly detection and analysis, malicious activity detection, network tunneling, and malware forensics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better; Credit is allowed for only ACO 331 or IFT 482
ACO	350	Systems Programming	Introduces operating systems as resource managers, processes, threads, memory allocation, file systems, protection, system calls, application program interfaces.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 201 with C or better; Credit is allowed for only ACO 350 or CSE 330
ACO	351	Security GRC	Broad requirements for effective cybersecurity governance, the elements required to develop an appropriate governance strategy, and the actions required to implement it.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 235 with C or better
ACO	361	Secure Coding Concepts	Secure software development process including designing secure applications, writing secure code that can withstand attacks, and security testing and auditing. Focuses on the security issues a developer faces, common security vulnerabilities and flaws, and security threats. Explains security principles, strategies, coding techniques and tools that can help make code more resistant to attacks. Students write and analyze code that demonstrates specific security development techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201, ACO 240, or CIS 325 with C or better
ACO	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
ACO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	N	RSC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): ACO 102; minimum 30 hours
ACO	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
ACO	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student
ACO	420	Big Data Systems	Modern technologies to manage, process and analyze big data. Data processing of large data sets with Map/Reduce. NoSQL data stores. NewSQL databases. Data visualization. Applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better
ACO	421	Data Mining and Warehousing	Introduces data mining from a database perspective, including classification, clustering, and association rules. Data warehousing methodologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better
ACO	422	XML and Databases	XML data model, schema specification and validation, querying, storage, indexing, and current research topics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better
ACO	423	Data Science	Computational and machine learning methods to extract insights from data: data collection, data cleaning and transformation, exploratory data analysis, data visualization, and machine learning (supervised and unsupervised) algorithms.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better OR Visiting University Student
ACO	430	Wireless Networks	Wireless transmission fundamentals, wireless LAN, cellular networks and systems, Bluetooth, mobile application development, sensor networks, performance analysis and recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330

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ACO	431	Network Security	Digital threats and attacks, cryptography, confidentiality, authentication protocols, message integrity, security in network applications, intrusion detection, malicious software countermeasures, firewalls.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 OR Visiting University Student
ACO	432	Distributed Systems	Distributed system models, distributed programming technique, clock synchronization, distributed snapshot, distributed mutual exclusion, concurrency control, fault tolerance, security, recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330
ACO	461	Security Operations	How organizations monitor and manage the security of their infrastructures in the real world. Explains architecture principles, the use of monitoring tools and technologies, how to interpret different security data sources, as well as how to identify and respond to various security threats within a complex infrastructure. Requires students to utilize security toolsets within a laboratory setting to demonstrate their understanding of the technologies as well as course concepts.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 OR Visiting University Student
ACO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
ACO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
ACO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
ACO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ACO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ACO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	501	Database Systems & Python	Design and implementation of databases for scientific applications. Defining and querying database systems using the SQL industry standard language. Data exchange using XML. Programming in Python to solve realistic problems using scientific data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	201	Intro to Actuarial Science	Introduces important aspects of actuarial work. Exposes the development of actuarial techniques in the context of life insurance, casualty and property insurance, superannuation and investment. Develops problem-solving skills and gives basic tools for risk management and financial modeling, including the use of Excel spreadsheets for both, calculations and simulations. Shows how studies in related disciplines (such as accounting, demography, economics, statistics, computing and mathematics) are essential to the education of an actuary. Guest speakers from the industry share their knowledge and insight on how to become a successful actuary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CIS 105 with B or better; MAT 270 with B or better OR Visiting University Student
ACT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	301	Risk Mgmt and Insurance	Provides an introduction to the different types of risks faced by individuals, businesses and society along with ways in which they make an assessment of, control and transfer of different types of risks including property risk, liability risk, personal risks and speculative risks such as financial risks. Covers risk management techniques including risk control and risk financing with a focus on insurance policies, and also presents other major topics in personal financial planning, social insurance, insurance operations and regulations, and reinsurance. Also gives attention to contemporary issues and challenges in risk management and insurance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	SB	Prerequisite(s): Actuarial Science major; ACT 201 with B or better; MAT 270 with B or better; STP 420 with B or better OR non-Actuarial Science major; MAT 210, 265, or 270; ECN 211 or 212; ECN 221 or STP 226 or STP 420 OR Visiting University Student
ACT	302	Fndmtl of Enterprise Risk Mgmt	Examines in detail the Enterprise Risk Management (ERM) as a decision support system that helps organizations understand risk and assure the achievement of their goals. Provides understanding of what risk is and what an ERM process looks like for organizations, including some common challenges and pitfalls of institutionalizing an ERM culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 OR Visiting University Student
ACT	320	Property & Casualty Insurance	Examines the fundamental principles and uses of property and casualty insurance. Also includes detailed examination of contracts, rating, underwriting, regulation and financial strength of insurers. In particular, devotes attention to the role of property and casualty insurance in addressing the economic and social problems encountered by businesses. Furthermore, also assists in the preparation to take the State of Arizona's Department of Insurance Property & Casualty exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301
ACT	330	Life and Health Insurance	Develops an understanding of life and health insurance and the place of those products in the risk management plans of individuals and businesses. In particular, devotes attention to the role of life and health insurance in addressing the economic and social problems encountered by individuals and businesses. Furthermore, prepares the students to take the State of Arizona's Department of Insurance Life and Health Insurance exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301

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ACT	370	R and Excel for Actuaries	As an open source descendant of S programming language, R has grown to be a powerful environment for statistical computing and graphics. Today it is not only ubiquitous in statistical community but has gained significant ground among practitioners in other disciplines such as finance, actuarial science, medicine and others. As a free and robust language with myriad of free libraries that augment its versatility, it's used in academia and industry alike. Course covers core elements of R language relating to basic and advanced data manipulation, language structure statistical analysis with R, as well as using R as a programming language. Microsoft Excel spreadsheet software has become an integral part of most business organizations across the world. A working knowledge of Excel is vital for most office-based professionals today, and stronger Excel skills can open the door to promotions and leadership opportunities. Course helps build a strong foundation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with B or better; STP 226, 231, or 420 with B or better; Credit is allowed for only ACT 370 or ACT 394 (R in Excel for Business)
ACT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	410	Mathematics of Finance	Prepares potential actuaries to master national exams. Provides an understanding of the fundamental concepts of financial mathematics and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Gives an introduction to financial instruments including derivatives and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 201 with B or better; MAT 270 with B or better; Credit is allowed for only ACT 410 or ACT 510 or MAT 340 OR Visiting University Student
ACT	415	Probability for Risk Mngmnt	Prepares potential actuaries to master national exams. Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 201 with B or better; MAT 272 with B or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 OR Visiting University Student
ACT	420	Ratemaking and Reserving	Utilizes information on property and casualty ratemaking and reserving techniques, from an actuarial perspective. Ratemaking and loss reserving are the two fundamental functions performed by actuaries, and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 with B or better; STP 427 with B or better; Credit is allowed for only ACT 420 or ACT 520
ACT	430	Math of Financial Derivatives	Prepares potential actuaries to master the national exams. Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; Credit is allowed for only ACT 430 or ACT 530 OR Visiting University Student
ACT	435	Statistics for Risk Modeling	Statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression-based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals, classification, clustering and tree-based methods. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 370 with B or better; STP 427 with B or better; Credit is allowed for only ACT 435 or ACT 535 OR Visiting University Student
ACT	440	Long-Term Actuarial Math I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care, etc.). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; MAT 343 with B or better; Credit is allowed for only ACT 440 or ACT 540 OR Visiting University Student

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ACT	441	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Expose students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 440 with C or better; Corequisite(s): STP 427 with B or better; Credit is allowed for only ACT 441 or ACT 541
ACT	450	Actuarial Models I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 with B or better; Corequisite(s): STP 427 with B or better; Credit is allowed for only ACT 450 or ACT 550 OR Visiting University Student
ACT	451	Actuarial Models II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 450 with C or better; Credit is allowed for only ACT 451 or ACT 551
ACT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	491	Actuarial Exam Prep Seminar	Provides potential actuaries with review and practice for an actuarial examination.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Pre- or corequisite(s): ACT 410 (ACT 310) or 415 with B or better if completed OR Visiting University Student
ACT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
ACT	505	Enterprise Risk Mgmt Models	Actuarial modeling methods used in enterprise risk management. These methods are useful for the quantification of many types of risks faced by businesses and other organizations. Furthermore, these methods look at the correlation between risks that can create unexpectedly large exposures. Students build risk models for an actual enterprise.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	510	Mathematics of Finance	Provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest, including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Introduces financial instruments including derivatives, and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 310 or ACT 510 or MAT 340
ACT	515	Probability for Risk Managemen	Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421
ACT	520	Ratemaking and Reserving	Provides knowledge of property and casualty ratemaking and reserving techniques from an actuarial perspective. Ratemaking and loss reserving are the two fundamental functions performed by actuaries and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 420 or ACT 520
ACT	530	Math of Financial Derivatives	Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 430 or ACT 530

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ACT	535	Statistics for Risk Modeling	Uses statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 435 or ACT 535
ACT	540	Actuarial Mathematics I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 510 with B or better, ACT 515 with B or better; Credit is allowed for only ACT 440 or ACT 540
ACT	541	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Exposes students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 540 with B or better; Credit is allowed for only ACT 441 or ACT 541
ACT	550	Actuarial Models & Modeling I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 450 or ACT 550
ACT	551	Actuarial Models & Modeling II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 550 with B or better; Credit is allowed for only ACT 451 or ACT 551
ACT	560	Insurance Data Analytics I	Provides knowledge of advanced applications of predictive modeling methods for solving actuarial problems. Methods that use the general and generalized linear models are becoming more important in the insurance industry for both traditional actuarial pricing and reserving problems and for marketing and operational problems. Prepares students to understand these problems and to gain some experience in analyzing them through projects involving real data. Topics include: linear models, regression with categorical dependent variables, regression with count dependent variables, generalized linear models, frequency and severity models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	561	Data Analytics in Insurance II	Expose students to a wide variety of advanced analytics techniques applicable to data types that are routinely found within the insurance industry. Application of data science is rapidly growing in insurance industry and this course creates a long-term knowledge base for students to remain empowered and in time, master and use more sophisticated emerging techniques. Topics covered include generalized additive models, discriminant analysis, classification and regression trees, bagging, random forests, boosting, mixture model-based approaches, spatial models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 560 with B or better

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ACT	565	Regulation & Fin Reporting	Provides an overview of insurance regulation with regard to property and casualty coverages, ratemaking, pricing and solvency, and U.S. tort law as it affects the property and casualty business. Further identifies major U.S. insurance programs administered by government agencies and insurance industry organizations such as: automobile plans; crop insurance; flood insurance; government backstops; guaranty funds.; residential markets (auto, workers comp, property); workers compensation (including interaction with Medicare). While addressing financial reporting, solvency and taxation issues, students evaluate the financial health of an insurance entity by completing specific schedules and exhibits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	570	Stochastic Calc for Finance	Uses stochastic calculus as a foundation for advanced mathematics of financial derivatives. Topics covered include: stochastic calculus, martingales and arbitrage, Black-Scholes equation and pricing derivative securities, and fundamental theorems of asset pricing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	571	Adv Math Financial Derivatives	Applies stochastic calculus to advanced topics in mathematics of financial derivatives. Topics include: term structure models, pricing derivative securities, fundamental theorems of asset pricing, models of equity and fixed income markets, and exotic options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 570 with B or better
ACT	575	Portfolio Theory and Risk Mgmt	Provides an overview of measurement and management of risk and enables students to master the methods and concepts of portfolio theory. Those models and concepts include risk aversion, utility functions as a representation of preferences, efficient frontiers, Markowitz Portfolio theory, the Capital Asset Pricing model, security market line, value at risk and expected shortfall, as well as concepts of coherent risk measures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	585	Advanced Mortality Modeling	Expose students to a wide variety of advanced models for forecasting human mortality. Explains the relevant repositories of mortality data in the context of application of most-used advanced mortality forecasting models. Presents both discrete time as well as continuous time stochastic mortality models. Students also learn about approaches for managing longevity risk via natural hedging, reinsurance and mortality-linked derivatives as well as pricing of basic insurance products in the context of advanced mortality models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ADE	321	Architectural Studio I	Introductory building design problems. Emphasizes design process, communication methods, aesthetics, construction, and technology.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architecture BSD major; ALA 226 with C or better OR Visiting University Student
ADE	322	Architectural Studio II	Site and building design problems. Emphasizes programmatic and environmental determinants and building in natural and urban contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Architectural Studies student; ADE 321 with C or better
ADE	421	Architectural Studio III	Topical design problems of intermediate complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 322 with C or better OR Visiting University Student
ADE	422	Architectural Studio IV	Topical design problems of advanced complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architectural Studies BSD major; ADE 421 with C or better

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ADE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ADE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ADE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ADE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ADE	510	Foundtion Architectural Studio	Fundamentals of architectural design, methodology, visualization, and representation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	511	Core Architectural Studio I	Applies design fundamentals in architectural problems, including construction, technology, programmatic and environmental determinants.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 510 with C or better
ADE	512	Core Architectural Studio II	Applies architectural design fundamentals to increasingly complex problems, including specific sites and activities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 511 with C or better
ADE	521	Adv Architectural Studio I	Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	522	Adv Architectural Studio II	Design problems emphasizing the comprehensive integration of building systems and technologies as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 521 with a C or better; Co-requisites: APH 505 and ATE 556
ADE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ADE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ADE	621	Adv Architectural Studio III	Design problems emphasizing the urban context, planning issues, and urban design theory as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 522 with a C or better; Co-requisite: APH 515 OR Bldg Des(Energy Perform/Bldgs) MS student
ADE	622	Adv Architectural Studio IV	Individual, student-initiated project reflecting a culminating synthesis of architectural ideas.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 621 with C or better; Master of Architecture student; Corequisite(s): APH 515 or Built Environment (Energy Perf/Climate Responsive Arch) MS student
AEE	313	Aircraft Dynamics and Control	Aircraft static stability; equations of motion; dynamic modes and stability; stability derivatives; response to controls; introduces automatic control of aircraft.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fullton Engineering major; AEE 360 with C or better; MAE 318 with C or better
AEE	325	Aerospace Structures/Materials	Applies structural analysis to aircraft and spacecraft structures. Loads on aerospace structures, buckling and stability, stiffened panels, primary wing and launch-vehicle structure, vibration of large structures, properties and selection of aerospace structural materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Aerospace Engineering major; MAE 202 with C or better; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit is allowed for only AEE 325 or MEE 322 OR Visiting University Student
AEE	344	Fundamentals Aircraft Design	Aircraft performance, RFP's, Federal Aviation Regulations, aircraft sizing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fullton Engineering major; AEE 360 with C or better; MAE 202 with C or better; MAE 214 with C or better; MAE 384 with C or better; Pre- or corequisite(s): AEE 325 with C or better if completed
AEE	360	Aerodynamics	Airfoils and wings, ideal flow, boundary layers, finite-difference solutions, wind-tunnel testing. AEE 360, AEE 361, and AEE 362 must all be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prereq(s) w/C or better:Aero Engr or Mech Engr BSE major; ENG 102, 105 or 108; MAE 242; MAE 384; MAT 267 or 272; Pre- or coreq(s):MAE 301 w/C or better if completed; Credit allowed for only AEE 360 or AEE 394 (Aerodynmc s I) OR Visiting University Student

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AEE	361	Aerodynamics Laboratory	Flow measurement. Wind-tunnel testing. Engineering laboratory reports. AEE 360, AEE 361, and AEE 362 must all be taken to secure L General Studies credit.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1	L	Prerequisite(s) with C or better: ENG 102, 105, or 108; MAE 242; MAE 384; Pre- or corequisite(s) with C or better if completed: AEE 360; MAE 301; Credit is allowed for only AEE 361 or AEE 394 (Aerodynamics I Lab) OR Visiting University Student
AEE	362	High-Speed Aerodynamics	Compressible flow at subsonic and supersonic speeds; ducts, nozzles, and diffusers; normal and oblique shocks, transonic flow, numerical solutions; experimental applications. AEE 360, AEE 361, and AEE 362 must all be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4	L	Prerequisite(s): Aerospace Engineering BSE major; AEE 360 with C or better; ENG 101, 105 or 107 with C or better; MAE 241 with C or better; MAE 301 with C or better OR Visiting University Student
AEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
AEE	415	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MAE 318 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 415 or MAE 514 OR Visiting University Student
AEE	426	Design of Aerospace Structures	Flight vehicle loads, design of semimonocoque structures, local buckling and crippling, fatigue, aerospace materials, composites, joints, and finite element applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering BSE major; AEE 325 with C or better; Credit is allowed for only AEE 426 or MAE 526
AEE	445	Fund of Spacecraft Design	Spacecraft subsystems. Systems engineering, space mission design, space environment. Cost analysis. Risk and reliability analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s): Aerospace Engr (Astronautics) BSE mjr; AEE 325 w/ C or btr; AEE 462 w/C or btr; MAE 214 w/ C or btr; MAE 318 w/ C or btr; Pre- or coreq(s): AEE 465 w/ C or btr if completed; EEE 350 w/ C or btr if completed OR Visiting University Student
AEE	462	Space Vehicle Dynamics/Control	Attitude dynamics and control, orbital mechanics, orbital transfer/rendezvous, spacecraft control systems design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 301 with C or better; MAE 318 with C or better
AEE	463	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; AEE 362 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) OR Visiting University Student
AEE	465	Rocket Propulsion	Rocket flight performance; nozzle design; combustion of liquid and solid propellants; component design; advanced propulsion systems; interplanetary missions; testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering major; AEE 362 with C or better; AEE 462 with C or better OR Visiting University Student
AEE	466	Rotary Wing Aerodynamics/Perfm	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; Credit is allowed for only AEE 466 or MAE 566
AEE	468	Aircraft Systems Design	Group projects related to aircraft vehicle design, working from mission definition and continuing through preliminary design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Aeronautics) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 344 with C or better; Pre- or corequisite(s): AEE 463 with C or better if completed OR Visiting University Student
AEE	471	Computational Fluid Dynamics	Numerical solutions for selected problems in fluid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 or MEE 340 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 471 or MAE 561

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AEE	478	Fund Autonomous Aircraft Sys	First of a two-semester capstone sequence. Introduces autonomous aircraft performance and operations, aircraft performance prediction, ground control and support, sensors, communications and telemetry, aerospace ethics and law, design methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Autonomous Vehicle Systems) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 360 with C or better; MAE 214 with C or better OR Visiting University Student
AEE	479	Design of Autonomous A/C Sys	Second of a two-semester capstone sequence. Autonomous aircraft design project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 400 with C or better; AEE 478 with C or better
AEE	480	Space Systems Design	Group projects related to space systems design, working from mission definition and continuing through conceptual design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Astronautics) BSE major; AEE 445 with C or better; AEE 465 (or MAE 465) with C or better; EEE 350 with C or better; MAE 214 with C or better
AEP	501	Practical, Professional Ethics	Acquaints students with practical and professional ethics. Assumes no prior experience in ethics, and provides practicable knowledge as well as theoretical knowledge. The first in a series of courses for the MA program in Applied Ethics and the Professions, the course is primarily intended to prepare students in that degree program for their subsequent courses. However, it has been designed to be useful to all graduate students who are interested in learning about practical and professional ethics. The beginning of the course is devoted to the more general subjects of practical ("everyday") ethics and professional ethics, while the remaining weeks are spent focusing on the ethical issues that occur in the context of specific professions, with particular emphasis given to those professions that seem most relevant to the aspirations and interests of the students enrolled in the course.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): graduate student or Barrett Honors student
AEP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AES	101	Air Force Today I	Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	102	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes common Air Force customs and courtesies, drill and ceremonies, health and physical fitness through group participation.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 101 OR Visiting University Student

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AES	103	Air Force Today II	Introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: introduction to leadership, Air Force core values, introduction to interpersonal communication and team building, and a continuation of communication skills.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	104	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes learning the environments and dynamics of an Air Force officer.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 103
AES	201	Evol/USAF Air/Space Power I	Focuses on facilitating the transition from Air Force ROTC cadet to Air Force ROTC candidate. Examines the general aspects of air and space power through a historical perspective. Utilizing this perspective, covers a time period from the first balloons and dirigibles to the modern technology currently used in overseas contingency operations. Featured topics include: Air Force heritage, Air Force leaders, introduction to ethics and values, group leadership problems and continuing application of communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	202	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Provides application of advanced drill and ceremonies; issuing commands; knowing flag etiquette; and developing, directing, and evaluating skills to lead others.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 201 OR Visiting University Student
AES	203	Evol/USAF Air/Space Power II	Provides knowledge-level understanding for general element and employment of air and space power. Furthermore, discusses the importance of Air Force Core Values with use of operational examples and historical Air Force leaders. Continues to develop communication skills. Topics include: the Air Force mission and organization, modern joint expeditionary Airmen, officer opportunities, and professionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	204	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes preparation for field training.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 203
AES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	1-4		
AES	301	Air Force Leadership Studies I	Study of communication skills, leadership and quality management fundamentals, leadership ethics, and professional knowledge required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	302	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experiences applying leadership and management principles to motivate and enhance the performance of other cadets.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 301 OR Visiting University Student
AES	303	Air Force Leadership Stds II	Continuation of AES 301. Topics include: communication skills, ethics, leadership, professional knowledge, and quality management required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	304	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes planning the military activities of the cadet corps and applying advanced leadership methods.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 303
AES	401	National Security Affairs	Examines advanced ethics, Air Force doctrine, national security process, and regional studies. Special topics include: civilian control of the military, military justice, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	402	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experience demonstrating learned skills in planning and controlling the military activities of the corps.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 401 OR Visiting University Student

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AES	403	Preparation for Active Duty II	Continuation of AES 401. Topics include: civilian control of the military, doctrine, ethics, military justice, the national security process, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3		
AES	404	Leadership Lab	Continuation of AES 402 with emphasis on preparation for transition from civilian to military life.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		
AET	210	Measurements and Testing	Measurement systems, components, system response, and the characteristics of experimental data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 112; Pre/Corequisite(s): MAT 266
AET	215	Aircraft Systems	Principles and design features of aircraft structures, systems, and materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
AET	300	Aircraft Design I	Applied aerodynamics, standard atmosphere, speed measurement, infinite and finite wings, airplane performance.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: AET 215; MET 211, ECE 210, or MAE 212
AET	415	Gas Dynamics and Propulsion	Introduces compressible flow, internal and external flow, and aerothermodynamic analysis of propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): AET 300; MET 340 or MAE 340 or Fulton Schools of Engineering graduate student
AET	417	Aerospace Structures	Analysis and design of aircraft and aerospace structures. Shear flow. Semimonocoque structures. Effects of dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 213, MET 313 (or ECE 313); MET 212, AET 312 (or ECE 312); AET 300
AET	420	Experimental Aero/Wind Tunnel	Experimental applied aerodynamics related to aeronautical and mechanical design. Wind tunnel design and testing. Low speed flows.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: AET 300; MET 340
AET	524	Application of Heat Transfer	Energy conservation, steady-state and transient conduction, convection transfer, free and forced convection Reynolds analogy, blackbody and environmental radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 432 or MAE 340; Credit is allowed for only AET 524 or AET 432
AET	560	Numerical Methods/Engr Tech	Analyzes problems in physical sciences, models physical problems, perturbation techniques, curvefitting, data analysis, numerical solutions, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering students; Senior or higher academic level
AFR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	200	Intro to Africana Studies	Introduces the study of African and African-descended peoples; theory, themes, and perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	
AFR	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
AFR	210	Intro African American Studies	Examines the political, historical, and cultural origins of African American studies as an academic discipline.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	
AFR	212	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
AFR	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
AFR	225	Black Movements in America	Survey course on the historical and political development of mass movements by African Americans and Black resistance in the United States. Traces nearly 400 years of Black resistance against injustices and mass struggles for equality and liberation. Topics include the anti-slavery movement, anti-lynching campaign, the Civil Rights movement, the Black Power movement, prison abolitionism, the reproductive justice movement, and movements for economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only AFR 225 or JUS 200 (Black Movements in America)
AFR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	300	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
AFR	301	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
AFR	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302

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AFR	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304
AFR	305	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
AFR	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
AFR	318	African/Diaspora Wmn Writers	Intersection of race, class, gender, and ethnicity in black women's fiction from the United States, the Caribbean, and Africa.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 or WST 100 or WST 300 or minimum 45 hour
AFR	320	Africa: Politics, Enviro & Dev	An in-depth analysis of the African experience as a way to understand the consequences of human environment relationships, wealth and power differentials, and individual and global citizenship.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	325	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
AFR	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student
AFR	335	Hstrcl Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s):ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
AFR	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
AFR	340	The Making of Modern Africa	Advanced study of the events and processes leading up to the colonization of Africa and the subsequent changes in African societies under colonial rule and independence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours OR Visiting University Student
AFR	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345
AFR	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student

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AFR	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
AFR	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
AFR	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AFR	355	Democracy/Civil Society/Africa	Advanced examination of contending perspectives on the state and civil society of Africa. Course will specifically analyze the democratic struggles in sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student
AFR	360	Black Families in the Diaspora	Within a historical, cultural, social-economic, and international context, the institution of Black families begins with their lives in Africa, South America, and the Caribbean and follows the cultural continuities and adaptations impacting the structure and functioning of contemporary African America families. Theoretical models provide focus to studying voluntary and involuntary migration, family labor force involvement, gender roles, marital relations, parenting, kinship and community networks. Throughout the course attention is given to the role of social policies in shaping the well-being of Black families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 or FAS 101; Credit is allowed for only AFR 360 or FAS 360
AFR	363	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
AFR	364	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C & H	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
AFR	365	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 365 (or AFH 364) or WST 364
AFR	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
AFR	368	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Eroticism)

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AFR	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student
AFR	372	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
AFR	373	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
AFR	375	Race, Gender and Sport	Advanced and interdisciplinary examination of the social concepts of race and gender and their economic impact on sports in America. In-depth studies will focus on the role of regulatory agencies, the impact of these regulatory agencies have on sport as well as multiple legal issues surrounding athletics	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 or minimum 45 hours OR Visiting University Student
AFR	383	Blacks in Sci, Med & Publ Hlth	In-depth study of Blacks who have made significant contributions to science and medicine in the U.S. Begins with a critical examination of ancient African scientific contributions. Highlights specific individuals, analyzing their life's path to their respective careers. Also discusses the role of racism and discrimination and their efforts to overcome these.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 383 (or AFS 383) or AFS 394 (Blacks in Science, Medicine, and Public Health)
AFR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	418	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
AFR	420	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
AFR	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
AFR	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & G	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AFR 459 or ENG 459 OR Visiting University Student
AFR	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student
AFR	465	Harlem Renaiss:Cultural Hist	Socio-political, historical contexts and worldwide ramifications of the cultural productions (theater, music, visual arts, and literature) of the Harlem Renaissance.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		
AFR	466	Peoples and Cultures of Africa	An in-depth study of the diversity of African people and culture from an interdisciplinary perspective. Emphasizes social, political, and economic relations, as well as inequality, art, gender roles, slavery, and slave trade.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student

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AFR	470	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471
AFR	480	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shar'ia, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
AFR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AFR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
AFR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AFR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; 9 upper-division hours OR AFR 200; ENG 101, 105, or 107 with C or better; minimum junior standing
AFR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
AFR	500	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	502	Africa/African Diaspora World	Combines lecture, critical discussion of readings, guest speakers, student presentations and individual research projects. Drawing on various sources (written, oral, archaeology), explores themes linking peoples of Africa and African heritage in Africa, the United States, the West Indies and Latin America, and Europe, the processes of cultural transformations in Africa and the evolution of African cultures and survival in the New World. Explores topics including transatlantic slave trade, comparative slavery, African-American and Latin America emigration to Africa, African immigration to the New World and the Pan-African movement. Emphasizes links between blacks in Africa, the West Indies and the United States, the cultural and political influences they had on each other and the legacy that remains in these areas today.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AFR 500 (Africa and the Diaspora World) or AFR 502
AFR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	600	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	100	Introduction to Agribusiness	Overview of agribusiness industries and career opportunities.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
AGB	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
AGB	250	Resource Allocation	Beginning class that focuses on the specific microeconomic principles that are needed to understand the food industry, agricultural production, food safety and production of renewable natural resources. Focuses extensively on the detailed information that students need to understand the nuances of specific issues associated with the food, agriculture and renewable natural resources, including a keen understanding of monopolistic competition, the economic rationale for governmental regulation, effects of property rights on renewable resources, agricultural price supports, prospect theory and behavioral economics.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 250 or AGB 294 (Economics of Resource Allocation) OR Visiting University Student
AGB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	302	International Mgt and Agribus	Management and agribusiness issues in the transition of developing countries from subsistence to global operations and competition.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	G	Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	321	Agribusiness Marketing	Focuses on food and consumer products marketing at an intermediate level. Covers strategic concepts such as situational analysis, planning and objectives, and target marketing and positioning. Illustrates both the theory and application of strategic decision making through case analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	333	Agribusiness Finance	Examines the markets, institutions and current issues important to financing firms in the food and agribusiness sector. Topics include cost of capital, specialized lending institutions (farm credit system), credit decisions, vendor financing, private equity, institutional ownership, cooperatives and risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	340	Food Processing	Introduces processed food quality assurance, statistical sampling, and inspection procedures.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	360	Agribusiness Statistics	Statistical methods with applications in agribusiness and resource management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	CS	
AGB	366	Agribusiness Production Tech	Examines methods for managing diverse crop and livestock enterprises with an emphasis on growth, development, marketing, and loss prevention.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	367	Agribusiness Processing Tech	Biotechnology and other methods used in the production, processing, and distribution of food.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	410	Agribusiness Management	Business operations and human resource management principles applied to real-world problems faced by firms across the food and agribusiness value chain, with emphasis given to the formulation, implementation and evaluation of competitive strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	414	Food and Agribus Policy Issues	Analysis of agribusiness firm decisions in the ecological, economic, social, and political environments. Special emphasis on ethical issues surrounding food production and consumption.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 56 hours OR Visiting University Student
AGB	420	Food Advertising and Promotion	Focuses on advertising and promotional strategies in the food industry, with emphasis on consumer packaged goods.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	425	Food Supply Networks	Information, methods and resources used in the management of global food supply networks. Emphasizes systems of food marketing and distribution from the farm to the consumer.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student

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AGB	429	Mkt Comm in Food & Agrib Ind	Focuses on written and oral communication in the food and agribusiness industries. Through real-world projects and collegiate marketing competitions, students address current issues in the food and agribusiness industries. Students learn how to effectively communicate strategic visions. Also entails research in the food and agribusiness industries to support strategic plans.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300, 302, 303, or 390 or minimum 56 hours
AGB	431	Agribusiness Financial Mgt	Comprehensive treatment of topics in financial management of agribusiness: capital structure, dividend policy, asset valuation, mergers and acquisitions, risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321, FIN 300 or TMC 320
AGB	433	Agribusiness Financial Markets	Role and function of agribusiness in U.S. financial system. Topics include rural banking, farm credit system, monetary policy, and federal reserve.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 333 or FIN 300
AGB	435	Commodity Future and Opt Mkts	Provides an understanding of how to use futures and options markets in a risk management and pricing context, especially as it pertains to the marketing and procurement of agricultural commodities by grain and livestock merchandisers, food manufacturers, and producers/distributors/consumers of natural resources.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	440	Food Safety	Control, prevention, and prediction of microbial and chemical food-borne diseases.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	445	Food Retailing	Critical examination of trends, problems and management functions of food retail managers across various retail institutions. Emphasizes the biological nature of food products and the dietary preferences of consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300 or MKT 302 or MKT 303 or MKT 390 OR Visiting University Student
AGB	452	Global Food&Agricultural Trade	Applies international trade theory to analyze the effects of government policies and trade agreements on the global food and agribusiness sector.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 45 hours
AGB	456	Food Prod Innovation and Dev	The food product development process and how it interfaces with food technology and packaging concepts. Emphasizes the team approach, which is prevalent in the food industry.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	481	Strategic Pricing in Food Mkts	By applying the basic concepts of microeconomics to real-world data, this course allows the student to not only gain a book-oriented understanding of how businesses in the food industry behave, but practical, hands-on experience that lasts far beyond the classroom.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6		Prerequisite(s): Barrett Honors student
AGB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AGB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-7		
AGB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	511	Advanced Agribusiness Mgmt	Analysis of organization behavior, change, and resource requirements within agribusiness systems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	514	Advanced Agribusiness Analysis	Vertical integration and differentiation in food and agricultural industries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	528	Adv Agribusiness Marketing	Theory and analysis of marketing strategy related to food and fiber products. Covers concepts of strategic market planning (e.g., segmenting, targeting and positioning), with application of these concepts at an advanced level. Also examines the broad social, cultural, political and economic issues that impact marketing.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	529	Adv Agribus Marketing Channels	Analyzes agribusiness market channel systems. Formulation of marketing strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	532	Advanced Agribusiness Finance	Financial management of agribusiness firms; agribusiness financial analysis, investment analysis, agricultural risk management, and introduction to agricultural financial intermediaries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	535	Commodity Analysis	Analysis of commodity markets.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	552	Intl Agricultural Policy	Uses international trade theory to analyze the effects of government policies, trade agreements, and exchange rates on agribusiness.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	554	Advanced International Trade	Advanced international practices in trading of agribusiness, technology, and resource products and services.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	560	Adv Agribusiness Mgmt Systems	Development and use of decision support systems for agribusiness management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	561	Applied Econometrics	Uses model building, hypothesis testing, and empirical analysis in solving agribusiness problems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	570	Managerial Econ for Agribus	Concepts in micro- and macroeconomics applied to agribusiness management environments: price formation, market structure, information economics, fiscal and monetary policy.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	589	Agribusiness Capstone	Strategic management of organizations focusing on developing value-creating strategies in dynamic environments.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Morrison School of Agribusiness	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	701	Adv AGB I: Adv AGB Analysis	Advanced topics include benefit-cost analysis, input-output analysis, consumer demand, agricultural policy, international trade, welfare economics and applied mathematical economics.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	702	Adv AGB II: Applied Econometr	Econometric analysis techniques applied to multinomial and count models, welfare economics, demand models and maximum likelihood estimation using STATA.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	703	ADV AGB III: ADV Empirical Mo	Microeconomics applied to empirical models involving agribusiness including consumer and producer theory, empirical industrial organization, strategic choice and price behavior.	N	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	101	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
AIS	102	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
AIS	180	Intro/American Indian Studies	Introduces the study of American Indian justice issues from an interdisciplinary perspective. Primary topics include sovereignty, law, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	
AIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	201	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
AIS	202	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
AIS	280	Amer Indian Sovereignty/Courts	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	285	Federal Indian Policy	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	320	AI Philosophies & World Views	Does it make sense to speak about American Indian intellectuals, thinkers or philosophers? Not only have Indians been thinking and thinking deeply for generations, but they have also produced a body of written works that have formed the foundation of contemporary American Indian studies. Covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Junior standing; Credit is allowed for only AIS 320 or AIS 394 (American Indian Philosophical/World Views) OR Visiting University Student
AIS	360	Issues in Urban Indian Country	In-depth examination of the historical, social, economic, and political implications of indigenous migrations to urban areas. Over 50% of Native people are living in cities. What are they doing? Why are they there? Are they still under the federal trust relationship? Evaluates the social, political, and economic structures built by American Indians living in the urban environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 360 or 394 (Issues in Urban Indian Country)

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AIS	370	Amer Indian Languages/Cultures	Emphasizes understanding of Indian language families and the relationship of oral traditions to culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): AIS 180 with C or better
AIS	375	Innovation for AI Sustainabili	American Indian tribes are poised at an historic opportunity to accelerate innovation within their communities. Many tribal leaders have stated that to create true sustainability, tribes need to practice innovation and sustainable development in a manner that is a cultural match to their traditions and values. Examines topics directly associated with creating tribal economies with innovation, entrepreneurial and sustainability in an American Indian context as key factors. Consists of class lectures, guest speakers, student discussion, individual and group teamwork, and presentations. Participants form into teams to identify, develop and define an innovative product or service idea that addresses a significant need in Indian Country that can be addressed through innovation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 375 or AIS 394 (Innovation for American Indian Sustainability)
AIS	380	Contemp Issues/American Indian	Surveys legal, socioeconomic, political, and educational state of contemporary reservation and urban Indians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	
AIS	381	American Indian Women	Draws from a diverse range of Indigenous critical traditions to examine discourses of gender, identity, and sexuality as sites of cultural revitalization and conflict and theorizes the meaning of each of these categories from diverse Indigenous communities. Considers contemporary and traditional works by Indigenous women with a special emphasis on the historical, socio-cultural, and legal contexts of each work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): WST 100, 300, or AIS 180 with C or better OR Corequisite(s) if completed 30 hours or more: AIS 180, or WST 100 or 300; Credit is allowed for only AIS 381 or WST 382
AIS	385	Entrepre for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
AIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	420	Amer Indian Studies Research	Surveys diverse research methods, including statistical, historical, interpretative, and narrative approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	L	Prerequisite(s): AIS 180 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
AIS	430	Contemp Indigenous Spirituality	Why do so many indigenous people across North America want to revitalize their traditional ways when there is supposedly so much opportunity awaiting them in all segments of American society? What are the benefits of such an endeavor and what might be the consequences if this objective is not pursued? This course is premised on the hypothesis that indigenous customs and beliefs contain knowledge that is not only vital to the well-being of the communities in which this native wisdom is found, but also to those communities seeking a more sustainable way of living in the land they call home. After delving into a critique of the religious principles that went into the settling of America, complete with notions of manifest destiny, a way is opened for a more native-oriented discourse on community, nature, economy, and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 430 or 494 (Ind Spirituality in Postmodern)
AIS	440	Cultural Professionalism	Emphasizes professional and leadership skills to prepare students for academic and career endeavors after undergraduate degree completion. Explores indigenous perspectives on communication, research, professional and leadership skills. Research focuses on addressing the needs of Arizona Indian Nations and Tribes and culminates in a research paper, in-class presentation and community development poster presentation. Showcases research posters in a research symposium in which guests vote on the most innovative and practical poster proposal.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only AIS 440 or AIS 494 (Cultural Professionalism)

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AIS	445	AI Leadership and Resistance	Examines the modern challenges that leaders face in American Indian communities with a foundation in indigenous concepts of leadership, sovereignty and nationhood. Topics include pre-contact leadership principles and systems of governance, tribal sovereignty, nation-building, politics, governing systems, leadership styles, military leadership, internal disputes and conflict resolution, activism, mobilization, community leadership, political/elected leadership, and other leadership-related topics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	SB & H & C	Prerequisite(s): minimum junior standing or 3 hours of an AIS course; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521
AIS	455	Cultural Resource Law	Examines how U.S. laws, policies, executive orders, and court decisions have affected Indian nations and peoples in matters of cultural resources and burial rights. Considers the protests, legal battles, and political campaigns Indians have waged to reaffirm their fundamental human rights in the areas of repatriation and sacred sites protection. Examines the ways in which filmmakers and the media present these issues to the public. Assesses the present status of Indian religious rights and cultural resource laws. Sovereignty and its relationship to Indian spirituality is a theme that permeates the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 455 or 494 (American Indian Cultural Resources)
AIS	470	Tribal Governance	Critical and historical examination of Indigenous governance and leadership. Includes a survey of historical policy developments and political change that laid the foundation for contemporary Indian government and an assessment of the effectiveness of modern tribal administrations and decision-making bodies. Explores the diverse approaches to tribal governance, community-based political strategy and local interpretations and assertions of sovereignty and self-governance. Project work facilitates focused student learning on the challenges and opportunities in government for a specific Indian nation. Case work and consultation with practitioners in Indian government complement textbook reading in law, history and policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Pre-requisite: AIS 285; Credit is allowed for only AIS 470 or AIS 494, Tribal Governance
AIS	480	Actualizing Decolonization	Provides an in-depth investigation of the theory and concepts of colonization, decolonization, and Indigenous peoples in America, with brief comparisons with global Indigenous peoples and experiences. Covers classic scholarly works on colonization and decolonization to understand the frameworks in which colonization and decolonization develops, expands, and impacts Indigenous peoples. Through that theoretical understanding, examines and formulates ways in which decolonization can impact and be integrated into Indigenous lives and communities. Students shift from theory to praxis by writing and presenting on an informal grant proposal for a decolonizing project that can be implemented in an Indigenous or non-Indigenous community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C & G	Prerequisite(s): ENG 101; ENG 102; junior standing; Credit is allowed for only AIS 480 or AIS 494 (Readings-Decolonization) OR Visiting University Student
AIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6		Prerequisite(s): Barrett Honors student
AIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-3		

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AIS	501	AIS Paradigms	American Indian Studies emerged as an academic discipline in the late 1960s in part because of increasing dissatisfaction among Indians about the works of historians, anthropologists, and other scholars that was very often marred by methodological and conceptual flaws. Course provides an overview of ways of "doing" Indian studies from an American Indian Studies paradigm(s) through a critical examination of some of the most significant works emanating from this growing body of literature. Critiques paradigms that selected scholars have employed in the researching and writing of their topics. Seminar format allows students to take the lead in discussing each week's readings. Covers a range of scholarship dealing with American Indian issues; explores the development of American Indian Studies as an academic discipline; probes paradigms that Indigenous scholars have developed; and considers how those paradigms differ from those used by other disciplines.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	502	AIS Research Methods	Prepares students for thesis research, writing, and completion. Surveys graduate research methods in the field of American Indian Studies including historical, interpretative, and narrative approaches. Focuses on methodological issues specific but not limited to American Indian and Indigenous Studies. Focuses on Indian-centered methodological approaches to research that are essential to qualitative writing of the various topics in Indian country and other issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	503	Contemporary Issues of AIN	Provides an overview of the current status of American Indian Nations with regard to sovereignty, policy, politics, economy, and society. An exploration of current issues illustrates the unique challenges and innovative solutions put forth by Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	504	Amer Indian Film & Activism	Examines the American Indian film and activism with emphases on American Indian production, directing, editing, investigative journalism, documentary film, entertainment, and research. Exposes students to the development of activism in film and how film has been utilized to educate, inspire, and contribute to the challenges in Indian Country.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	505	Contemporary Visual Arts of AI	Focuses on a critical analysis of art, film, and media as they intersect with shaping the image and sustaining the culture of American Indians in North America. Examines the persistent and inappropriate stereotypes of American Indians as portrayed in film and media, including explanations for the persistence of negative stereotypes drawing on various aspects of critical race theory including power, politics, and race. Also introduces the scope and diversity of American Indian art and artists and highlights how native artists portray their views and culture through contemporary image making and representations. Stresses the interplay of art with sovereignty, identity, and politics. Emphasizes the powerful and significant connection between contemporary American Indian art and the persistence of indigenous cultures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	506	Indigenous American Literature	Teaches Indigenous (Indian, Native American, First Nations) literature's role in Indigenous history, cultural history, philosophy, society, culture, and developing cultural traditions. Students learn how tribal communities articulate themselves intellectually and artistically through literature and its development locally, nationally, and internationally.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	508	Revitalize Indigenous Language	Critically examines Indigenous languages, their decline and revitalization from a language ecology and a self-determination perspective. Includes historical, sociopolitical, educational, linguistic, sociolinguistic, and cultural issues that have had and continue to impact Indigenous peoples and their languages worldwide and their reclamation efforts. Also examines various epistemologies, theories, ideologies, and practices of Indigenous people (including American Indian, Indigenous Alaskan, Hawaiian, Maori, Quechua). Topics include: language policy and planning, language acquisition, child language socialization, identity development, bilingual education, Indigenous language pedagogy, and current models and approaches for Indigenous language maintenance and revitalization (ILMR).	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	509	Amer Indian& Indigenous Rights	Examines the rights of American Indian peoples with an emphasis on asserting indigenous rights in national as well as international forums. Challenges students to address issues related, but limited to: treaty rights, land rights, water rights, self-determination, rights to a distinct culture, religion, language, spiritual practices, customs, ceremonies, nationhood, autonomy, to seek redress and justice, rights to education, rights to protect from destruction and violence, rights to economic development, rights to protect lands from military, ecological, cultural, and environmental threats, and other rights that may effect the lives of American Indian people.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only AIS 509 or AIS 494 (American Indian and Indigenous Rights)
AIS	510	Social Change in Amer Ind Comm	Committed to the preservation of political autonomy and cultural identity, American Indian communities are increasingly gaining rule over the effects of social change impinged upon them. Recapturing their histories and redefining colonial relationships, they are forging a preferred future grounded in their own traditional institutions of community, religions, and strengthening of self-determination. Provides students with: (1) an understanding of the enduring struggle of American Indian communities to resist the movement of collective assimilation and retain the right of self-determination; (2) an examination over time of social changes in American Indian communities' social structures and their political and social movements towards the establishment of environmental, economic, and social justice; and (3) knowledge of strategies and tactic for achieving social change within American Indian communities that support Indian self-determination and self-governance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	511	Gender and Sexualities	Grounds students in the theory and concepts of American Indian genders and sexualities. In American Indian societies, there were more than two genders. With colonization through laws, boarding schools, and loss of culture, language, and land, these different genders were attacked and made to disappear. Examine the concepts of gender and sexuality from Native perspectives and theory, and through western imperial views. Also covers the ways in which decolonization plays a role in understanding indigenous genders and sexualities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	512	Hist Trauma, Heal & Decoloniza	In recent years, scholars have begun to explore the prevalence of historical trauma among American Indian communities. This research argues that the genocide, violence, breakdown of customary cultures through external coercion; and oppression that Indians continue to face at the hands of foreign colonizers has left Indians with harmed with intergenerational self-destructive behavior, domestic violence, suicide, anxiety, depression, low self-esteem, and anger. As a result of this violence and oppression, they have developed models of recovering healthy nations while challenging violations of their human rights in the domestic and international arenas. This history has given rise to a widespread cultural revitalization movement often referred to as decolonization. Scholars from an array of academic disciplines are producing a growing body of literature about decolonization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	513	Urban Indian Issues	According to the 2010 Census, 64.1% of the American Indian/Alaskan Native population resides in a place outside of tribal areas. Cities such as Los Angeles, New York, and Phoenix have historically counted more than 25,000 American Indian residents. What draws Indigenous families to urban areas? How does an urban address impact the federal trust relationship with nonreservation Indians? What are the social, political, and economic implications for a family who lives off the reservation and away from tribal homeland? Course explores these issues and dynamics and challenges the student to examine the unique identity and contributions of urban Indians. Students learn the history of Indigenous migrations to the city and assess current needs and concerns through consultation work coordinated with Phoenix area Indian Centers and nonprofit organizations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	514	American Indian Intellectuals	Does it make sense to speak about American Indian "intellectuals," "thinkers," or "philosophers"? Not only have Indians been thinking and thinking deeply for generations, but they have produced a body of written works that have formed the foundation of contemporary American Indian studies. Course covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	515	Work & Legacy of Vine Deloria	Vine Deloria, Jr, Standing Rock Sioux (1933-2005) has often been referred to as "Uncle Vine" for his role in the intellectual development of innumerable scholars, as well as legal and political figures, all of whom have striven along side Deloria at making the world a better and more just place for indigenous communities. As such, Deloria has also been labeled "the Dean of American Indian Studies" because of his work at shaping the intellectual and political agenda, which began in 1969 with the seminal publication of Custer Died for Your Sins: An Indian Manifesto and continued posthumously with works on the medicine man traditions throughout North America and a reflection on Carl Gustav Jung's analyses of American Indian customs and beliefs. This seminar, the first of its kind, takes a comprehensive look at Deloria's philosophical and legalistic legacy by examining his major works and analyzing, in addition to critiquing, the ideas and opinions that shaped his intellectual career.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	516	Concepts of Power& Indigeneity	Grounds students in the theory and concepts of power and indigeneity with comparisons with global Indigenous peoples and experiences. Through that theoretical understanding, examines and understands ways in which these concepts impact Indigenous communities and formulates ways in which to develop practical ways to address these issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	517	Customary Tribal Law and Gover	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	518	Tribal Jurisdiction	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	519	Burial Rights & Sacred Matters	Probes U.S. laws and policies, court cases, and Indian struggles for dignity, burial rights, repatriation, and religious freedom from the late 1800s to the present. Examines developments in the United Nations and international arena pertaining to Indigenous human rights, religious freedom, repatriation, and sacred places protection. U.S. policies, laws, practices, court decisions, land developers, pot hunters, and archaeologists have restricted the human rights of American Indians in term of burial rights and religious freedom. Congress has enacted cultural resource and environmental protection laws, religious freedom, and reburial laws that aim to regulate the use and abuse of cultural resources and Indian rights.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	521	AI Leadership and Resistance	Examines the modern leadership struggles in American Indian communities with a foundation of traditional concepts of leadership. Topics include leadership qualities and systems pre-contact, federal-tribal relations, state-tribal relations, tribal politics, internal disputes, activism, mobilization, cultural continuity, social change, community leadership, political/elected leadership, diplomacy, political agendas, and other topics related to American Indian leadership and resistance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521

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AIS	522	Tribal Governance	Explores American Indian leadership, political ideology, and the history and current state of tribal government. What makes tribal governments tick? Examines past and present challenges faced by leaders and members of indigenous communities. Brainstorms potential strategies for the further enhancement, protection, and assertion of this indigenous "brand" of governance. How do politics, policy development and the ever-changing face of indigenous sovereignty impact the way we think about governance? How can we educate and inspire tribal communities to have greater ownership and interest in government? Students engage with the current research, debate the issues, and learn from people who provide governance to indigenous communities. Case studies focus on specific issues in local communities. Individual portfolio project work facilitates learning and the articulation of leadership and governance as practiced by one particular tribe of your choice.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	523	Com Dev with AI Communities	Tribal community development is more complicated than large urban population centers or even rural communities because tribal communities continue to struggle with years of colonial, paternalistic, and assimilationist federal policies that have impeded their efforts to become self-determined and self-governing nations. Provides students with the knowledge and skills they need to support community development in American Indian communities within a self-determined and self-governing context. Content includes: (1) a framework for review of current economic, political, social, and cultural issues facing American Indian communities; (2) an overview of community development theories, of the underlying values behind those ideas, and of the linkages between theory and practice in American Indian and other Indigenous communities; and (3) a sampling of intervention strategies and tactics for effective community development in American Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	524	Indian Control of Indian Educ	Examines American Indian control of education from a tribal college and university perspective. Focuses on the tribal college movement, including the historical and contemporary political, policy, research, and best practices that have influenced and sustained tribal colleges and universities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	American Indian Studies Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
ALA	100	Intro to Environmental Design	Surveys environmental design: includes historic examples and the theoretical, social, technical, and environmental forces that shape them.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H & G	Credit is allowed for only ALA 100 or PUP 100 OR Visiting University Student
ALA	102	Landscapes and Sustainability	Surveys ideas relating to landscapes and sustainability and the role of landscape architecture in the creation of humanized environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	
ALA	121	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student

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ALA	122	Design Fundamentals II	Exercises in basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ALA 121 with C or better; Architecture, Environmental Design or Landscape Architecture major. Corequisite(s): ALA 124
ALA	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
ALA	225	Design Fundamentals III	Applies history and theory of design fundamentals with an emphasis on architectural and landscape architectural design issues.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Architectural Studies major; ALA 122 with C or better; passed Architectural Studies milestone; Corequisite(s): ALA 235 OR Visiting University Student
ALA	226	Design Fundamentals IV	Basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): ALA 225 with C or better
ALA	235	Intro to Computer Modeling	Fundamentals of computer operation, geographic information systems, geometric modeling of 3-D forms and rendering of light, mathematical modeling of processes using spreadsheets.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Architectural Studies BSD major; Corequisite(s): ALA 225 OR Environmental Design BS major; Pre- or corequisite(s): EDS 223 OR Landscape Architecture BSLA major; Corequisite(s): LDE 261 OR Visiting University Student
ALA	240	Sustainable Dgn in Built Envir	Reviews the physical principles used in the design of sustainable buildings, landscapes, and urban environments.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
ALA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ALA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ALD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Aging and Lifespan Development	1-4		
ALT	405	Power Conditioning	Fundamentals of power electronics; DC-DC converters and DC-AC inverters; battery charge controllers. Lab experience.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only ALT 405 or 505
ALT	412	Village Energy Systems	The role of energy resources in economic development. The need for and use of energy at the Base of the Economic Pyramid (BoP). Individual Problem Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Senior Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum. Credit is allowed for only ALT 412 or ALT 494 (Village Energy Systems)
ALT	420	Electrochemical Energy Tech	Thermodynamic and electrochemical principles of fuel cells. Hands-on experience on fabrication and testing of fuel cells; problem solving skills.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: CHM 113; ALT 360
ALT	435	Applied Photovoltaics	Overview of solar radiation, operating principles of photovoltaics, qualitative analysis on influencing parameters. market trends, basics of PV systems.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; ALT 410 (not required for BAS students); Credit is allowed for only ALT 435 or 535
ALT	445	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific application.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; CHM 113; Credit is allowed for only ALT 445 or 545
ALT	502	Batteries Portable Electronics	Theoretical and practical overview of primary, secondary, and lithium batteries. Key performance characteristics, construction materials, typical applications, recycling, and disposal.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	505	Power Conditioning	Fundamentals of power electronics, DC-DC converters and DC-AC inverters, battery charge controllers.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Credit is allowed for only ALT 405 or 505
ALT	507	Evaluation Photovoltaic & FCS	Field testing, data collection, and evaluation of real-world photovoltaic and fuel cell systems available on campus and data analysis.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	512	Village Energy Systems	Establishes leadership in the development of energy resources at the Base of the Economic Pyramid (BoP). Individual Problem-Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum; Credit allowed for only ALT 512 or ALT 598 (Village Energy Systems)
ALT	515	Reliability and Standards	Alternative energy systems and their reliability issues, accelerated life and safety testing, standards and codes, regulatory requirements.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	535	Applied Photovoltaics	Term projects, overview of solar radiation, operating principles, qualitative analysis on influencing parameters, market trends, basics of PV systems.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status; Credit is allowed for only ALT 435 or 535

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ALT	545	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status. Credit is allowed for only ALT 445 or 545
AME	101	ASU Digital Culture Experience	Orientation to the Digital Culture program with emphasis on resources for academic success.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): Digital Culture BA or Digital Culture (Media Processing)BS major OR Visiting University Student
AME	111	Intro to Digital Culture	Examines the effects of digital technology on the way we live, communicate, learn, and create. Proposes that we are moving towards a hybrid (physical-digital) existence and culture. Traces that evolution, looks at current examples of hybrid cultural processes and outcomes, and discusses possible future trends. Discusses how these changes are influencing the work and career possibilities of people involved in all aspects of human culture. Comprises diverse readings, media products, class interaction, group discussion and hands-on collaborative projects exploring concepts covered in class. Also includes a number of guest lectures from ASU faculty.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 111 or 194 (Introduction to Digital Culture)
AME	112	Computational Thinking for DC	Introduces fundamental concepts relevant for understanding computation. What are algorithms and how can computer code express them? Basics of how real-world signals are captured, encoded, recorded, retrieved and decoded. Designed for students with little or no background in programming.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 112 or 194 (Computational Thinking for Digital Culture)
AME	120	Digital Culture Studio	Provides advice on career preparation and industry skills through a series of guest lectures. Sample topics include resumes, personal Websites and portfolios, how to pitch a project idea, and topics chosen by guest industry presenters.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Credit is allowed for only AME 120 or AME 194 (Digital Culture Studio)
AME	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only AME 130 or ENG 130 OR Visiting University Student
AME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	210	Media Editing	Introduces the fundamental principles of media editing including form, composition, structure, pattern, sequence and rhythm. Using a combination of open source, commercial and custom-designed tools and platforms, students design, construct, communicate and interpret rich media messages. Through creating and critiquing visual compositions, audiovisual artifacts, spatial narratives or generated graphs, students explore the practice of media editing as a spatial, temporal and dynamic process.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 210 or AME 294 (Media Editing) or DSC 294 (Media Editing)
AME	220	Programming for the Web	Introduces a range of technologies used for Web development: marking up content with HTML, styling with CSS and interaction using Javascript. Explores the latest foundational Web standards such as HTML5 and CSS3 to learn how to create compelling content for the World Wide Web. Goes beyond simply coding a Web page to understanding how the Web works. The World Wide Web is used in an incredible variety of applications that we now find integral to our lives, from talking to our friends on Facebook to discovering music on the iTunes Music Store, paying bills from our bank's Web site to finding the route to our vacation destination on Google maps. Investigates how Web standards have enabled the creation of dynamic applications delivered over the Internet.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230 or CSE 110; Credit is allowed for only AME 220 or AME 294 (Programming for the Web)
AME	230	Programming for Media Arts	Introductory-level course in practical aspects of programming systems for media arts. Explores techniques in programming in the context of images, sounds, interaction, networking and data visualization. Uses the processing programming language, an accessible yet powerful environment for learning how to program. Students create images, animations and interactive programs, and learn how to use images, movies, sound files, microphones and cameras in their programs.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 230 or AME 294 (Programming for Media Arts)

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AME	240	Intro to Physical Computing	Students learn the basic skills required to build physical-computing systems through a series of practical tutorials and design challenges. These skills include basic fabrication with hand and CNC tools, electronic design fundamentals, circuit construction techniques, introductory microcontroller programming and the use of simple sensors and actuators. The primary difference between this introductory-level course and the advanced course is that students in this course are not expected to invent original projects. Projects with clear engineering and design challenges are assigned. Within the scope of these projects there are significant opportunities for creativity but the emphasis is on learning basic skills.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 240 or AME 294 (Introduction to Physical Computing)
AME	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
AME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	310	Media Literacies Composition	When we integrate computational systems into the core of our cultural and social practices, we reinvent how we tell stories. The roles of creators, critics and audiences are blurring at the same time that digital tools allow us to infinitely reproduce and remix narratives, radically changing what we mean by the "work" or "text." These new media platforms empower us to create, share and respond to cultural narratives that defy traditional notions of how stories operate, demanding new literacies. Explores our powers and responsibilities as readers, writers and creators of new cultural languages, including new forms such as games, digital video, electronic literature and social media. Students study relevant media narratives and cultural ecosystems from the 20th and 21st centuries, acquiring a set of literacies that they hone through practices of authorship, critique and collaboration, culminating in the presentation of their own digital media narratives.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AME 310 or AME 394 (Media Literacies & Composition)
AME	320	Motion Cap Integrative Sys	Presents the broad principles and techniques for movement study in oneself and others that includes applied, dynamic anatomy. Also presents the functional techniques for motion capture with a special emphasis on the capture of human movement from visual sensors. Students understand the technology behind motion capture; a high-level understanding of movement and anatomical systems; the ability to perform motion capture and customize it to suit the requirements of specific creative applications in animation, sound and live performance as well as applications in movement rehabilitation and education. Looks at the technology behind various modern motion capture systems based on markers, inertial sensors, accelerometers, and depth sensors, so the student appreciates the technical capabilities and limitations of each technique.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 320 or AME 394 (Motion Capture for Integrative Systems)
AME	330	Digital-Physical Systems	Hands-on course where students explore digital-physical systems by working with the fundamental building blocks of interactive technologies and examining exemplar works of media art. Basics of electronics, circuit design, sensors, actuators, simple mechanical design, the iterative design process and microcontroller programming. Emphasizes media and arts applications such as real-time interactive performance, robotic installations and tangible computer interfaces.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 240; minimum 45 hours; Credit is allowed for only AME 330 or AME 394 (How to Build a Digital-Physical System) OR Visiting University Student
AME	333	Improvising Cyborgs	This experiential and practice-based course provides a multidisciplinary platform for students to work collaboratively to accomplish set creative challenges. Open to anyone with experience working with technology who wants to explore improvisation and performance, not only as art forms, but also to inform their making process, and translate these skills to other areas. Encourages sound/music, dance and visual practitioners to work together.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 333 or AME 394 (Improvising Cyborgs) OR Visiting University Student

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AME	340	Comp & Computational Principle	In much of today's contemporary art practice there is a tight coupling of compositional form, content and underlying computational mechanisms. This integration holds the potential to yield new modes of expression and wholly new art experiences as is evident in emerging forms of real-time generative art, network-based art, game-based art, and interactive performance. As both practitioners and participants, we must develop a critical understanding of the relevant compositional and computational principles that frame this work. Students study relevant media art works from the 20th and 21st century, develop a working understanding of fundamental compositional and computational principles, and apply their understanding through the realization of exploratory media artworks that are presented at the end of the semester.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours
AME	385	Collab Projects & Research I	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): BA in the Arts (Digital Culture) or BA Design Studies (Digital Culture) or Digital Culture major; Minimum 45 earned hours; Credit is allowed for only AME 385 or 394 (Collaborative Projects & Research I)
AME	386	Collab Projects & Research II	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 385; Credit is allowed for only AME 386 or 394 (Collaborative Projects & Research II)
AME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	410	Interactive Materials	Focuses on embedding computation into the physical world and envisioning the future of tangible interactive media. Students make, tinker and experiment with high-tech and low-tech materials ranging from electronics (microcontrollers, sensors and actuators) to softer components including textiles, paper, paints, food and organic/living systems. Grounds hands-on, materially oriented work in theoretical concepts from HCI (Human Computer Interaction), speculative design and design fiction. Students build interactive prototypes as artifacts that exist in fictional worlds to explore emerging dialogues around desirable and undesirable futures.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 330
AME	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
AME	430	Mac Development for Media Arts	Explores native application development for OS X (Macintosh) for use in the domain of media arts. Project-based course covers the native Xcode development environment and the C and Objective-C programming languages. Native applications are able to achieve the highest levels of performance; they leverage the unique technologies built for a platform and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. To understand native apps for OS X, the course examines a number of code frameworks provided for developers by Apple (the core of which are often called Cocoa), including Foundation, AppKit, AV Foundation, Core Animation and SpriteKit.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230; Credit is allowed for only AME 430 or AME 494 (Mac Development for Media Arts) OR Visiting University Student

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AME	435	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 430 or AME 494 (Mac Development for Media Arts); Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)
AME	444	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 244 or AME 294 (Introduction to Interactive Environments); Credit is allowed for only AME 444 or AME 494 (Media Installations) or AME 544 or AME 598 (Media Installations)
AME	470	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 220; minimum 45 hours; Credit is allowed for only AME 470 or AME 570
AME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		
AME	485	Digital Culture Capstone I	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Digital Culture student; minimum 70 hours; Credit is allowed for only AME 485 or AME 494 (Digital Culture Capstone I)
AME	486	Digital Culture Capstone II	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 485; Credit is allowed for only AME 486 or 494 (Digital Culture Capstone II)
AME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6		Prerequisite(s): Barrett Honors student
AME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AME	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-3		
AME	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)

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AME	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit allowed for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analysis)
AME	520	Understanding Activity	Focuses on computational and humanistic underpinnings for describing human activities for interactive systems. Obtains a holistic understanding of both the computational models, as well as somatic approaches, and enables their translation into meaningful interactive systems for a variety of applications. Project-driven course encourages students to work individually and collaboratively to generate movement to interface with appropriate sensing, analysis and feedback systems with applications in health and well being, creative practices and games. Transdisciplinary course; therefore, expectations for skills and outcomes are multiple and varied, with students expected to work with students and ideas from other disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 520 or AME 598 (Understanding Activity)
AME	530	Experiential Media Studies I	Focuses on media arts and sciences in the 20th and 21st centuries, discussing issues surrounding the evolution of media art research and creation practices, methods of criticism and analysis, transdisciplinary work and research, collaboration and current trends. Emphasizes the methodology, theory and history behind the experimental study of experience via experiential systems. Directed toward those interested in researching, designing, building or critiquing experiential media systems that are culturally or technoscientifically provocative and socially meaningful.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	531	Experiential Media Studies II	Engages students in the theory and practice of designing and evaluating experiential media systems. Introduces advanced topics building on ideas and concepts explored in the companion introductory course. Based on furnished examples as well as their own experience, students create and critique a variety of integrated media systems demonstrating technical competence, aesthetic knowledge, analytic rigor and theoretical relevance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 530
AME	532	Media Synthesis	Focuses on creation of media of all kinds using computation. Using algorithms it is possible to create complex media that is difficult or impossible by traditional methods. Some techniques can capture the unpredictable evolutionary and emergent behavior found in nature. Investigates influential algorithmic methods including stochastic processes and Markov chains, Perlin noise, cellular automata, fractals, L-systems and genetic algorithms.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	535	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)

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AME	544	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 444 or AME 544 or AME 598 (Media Installations)
AME	570	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 470 or AME 570 or AME 494 (Programming for Social and Interactive Media) or AME 598 (Programming for Social and Interactive Media)
AME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	590	Reading And Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	YGB	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	100	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	MA	Prerequisite(s): MAT 117 or higher with C or better or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
AML	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	253	Intro to Math Tools & Modeling	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 100 or SOS 101 with C or better OR Visiting University Student
AML	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	406	Dir Rdg & Rsrch Life & Soc Sci	Collaborative, practice-oriented course where students produce individual or team-initiated research project reports on pertinent topics in the life and social sciences. Students select topics, design, identify and formulate effective research ideas, and then translate them into clear and effective research plans.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s):AML 100; MAT 342 (or MAT 343); 86 minimum hours OR Visiting University Student
AML	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibria in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: AML 253, or SOS 210(or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)
AML	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
AML	520	Agent-Based Modeling	Introduces agent-based modeling to simulate social and social-ecological systems. Topics include design, analysis, and empirical grounding of agent-based models to a variety of application domains including collective action, diffusion processes, resource use, health, and complex societies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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AML	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only AML, ESS or SOS 540
AML	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)
AML	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560
AML	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	610	Topic Appl Math Life & Soc Sci	Introductory course in applied mathematics for the life and social sciences, combined with the first semester of a two-semester course in mathematical biology. Provides a solid introduction to the modeling of biological and social processes as well as to some of the mathematical approaches involved in their analysis and simulation.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	612	Appl Math Life&Soc Sci Mod Sem	Presents and applies mathematical modeling principles and techniques for representing the structure and operation of complex life and social systems and processes. Helps students identify potential problems in the life and social sciences and the corresponding mathematical and statistical methods that can be used for their study.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AML	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
AMS	201	Intro to American Studies	Provides an intellectual foundation for the interdisciplinary study of American culture, history, and society. Introduces students to ideas, methods, tools, and theories in the vibrant field of American studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
AMS	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
AMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	326	Popular Culture	Topics in American popular culture, including theories of popular culture, the history and analysis of mass media, including television, film, and the music industry; and vernacular art and the folk tradition.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	330	American Lives	Examines American society through the study of autobiography and ethnography.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): minimum 30 hours
AMS	332	Studies in Race and Ethnicity	Topics relating to issues of race and ethnicity in American life. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	334	Class in America	Explores social class and inequality in the U.S. including history, culture, work, politics, globalization, and intersections of gender, race, ethnicity, and place.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	336	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
AMS	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
AMS	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AMS	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
AMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	412	Studies in Amer Politics & Law	Topics in American political and legal systems, including social movements in the United States and women and the law. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H	
AMS	417	Religious Trad/Amer Southwest	Examines the sacred traditions that have evolved within the North American Southwest context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
AMS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student
AMS	429	Interdisciplinary Topics	Senior-level seminar that examines issues relevant to two or more American cultures' fields. Topics may include Southwest/border Hispanic folklore, Southwestern corridors, American art and the city, and the West of the imagination. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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AMS	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
AMS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
AMS	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
AMS	490	Writing Certificate Portfolio	Preparing a portfolio demonstrating advanced writing skills. Limited to and required of students in the Writing Certificate Program.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		
AMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
AMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101 or 105 with C or better; AMS 301 with C or better
AMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
AMS	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AMS	502	Amer Studies: Theory & Method	Explores some of the major themes in American studies scholarship by considering American cultural formation and change over the last two centuries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): MA American Studies major
AMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AMS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	101	Intro to Aeronautic Mgmt Tech	Facilitates entry into aeronautical management technology programs. Emphasizes General Catalog, major and concentration requirements, registration, careers, and Polytechnic campus resources. Introduces various learning styles and strategies that assist students in becoming successful learners. Emphasizes time management techniques and academic integrity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		

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AMT	105	Flight Operations & Safety I	Supervised private pilot operations, flight instruction, flight safety briefings and recurrent aviation subjects appropriate for private pilots. Flight instruction is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons and FAA Practical Exam(s) within the appropriate flight training syllabus and satisfactorily completing all academic requirements. Flight instruction costs are not included in university tuition and fees. Students following the single engine flight training track earn their Single Engine Private Pilot certificate. Students following the multiengine flight training track earn their Single Engine Private Pilot Certificate and their Multiengine Private Pilot certificate.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; approved Secondary Flight application; Pre- or corequisite(s): AMT 182 with C or better if completed; AMT 220 with C or better if completed
AMT	110	Flight Operations & Safety II	Concludes supervised private pilot operations and flight training and introduces students to supervised commercial pilot operations, flight training, flight safety briefings, and recurrent aviation subjects appropriate for private and commercial pilots. Flight instruction costs are not included in university tuition and fees.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 105 with C or better
AMT	150	Flight Operation & Safety III	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 with C or better; Credit is allowed for only AMT 150 or AMT 151
AMT	151	Flight Op and Safety III.a	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 with C or better; Credit is allowed for only AMT 150 or AMT 151
AMT	170	Intro to Unmanned Aircraft Sys	Introduces the history of unmanned aircraft systems and current and future developments in civil and military operations. Specific blocks deal with elements that form an unmanned aircraft system: unmanned vehicles, communication, navigation, launch and recovery, control stations, payloads, and support equipment. Explores other current issues in unmanned aircraft operations: aviation regulatory system and integration, safety and human factors, ethical and legal issues, and the future unmanned aircraft systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	182	Private Pilot Ground School	Ground school preparation for Private Pilot Certificate. Aerodynamics, navigation, performance, and regulations.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	201	Air Traffic Control	Ground and air operations; weather services communications and routing; flight plans, IFR operations, departures and arrivals; and airport conditions and emergencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Air Traffic Management or Air Transportation Management or Professional Flight or Unmanned Aerial Systems) BS or Applied Science (Aviation) BAS major

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AMT	205	Flight Operations & Safety IV	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 150 with C or better; Credit is allowed for only AMT 205 or AMT 206
AMT	206	Flight Ops and Safety IV.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 151 with C or better; Credit is allowed for only AMT 205 or AMT 206
AMT	210	Flight Operations and Safety V	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 205 with C or better; Credit is allowed for only AMT 210 or AMT 211
AMT	211	Flight Ops and Safety V.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 200 with C or better; Credit is allowed for only AMT 210 or AMT 211
AMT	214	Commercial Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 1 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Air Traffic Management BS or Aeronautical Management Technology (Air Traffic Management) BS major; AMT 182 with C or better; AMT 220 with C or better OR Pre- or corequisite(s): AMT 205
AMT	220	Aviation Meteorology	Evaluation, analysis, and interpretation of atmospheric phenomena. Low- and high-altitude weather from the pilot's viewpoint.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	222	Instrument Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 2 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 110 with C or better OR other Aeronautical Management Technology major; AMT 182 with C or better; AMT 220 with C or better

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AMT	250	Flight Operations & Safety VI	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 210 with C or better; Credit is allowed for only AMT 250 or AMT 251
AMT	251	Flight Ops and Safety VI.a	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 211 with C or better; Credit is allowed for only AMT 250 or AMT 251
AMT	270	Unmanned Aircraft	Introduces elements comprising the unmanned aircraft system (UAS). Includes review of UAS, Unmanned Aerial Vehicle (UAV); system development and certification, selection and design, aerodynamics and airframe configurations, characteristics of vehicle types, design standards and regulatory aspects, airframe design, payload types, and control and stability. Students apply concepts acquired in classroom sessions and construct various unmanned aircraft, train to operate using existing simulators, and conduct flight-testing. The final course project is the design, development and construction of a group 1 unmanned aircraft, serving as the core unmanned vehicle used in subsequent UAS courses. Incorporates UAS data collection and analysis throughout the course. Course concepts enable UAS student pilots to become knowledgeable of aerodynamic aspects of UAV to ensure safety of flight and improved maneuverability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 170 with C or better if completed
AMT	280	Aero Structures/Matl & Systems	Basic aerodynamics, incompressible/compressible airflow, wind tunnel testing, wing theory; analysis of aircraft structures; properties and applications of materials, and aircraft systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111 with C or better if completed; PHY 113 with C or better if completed OR PHY 121 with C or better if completed; PHY 122 with C or better if completed
AMT	285	Flight Instr Ground School	Ground school in preparation for the FAA Flight Instructor Certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 210 with C or better if completed
AMT	286	Multiengine Pilot Ground Schl	Ground school preparation for the FAA Multiengine Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 205 with C or better if completed
AMT	287	Aircraft Powerplants	Theory and performance analysis of gas turbine and reciprocating aircraft engines. Engine accessories, systems, and environmental control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111 with C or better if completed; PHY 113 with C or better if completed OR PHY 121 with C or better if completed; PHY 122 with C or better if completed
AMT	292	Flight Instr Instrument Gr Sch	Ground school preparation for the FAA Instrument Flight Instructor Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 210 with C or better; AMT 285 with C or better
AMT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		

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AMT	305	Flight Operations & Safety VII	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 250 with C or better; Credit is allowed for only AMT 305 or AMT 306
AMT	306	Flight Ops and Safety VII.a	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 251 with C or better; Credit is allowed for only AMT 305 or AMT 306
AMT	308	Air Transportation	Studies the historical and international development of air transportation and its social, political, and economic impact upon global interrelationships.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3	G	Pre-requisite: Minimum 50 hours
AMT	310	Flight Operations Safety VIII	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 305 with C or better; Credit is allowed for only AMT 310 or AMT 311
AMT	311	Flight Ops and Safety VIII.a	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 306 with C or better; Credit is allowed for only AMT 310 or AMT 311
AMT	350	Aircraft Design/Logistics Mgmt	Fundamental aircraft design principles, including performance factors associated with mission profiles and the identification of basic logistical support requirements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Applied Sci (Aviation) BAS or Aeronautical Mgmt Tech BS major; Pre- or corequisite(s): PHY 111 w/ C or better if completed; PHY 113 w/ C or better if completed OR PHY 121 w/ C or better if completed; PHY 122 w/ C or better if completed
AMT	360	Aircraft Dispatch Ground	Aeronautical knowledge areas required for Aircraft Dispatch certification, as well as preparation for the Aircraft Dispatch knowledge examination. Regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology, and flight operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 214 with C or better; AMT 220 with C or better; AMT 222 with C or better

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AMT	370	Unmanned Aircraft Systems	Students build upon gained knowledge, skills and experience by exploring unmanned aircraft avionics, autopilot systems, first person video (FPV), on-screen displays (OSD), communication systems, command and control (C2), ground control stations (GCS), flight software, and UAV launch and recovery systems. Students continue flight training and gain proficiency in unmanned aircraft operation using simulators and hands-on flight-testing. Students demonstrate their abilities to upgrade and modify their previously constructed unmanned aircraft in order to operate and conduct actual flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 270 with C or better
AMT	382	Air Navigation	Theory and application of modern advanced navigation and flight instrument systems. Introduces crew resource management in multiple cockpits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 210 with C or better
AMT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	396	Aviation Professional	Career focus for management and flight students, including internships, writing, interviews, and employment search in aviation industry.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Applied Science (Aviation) BAS or Aeronautical Management Technology BS major; minimum 50 hours
AMT	408	National Aviation Policy	Examines aviation and airspace policies and policy process, including agencies involved in formulation, implementation, and evaluation of aviation policy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	410	Aviation Safety & Human Factor	Aviation accident prevention, human factors, life support, fire prevention, accident investigation, and crash survivability. Development and analysis of aviation safety programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	442	Aviation Law and Regulations	Aviation within context of U.S. Common Law system. Public law, administrative rule making, sovereignty, enforcement, and case law analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	444	Airport Management & Planning	Orientation to administration and management of modern public airports, including overview of planning, funding, and development of airport facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	456	Organized Labor in Aviation	Explores topics of labor relations, unions, federations, collective bargaining, grievances and labor legislation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	460	Aircraft Dispatch Capstone	Capstone for aircraft dispatch whereby students are engaged in practical applications of regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology and flight operations. Uses various scenarios in which students can employ the strategies and procedures necessary for safe flight.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 360 with C or better
AMT	470	UAS Payload, Sensors, Control	Builds on previously gained knowledge and experience. Student pilots utilize long-range communication and data links, UAS sensors, geospatial data collection, and still-imaging mosaicking. Students continue flight training using existing simulators and flight-tests during the course. Students apply concepts acquired during classroom sessions and construct a ground control station, modify and upgrade existing unmanned aircraft with payloads/sensors, train to operate sensors using existing simulators, and conduct flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 370 with C or better
AMT	482	Airline Instrument Procedures	Advanced instrument flight using airline instrument procedures and airline crew and cockpit resource management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 382 with C or better
AMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
AMT	486	Regional Jet Aircraft Systems	Regional jet airline aircraft systems and flight procedures. Includes theoretical education for regional jet commercial passenger aircraft.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 382 with C or better

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AMT	488	Regional Jet Aircraft Sys II	Regional jet systems, with emphasis on air navigation systems, including Flight Management System (FMS), Selective Calling (SELCAL), and flight profiles.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite(s): Aeronautical Management Technology (Professional Flight) student; AMT 382 with C or better
AMT	489	Airline Administration	Administrative organizations, economics of airline administration, operational structure, and relationship with federal government agencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	490	Regional Jet Operatns Capstone	Regional jet aircraft operations and flight procedures. Includes theoretical education for RJ aircraft, FTD and full-motion simulator time.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 305 with C or better; AMT 486 with C or better
AMT	491	Aviation Management Capstone	Integrated group project with industry partner to address current problems in either air carrier or airport management focus area.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 489 with C or better if completed
AMT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6		Prerequisite(s): Barrett Honors student
AMT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Prerequisite(s): minimum 45 hours
AMT	495	UAS Operations	Capstone course applies student pilots' knowledge and skills gained in previous UAS courses to safely deploy a UAS in response to real-world situation or research. Students collaborate with other university departments, state or federal agencies, and other organizations and conduct actual or simulated missions in geospatial data collection, search and rescue, and near-space operations. Course blocks include flight planning and preparation, aircraft preflight and maintenance, launch and recovery operations, payload operations, normal and emergency procedures, and mission planning and execution. Students continue flight training using existing simulators and flight-tests. Students use real-world situations which require deployment of equipment and systems developed during previous course. Places specific emphasis on aircraft and payload selection based upon proposed mission analysis. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 470 with C or better
AMT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-3		
AMT	522	Aviation Law	Examines the U.S. legal system with a focus on the aviation perspective, administrative agencies, FAA enforcement, and case law.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	523	Intermodal Transportation Mgmt	Systems theory applied to intermodal transportation networks. Surveys air and ground transportation infrastructure, institutional frameworks, and intermediaries promoting connections between modes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Senior in Fulton Schools of Engineering with a University Cum GPA 3.0 or greater
AMT	525	Airport Planning and Design	Completion of various phases of airport master planning process. Provides guidance for logical and timely development of airports. Project work groups assigned.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	526	Aviation Labor Relations	Investigates labor-management relations in the aviation industry, including laws, unionism, collective bargaining, public sector relationships, grievance procedures, and conflict.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	527	Airline Management Strategies	Since deregulation, airlines have undergone profound changes through mergers, consolidation, and acquisition. In-depth look at airline management strategies for the 21st century.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AMT	533	Aviation Systems & Psychology	Provides an overview of various aviation learning/training situations and how to develop and evaluate instruction appropriate for the situation and the learner. Focuses on determining the most effective instructional strategy for the situation and how to ensure learner preparedness and mastery of the concepts and skills. Considers topics: information processing, memory, instructional design methodologies, learning strategies, expert/novice differences, individual learner differences including generational differences, evaluation of instruction, transfer of knowledge and skills to unique settings. Discussions focus on research findings in these areas and practical application and implementation to improve learning and performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	534	Airline Pricing	Focuses on the fundamentals of airline economics and the volatility of industry performance at the operating level. Topics include the structure of the airline industry and the various historical and current operational strategies; demand, traffic, price and yield; operating revenues and operating costs. The airline industry is affected by various economic, environmental, political and regulatory conditions. Reviews the implications of these conditions on airline pricing, capacity, fleet selection and scheduling. Analyzes current and predicted future conditions to develop potential strategies for successful revenue management within the industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite: degree- or nondegree-seeking graduate student. Credit is allowed for only AMT 534 or AMT 598 (Airline Pricing and Yield Management)
AMT	541	Aviation Physiology	Surveys human physiology and human performance principles related to modern aircraft and aircraft systems operating in multiple environments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	546	Crew Res Mgmt/Line-Orient Flt	Evaluates in-depth, multicrew coordination issues for commercial aviation pilots. Stresses importance of critical thinking, decision making, integrated resource utilization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	565	Safety	Evaluates human error in aerospace systems. Discusses different theories of error and taxonomies as well as safety management systems to help identify hazards and risks and then help mitigate and/or eliminate them. Extensively uses case studies to highlight human failures as well as demonstrate organizational changes that resulted in safe and successful operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	570	Unmanned Aerial Systems	Examines the system design, operations and employment of unmanned aerial systems (UAS), beginning with an overview of the system and human factors and specific issues involved with UAS design and operations. Communication, remote operations, operator display interface, and situational awareness and teamwork required for successful employment. Evaluates accident data to understand technology and human error concerns.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student

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AMT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
ANB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N		RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	601	Strategies in Animal Behavior	Using hands-on experiences, teaches key concepts underlying the control and function of animal behaviors and contemporary methods for measuring, analyzing, and reporting animal behaviors. Combines introductory classroom lectures on concepts and methods with direct application in observations and experiments on animal behavior in the field and the lab. Topics include communication, mating behavior and systems, parental care, kin selection, cooperation and competition, migration and dispersal, foraging, and anti-predator strategies.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Pre-requisites: Animal Behavior PhD student
ANB	602	Current Issues In Behavior	Student-led seminar course centers on discussions of contemporary literature in the field of animal behavior. Takes a student-driven approach, with course participants selecting a target theme for the semester, selecting individual papers to discuss each week, and leading discussions about relevant merits and shortcomings of each article. Additional topics may include: conceptual frameworks and results from the dissertation projects of participating students, career options and strategies in the behavioral sciences, responsible research conduct in the field, and tactics in manuscript publication and grantsmanship.	N		SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisites: Animal Behavior PhD student
ANB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ANB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APA	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisite: Freshman status
APA	200	Intro/Asian Pacif Amer Studies	Examines historical and contemporary issues facing Asian Americans and Pacific Islanders in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	
APA	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
APA	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
APA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
APA	310	Asian Pacific Amer Arts&Cultur	In-depth exploration of Asian Pacific American cultural expression in art, literature, film, theatre, dance, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	315	Asian Pacific Amer Literature	In-depth exploration of the literary history, critical reception, and major theories in Asian Pacific American poetry, fiction, and prose.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	330	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
APA	340	Asian Pacific Americans/Media	Advanced study of the social construction of Asian Pacific American media images and resistance to those images in various historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
APA	347	Immigration Education &Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
APA	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student

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APA	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
APA	355	Asian American Psychology	Reviews the current research and literature about the psychological experiences of Asian Americans, with the appreciation for the historical, sociopolitical and cultural contexts that invariably shape the behavior and well-being of individuals in this diverse population group. Using psychological theory and research as a guiding framework, explores family relationships, identity development, sexuality, model minority stereotypes, racism and discrimination, media images, dating/marriage, race relations, mental health, and other issues affecting Asian American lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 355 or APA 360 (Asian Pacific American Psychology)
APA	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
APA	360	Asian Pacific Amer Experience	Advanced study of the historical and contemporary experiences of Asian Pacific American racial/ethnic groups in the United States.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
APA	450	Asian Pacific Amer Contemp Iss	Advanced study of the issues shaping Asian Pacific American communities, including immigration, politics, education, health, family, gender, youth, interracial relations, and other contemporary topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or minimum 36 hours OR Visiting University Student
APA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
APA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
APA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
APA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: APA 200 or APA 210 or minimum 45 hours
APA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
APA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
APH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	212	Culture of Place	Explores contemporary conditions in the built environment as they are shaped by cultural phenomena.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
APH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	300	World Architect I/West Culture	Historical and contemporary built environments of Western civilizations: Mediterranean, Europe, and the Americas as manifestations of cultural history and responses to environmental determinants.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2-3	HU & H & G	Prerequisite(s): May not be Pre-Architectural Studies or Architectural Studies BSD student OR Visiting University Student

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APH	313	History of Architecture I	Intensive study of history of architecture from earliest traces to 1300. Examines cultures from around the world.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): Architectural Studies BSD major; ALA 100, ALA 102; ENG 101, 105 or 107 with C or better; passed degree milestone review OR non-Arch Studies majors; ENG 101, 105 or 107 with C or better; min junior standing OR Visiting University Student
APH	314	History of Architecture II	Intensive introduction to history of architecture from roughly 1300 to present day. Examines cultures from around the world.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): APH 313 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
APH	336	20th-Century Architecture I	Architecture in Europe and America from the foundations of the modern movement to the culmination of the international style.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisites: Minimum Junior standing or Digital Culture: Design major
APH	337	20th-Century Architecture II	Developments in architecture since the international style.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisite: APH 336
APH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	405	Contemporary Architecture	Addresses issues of global architecture and urbanism in the late 20th and early 21st centuries.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): APH 313 and APH 314, or graduate standing OR Visiting University Student
APH	414	Great Cities	Historical survey of great cities from antiquity to the present.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 3.00 GPA; minimum 60 hours; Credit is allowed for only APH 414 or MUD 598 (Great Cities) OR Visiting University Student
APH	421	First Concepts	Examines the major writings and concepts that surround the history of architecture. Focuses on (but not exclusively) work in the 20th century.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L or HU	Prerequisite(s): Architectural Studies BSD or Environmental Design BS major; APH 313 with C or better; APH 314 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
APH	441	Ancient Arch	Architecture of the ancient Mediterranean world with selective emphasis on major historical complexes and monumental sites.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
APH	461	Charles and Ray Eames	Survey of American designers Charles and Ray Eames, their innovation design thinking and masterworks.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): minimum 3.00 GPA; minimum 60 hours OR degree- or nondegree-seeking graduate student; Credit is allowed for only APH 461 or APH 494 (Charles + Ray Eames) OR Visiting University Student
APH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
APH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
APH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
APH	505	Foundation Theory Seminar	Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture student; Co-requisites: ADE 522; ATE 556
APH	509	Foundation Seminar	Historical, technical, theoretical, environmental, and professional issues in architecture.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture; Co-requisite: ADE 510
APH	515	Current Issues and Topics	Critical examination of current architectural issues, topics, and discourse.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: APH 505 with a C or better; Co-requisite: ADE 621
APH	581	Contemporary Urban Design	Explores contemporary city and urban design issues related to contemporary cities.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
APH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student

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APH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
APH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
APH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	518	World Englishes	Examines the implications of the global spread of English, including its diverse forms and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 518 or APL 591 (World Englishes) or APL 691 (World Englishes)
APL	555	Disciplinary Discourses	Professional and disciplinary issues in linguistics and applied linguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
APL	558	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510
APL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student
APL	588	Spanish Language Acquisition	Examines Spanish language acquisition in children and adults in the context of monolingual and bilingual language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate
APL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student

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APL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	601	Intro to Applied Linguistics	Overview of the field of applied linguistics. Applies linguistic knowledge to the resolution of language-related issues facing multilingual societies (e.g., second language acquisition and ultimate attainment, literacy, language assessment, bilingualism, heritage and indigenous languages, language attitudes, language planning and policy, language and politics, world Englishes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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APL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	501	Differential Equations I	Linear and nonlinear ordinary differential equations. Existence and uniqueness of solutions, limit sets, stability, Lyapunov functions, linear systems with constant coefficients. Geometry of behavior in two and three dimensions, including Poincare-Bendixson theorem, Lorenz equations, linearization, sensitive dependence on initial conditions, bifurcations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	502	Differential Equations II	Partial differential equations, including classification, method of characteristics, separation of variables, boundary value and initial value problems, Green's functions, maximum principle, distributions, and weak solutions. Students must have already taken or be concurrently enrolled in Differential Equations 1.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	503	Applied Analysis	Convergence sequences and series of functions; metric space topology, compactness, completeness and the Ascoli-Arzelà Theorem; Contraction Mapping Principle, Implicit Function Theorem; intro to Lebesgue integration leading to L^p -spaces; properties of Hilbert spaces, Fourier transform. Students should have knowledge of linear algebra, multivariable calculus, and analysis at the undergraduate level.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	504	App. Prob. and Stochastic Proc	Markov chains, Martingales, probability measures, SDE, Brownian motion, Monte Carlo methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	505	Applied Linear Algebra	Fundamentals of linear algebra and numerical linear algebra, including decompositions (LU, QR, SVD), Eigen values, spectral theory, least squares problems. Programming with MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	506	Computational Methods	Covers interpolation, solution of nonlinear equations and systems, numerical differentiation, numerical integration, numerical solution of ordinary and partial differential equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	520	Adv Numerical Linear Algebra	Extends topics of APM 505. Introduces essential iterative methods, Gauss-Seidel, conjugate gradients. Methods for SVD, total least squares and root-finding applications in image analysis. Students should have basic knowledge of numerical linear algebra and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	522	Numerical Methods for Partial	Numerical methods for parabolic, elliptic, and hyperbolic partial differential equations, including finite difference/volume, finite element, and spectral methods. Mathematical concepts of stability, consistency, and convergence. Applications to scientific, biomedical, and industrial problems. Students should have a basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	523	Optimization	Building on a fundamental undergraduate background in linear algebra and calculus, covers continuous optimization, constrained/unconstrained and linear/nonlinear, as well as selected topics in discrete optimization. Some programming experience is needed for course projects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	524	Spectral Methods	Extends approximation theory to global methods, including Fourier and orthogonal polynomial expansions. Applications to imaging and hyperbolic, parabolic, and elliptic partial differential equations. Students should have previous graduate courses in ordinary and partial differential equations, basic programming skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	525	High-Performance Computing	Supercomputer architectures, parallel programming environments, languages, libraries, and algorithms for high-performance numerical simulations. Instructor/Department approval is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only APM 525, MAE 494 (High-Performance Computing) or MAE 598 (High-Performance Computing)
APM	526	Adv Numerical Methods for PDEs	Partial content will vary from semester to semester, but may include hyperbolic conservation laws, finite element methods, multigrid methods, and parallel algorithms for partial differential equations. Applications to scientific, biomedical, and industrial problems. Students should have basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	530	Mathematical Cell Physiology.	Mathematical modeling of dynamical aspects of cell physiology. Diffusion, membrane transport, intracellular calcium channel kinetics, calcium oscillations and waves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	531	Mathematical Neuroscience I	Mathematical modeling of electrochemical processes in nerve cells. Dendritic modeling, dendritic spines and synaptic plasticity, bifurcation analysis of excitable membrane models, deterministic and stochastic methods for threshold dynamics and bursting, relaxation oscillations. Students should have had a previous graduate-level PDE course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	533	Mathematical Population Biolog	Selectively covers population biology models in the forms of systems of difference equations or ordinary differential equations. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous graduate-level course in ODE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	534	Mathematical Population Bio 2	Selectively covers population biology models in the form of partial differential equations and systems. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous basic graduate-level course in ODE and PDE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	535	Math Models in Medicine	Mathematical models for the etiology, epidemiology, pathogenesis, morphology and treatment of disease. Covers dynamical models of cancer and viral infections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	541	Stochastic Modeling in Biology	Markov processes, random walks, martingales, branching processes, logistic growth model, Wright-Fisher model, Kingman's coalescent, bound and site percolations, contact processes, voter models. Students should have previously taken course work in probability and/or stochastic processes (or have a recommendation from their advisor). Recommendation from advisor is typically for students in biology or physics that have not taken statistics courses but have a good background in mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	560	Applied Dynamical Systems	Bifurcations, normal forms, pattern formations, mixing, Lagrangian chaos, and applications to fluid dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	570	Applied Linear Operators	Bounded linear and compact operators on Hilbert spaces. Linear integral equations, Fredholm and Hilbert-Schmidt theory, and approximate methods. Distributions. Completion of a course in Applied Analysis is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	575	Perturbation Methods Appl Math	Regular and singular perturbation methods for ordinary and partial differential equations. Boundary layer theory, matched asymptotic expansions, multiple-scale, homogenization, and WKB methods. Application to nonlinear oscillations, bifurcation and stability problems. Completion of a course in Differential Equations II or Partial Differential Equations in Engineering is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: APM 502 or MAE 502; Credit is allowed for only APM 575 or MAE 505
APM	576	Theory of PDE I	Existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	577	Theory of PDE II	Continuation of existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): APM 576

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APM	581	Geometry&Control of Dyn Sys 1	Manifolds, tangent and cotangent bundle, Lie theory, integrability and controllability, and feedback control. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	582	Geometry&Control of Dyn Sys 2	Variational principles, Euler-Lagrange equations, Hamiltonian systems, optimal control, connections and curvature. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP4	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARA	101	ASU: The Art Experience	Introduces the culture, challenges and opportunities of the School of Art. Addresses essentials for academic and personal success within the university.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	1		Credit is allowed for only ARA 101, 194 (ASU Art Experience) or HDA 194 (ASU Herberger Inst Experience)
ARA	110	Sculpture Safety	Introduces safety and environmental health in the sculpture studios. Pre- or corequisite for all sculpture classes.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	1		
ARA	195	Art in My World	Basic concepts and fundamental questions that provide insights into art making and that affect one's understanding and appreciation of art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARA	202	Understanding Photographs	Slide lecture course in understanding photography as a fine art form.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARA	240	Encounters with Art	Provides an open environment for dialogue and discovery of what it means to be a successful artist, and allows students to explore their own academic and career goals. Exposes students to new ideas and people, and familiarizes them with the School of Art and ASU resources designed specifically for them. Includes an intense focus on professional practices in the fine arts and provides the tools to help students succeed personally and professionally. An acknowledgment of ongoing rigorous studio practice plays a fundamental role in the course, and students expand their abilities to think critically and to communicate articulately about their own work and the work of others through in- and out-of-class projects, discussions and critiques that encourage consideration of their own work in the context of current opportunities and directions in the visual arts. In addition, students have the opportunity to engage with and learn from industry professionals.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ARA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		

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ARA	309	Photography Now	Explores contemporary practice through lectures, readings, exhibition visits, screenings and discussions. Explores work created within the past thirty years up to the present. Students act as a collective "ear to the ground" for the medium, engaging in first-hand experiences and research and being responsible to share those experiences with the class as active agents of discovery. Requires reading current periodicals, attending and discussing photographic lectures and exhibitions both in-class and beyond within the local community.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	311	Art Appreciation and Human Dev	Foundations of art for children and young adults. Emphasizes learning, development, and understanding art in historical and cultural contexts.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): non-ART student; ENG 101; ENG 102; minimum junior standing
ARA	330	Issues in Intermedia	Critical survey of recent theory and practice in "intermedia" art. Created specifically to provide a common historical and theoretical framework for students majoring in the intermedia area, as well as to anyone seeking to broaden his or her understanding of non-traditional media, performance, installation, computer art, video, social practice, Webart and interactivity and their relationship to contemporary society and discourse.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 216 or minimum 45 hours; Credit is allowed for only ARA 330 or ARA 494 (Issues in Intermedia) OR Visiting University Student
ARA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	396	Pro Practices for Design&Arts	Prepares young artists, designers and individuals in other creative fields to successfully enter the professional world of art and culture beyond the support system of the university. Through examining contemporary artists' models of practice and creative entrepreneurship; developing real life materials to promote their practice; engaging with guest artists, designers and other creative professionals; exploring best practices for arts-based businesses; and the array of continuing opportunities, student artists learn how they can shape their lives to sustain their artistic practice once they graduate. Best suited for students who are prepared to seriously contemplate the continuation of their specific practice beyond graduation. Students should enter this course with a collection of work samples that demonstrate their experience in their chosen discipline.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 56 hours; Credit is allowed for only ARA 396 or ARA 394 (Professional Practices for Artist) OR Visiting University Student
ARA	460	Gallery Exhibitions	Practical experience in all phases of department gallery operations and preparation of gallery publications.	N		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ARA 460 or 560
ARA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARA	489	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person and discussing them, and writing and revising their own pieces of criticism.	N		SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ARA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		
ARA	522	Studio Art Pedagogy	Principles of learning and instruction for teaching assistants assigned to foundation-level studio art courses and other grad-level students with an interest in studio art pedagogy.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARA 522 or ARA 598 (Principi-Core Art Instructio)
ARA	560	Gallery Exhibitions	Provides practical experience in all phases of art gallery operations. Students learn professional art gallery practices through hands-on experience in the School of Art Student Galleries including Harry Wood, Step, and Gallery 100. Class members assist BFA and MFA candidate students in many phases of exhibition preparation and execution as well as assist with the curation and design of group exhibitions.	N		LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARA 460, 560 or 598 (Gallery Exhibitions)
ARA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARA	589	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person, analyzing and discussing them, and writing and revising their own pieces of criticism.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or non-degree seeking). Credit is allowed for only ARA 489 or ARA 589 or ARA 598 (Writing Art & Design Criticism)
ARA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or non-degree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or non-degree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARB	101	Elementary Arabic I	For beginners who don't have any prior knowledge of Arabic. Introduces the basic skills of speaking, listening, reading and writing of Modern Standard Arabic (MSA) for the purpose of communicative goals. Arabic cultural knowledge is incorporated as it is an important element in real-life communication.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only ARB 101 or MSA 101
ARB	102	Elementary Arabic II	Reading, writing, speaking, and understanding basic Arabic.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 101 or MSA 101 with C or better; Credit is allowed for only ARB 102 or MSA 102 OR Visiting University Student
ARB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	201	Intermediate Arabic I	Starts with a review of the basics learned in previous coursework. Expands vocabulary and grammar structures. Addresses all four communication skills: reading, writing, listening and speaking in Modern Standard Arabic. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 102 or MSA 102 with C or better; Credit is allowed for only ARB 201 or MSA 201 OR Visiting University Student
ARB	202	Intermediate Arabic II	Expands vocabulary and grammar structures and continues to develop communicative skills in Modern Standard Arabic. Enables students to attain an advanced level of proficiency in all Arabic language skills: reading, writing, listening and speaking. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 201 or MSA 201 with C or better; Credit is allowed for only ARB 202 or MSA 202 OR Visiting University Student
ARB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	311	Advanced Arabic Skills I	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 with C or better OR Visiting University Student
ARB	315	Advanced Arabic Heritage	Provides an advanced ability to read, understand, write and communicate in Arabic. Covers important topics such as advanced descriptions of one's country, city, university, home and family. Also concentrates on studying advanced questions and answers in the present, past and future tenses. Uses the communicative approach in adopting different pedagogical approaches centered on the communicative method, such as group practice, role play and situational dialogues. Introduces and explains detailed and advanced knowledge of Arabic grammar, structures of Arabic sentences; and the deep connotations of important Arabic vocabulary. Emphasizes building up more vocabulary and grammatical knowledge for communication purposes, introducing cultural, intellectual, business and political contents and terminology in Arabic; and expressing in advanced Arabic one's daily activities, past life and futuristic plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only ARB 101 or ARB 102 or ARB 201 or ARB 202 or ARB 315 or ARB 394 (Advanced Arabic for Heritage Speakers I) or ARB 394 (Advanced Arabic for Heritage Speakers II) OR Visiting University Student
ARB	321	Arabic Conversation I	Emphasizes spoken Arabic and conversation skills. Simultaneously develops communicative skills, vocabulary, and cultural awareness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
ARB	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student

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ARB	335	Arabic Culture and Islam	Develops awareness of Arabic culture and Islam. Covers a variety of cultural topics, including family, status of women, food, music, and Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	
ARB	336	Introduction to the Qur'an	Introduces the Qur'an and examines the historical, contextual, religious and interpretive dimensions wherein the Qur'an developed. Deals with the structure of the Qur'an, the different sections, suras (Qur'anic chapters), and some of the verses. Also includes an introduction to the idea of revelation, its history, the content and some of the different themes of the Qur'an, and discusses aspects of the Qur'an as a source of law. Taught in English; requires no knowledge of Arabic or Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 336 or ARB 394 (Introduction to the Qur'an) OR Visiting University Student
ARB	337	Hadith and Prophetic Tradition	Considers the Hadith as a literary text and as the prophetic tradition in Islam. Focuses on the development of the Hadith as a vast subject in Arabic literature, its collection methodology, Hadith science, and its contents. Gives special attention to the relationship of the Hadith as the second source, after the Qur'an, of Islamic knowledge, Islamic theology, Islamic philosophy and Islamic law. Explores the various ways and approaches in which Muslims employ the Hadith along with the Qur'an in their search for meaning, identity and knowledge. All readings are in English; requires no prior knowledge of Arabic language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 337 or ARB 394 (Arabic Hadith and Prophetic Tradition) OR Visiting University Student
ARB	340	Arabic Translation	Covers the fundamentals of English-Arabic and Arabic-English translation including basic techniques of translation through exploring the essential theories and concepts adopted in the process of translation. Also addresses the areas of difficulty aroused during the process of translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 311 with C or better; ARB 321 with C or better; Credit is allowed for only ARB 340 or ARB 394 (Introduction to Arabic Translation)
ARB	341	Quran Text and Women	Addresses Muslim women scholars' argument that it is not the religion but the patriarchal interpretation of the Quran that have kept Muslim women oppressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	
ARB	351	Classical Arabic Literature	Provides a survey in classical Arabic literature. Focuses on the development of classical Arabic poetry and prose since their interceptions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
ARB	352	Modern Arabic Lit/Trans	Surveys the major trends, themes and genres of modern Arabic literature in translation. Provides a foundational knowledge of modern literature in the Arabic language. Focuses on continuity and change, cultural diversity and multiplicity in the Middle East, and the social, religious and historical aspects of modern Arab culture. No knowledge of Arabic language is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; Credit is allowed for only ARB 352 or ARB 394 (Introduction to Modern Arabic Literature)
ARB	360	Islamic Philosophical Lit	Covers the most important Muslim philosophers and their contributions to philosophy. Concentrates on presenting and analyzing the main Islamic theories in philosophy, such as the different theories of creation, the role of reason and rationalism versus traditionalism. In addition, provides detailed information about the Islamic philosophical theories of language and meaning, and how these theories influenced the development of many distinct philosophical and literary works in the Arab-Islamic world. Also portrays Arabic language as a philosopher which provides philosophical definitions and analyses of many important concepts. Some of the famous philosophers which this course covers are the following: Al-Farabi, Ibn Sina, Al-Ghazali and Ibn Rushd. Those philosophers and their theories are still highly influential today in the Arab-Islamic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 360 or ARB 394 (Islamic Philosophy)
ARB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	411	Advanced Arabic Skills II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ARB 311 with C or better
ARB	421	Arabic Conversation II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		

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ARB	422	Advanced Arabic Media	Advanced language course designed to improve students' reading, writing, listening, speaking and debating skills. Exposes students to Arabic language used in the media. Incorporates news items from print and electronic media sources, including print and online news articles, television news and YouTube videos, among other materials. The purpose of using many sources is to enable the students to have an advanced experience reading diverse media materials.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ARB 422 or ARB 494 (Advanced Arabic Media [in Arabic]) or ARB 494 (Advanced Arabic Media)
ARB	427	Arabic Prose	Surveys Arabic prose treasures such as Maqama, Hikaya, Khabar, Risala and Drama. Pays particular attention to the collection of folklore tales known as The Arabian Nights (The Thousand and One Nights), using them as one of the most fascinating "world" texts, loaded with fairy tales, fables, romances, farces, legends and folk stories.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 or 315 with C or better; Credit is allowed for only ARB 427 or ARB 494 (Modern Arabic Prose)
ARB	428	Arab Women's Writing	Offers a survey of Middle Eastern women's literary work in English translation. Themes focus on a comprehensive view of women's writing through several lenses, including: gender, religion and socio-political systems to introduce women's writing in modern Arabic literature through the prisms of Arabic literary criticism and feminist theory within historical contexts. Explores different genres, including autobiographical, short stories and novels, and cinematic production. Selective literary texts include leading 20th-century female writers whose works in translation represent a wide range of geographical, ideological and cultural influence. Featured writers include Rajaa al Sania, Latifa Zayyat, Radwa Ashur, Hanan al-Shaykh, Nawal Al Sadawi and others.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 428 or ARB 494 (Arab Women Writing Across Generations/ in Eng) or SLC 428 or SLC 494 (Arab Women Writing Across Generations/ in Eng) OR Visiting University Student
ARB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ARB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ARB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ARB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	101	Architecture Project I	Project-based studio to introduce beginning concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project. Introduces and guides students through an iterative design process leading to a public exhibition of their work.	Y		STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	102	Architecture Project II	Project-based studio to enhance beginning concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project. Introduces and guides students through an iterative design process leading to a public exhibition of their work.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	111	Architecture of Architecture I	Introduces the nature of architecture. Students work individually and collectively to document the built environment that surrounds us all, developing new ways of seeing and thinking and documenting their discoveries in a wiki.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	112	Architecture of Architecture II	Introduces the history and discourse of global architecture. Students work individually and collectively to document the built environment that has shaped our collective histories, developing new ways of seeing and thinking and documenting their discoveries in a wiki.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		

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ARC	201	Architecture Project III	Project-based studio to develop models of architectural thinking. Students work collaboratively and individually on a semester-long design project, developing an iterative design process leading to a public exhibition of their work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	202	Architecture Project IV	Project-based studio to further develop concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, developing an iterative design process leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	301	Architecture Project V	Project-based studio to master concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, mastering an iterative design process leading to a public exhibition of work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	302	Architecture Project VI	Project-based studio to master concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, mastering an iterative design process leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	351	Architecture of Collaboration	Covers models of collaboration. Students learn tactics and strategies to work in teams and to collaborate on projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	352	Architecture of Leadership	Covers models of leadership. Students learn tactics and strategies to work in teams and to collaborate on projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	353	Architecture of Presentation	Covers models of oral and written communication. Students learn tactics and strategies to present their work.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	401	Architecture Studio I	Project-based studio introducing an iterative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	402	Architecture Studio II	Project-based studio further enhancing the iterative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): ARC 401 with C or better OR Visiting University Student
ARC	421	Architecture Technology I	Covers conventions in architectural technology. First principles of structural forces and thermodynamics. Material and methods of construction.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	422	Architecture Technology II	Covers conventions of building systems in architectural technology, including integration of construction, tectonics and energy systems.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	432	Architecture History	Survey of global history and theory of architecture and design spanning a chronological period from prehistory to the 17th century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	441	Architecture Representation	Covers the history and conventions of architectural drawings, models, diagrams and other forms of representation. Applies contemporary techniques and tools to representation architectural works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): minimum 56 hours; Pre- or corequisite(s): ARC 301
ARC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ARC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ARC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-7		
ARC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	501	Advanced Architecture Studio I	Project-based studio introducing an integrative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student
ARC	502	Adv Architecture Studio II	Project-based studio further enhancing the integrative design process. Students work individually and collectively on a semester-long design project, developing their understanding leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 501 with C or better
ARC	522	Adv Architecture Technology I	Covers integration of building systems and regulations in applied architectural technology. Project-based synthesis of building construction, tectonics and energy systems.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student

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ARC	531	Advanced Architecture History	Survey of global history and theory of architecture and design spanning a chronological period from the 17th century to present.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	532	Architectural Theory I	Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	541	Adv Arch Representation	Explores and analyzes advancing techniques in architectural drawings, models, animation, virtual and augmented reality.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y		SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y		LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	601	Adv Architecture Studio III	Design problems emphasizing advancement of the discipline of architecture through topical research in conjunction with faculty.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 502 with C or better
ARC	602	Adv Architecture Studio IV	Individual, student-initiated project reflecting a culminating synthesis of architectural ideas.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 601 with C or better
ARC	621	Adv Architecture Technology II	Advancing innovations in architectural technology. Research-based explorations focused on emerging developments in building construction, tectonics and comfort systems.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	632	Architectural Theory II	Advanced architectural theory course that explores contemporary topics.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	651	Architecture Research	Critical examination and implementation of architectural research methods--historical, qualitative, simulation and modeling, case study, experimental, correlational, logic and argumentation.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	662	Architecture Practice	Critical examination of organizational modes and missions of contemporary architectural practice, including the business of architecture, stakeholders, ethics, and legal and professional responsibilities.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	250	Teaching Inquiry in Art	Issues in teaching and learning through directed, guided, and independent inquiry about artworks and through art making.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102; 6 hours (2 classes) from ART 111, 112, 113, or 115 with C or better OR Visiting University Student

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ARE	301	Studio Art & Human Development	Study of human development in studio art from early childhood to adult years.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARE	370	Teaching Visual Culture	Explores issues and applications of everyday aesthetics that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) with C or better: BA or BFA Art major: ARE 250 OR BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor: ARS 101 or ARS 102; ART 110; ART 112 (or ART 113, 115 or 116) OR Visiting University Student
ARE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	446	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARE 446 or ARE 494 (Multicultural Issues in Art Education) or ARE 546 or ARE 598 (Multicultural Art Education) OR Visiting University Student
ARE	482	Teaching Art Processes	Art traditions of the 20th century as a basis for studio and art history instruction. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Fine Arts Art student
ARE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARE	486	Art Education:Strategies/Appls	Implementation and evaluation of art instruction for K-12 population. Includes teaching of Saturday classes in the Children's Art Workshop. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ARE 482 with C or better OR Visiting University Student
ARE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	496	Methods/Assess/Learning in Art	Individual or group research on the assessment of art learning incorporating theory and practice. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ARE 250 with B- or better
ARE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 90 hours
ARE	510	Visual Culture Research	Research on instruction of everyday aesthetics and related issues that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	520	Issues/Teaching Inquiry in Art	Issues in teaching and learning focused both on inquiry about artworks and on inquiry through art making.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	525	Research on Art Instruction	Research methods and assessment of learning in art. Pilot studies on the effects of instruction on learning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	530	Issues in Teaching Studio Art	Critical examination of issues concerning teaching multicultural art to different populations of students. Historical and philosophical foundations reviewed. Recommended to be taken before ARE 535.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	535	Research/Teaching Studio Art	Review of empirical and historical research methods, learning theory, and assessment of learning in studio art, including developmental studies and their limitations. Pilot studies on the effects of instruction upon learning. Recommended to be taken after ARE 530.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	540	Teaching Art/Cultural Contexts	Relationship of multicultural perspectives to teaching/learning art criticism, aesthetics, studio art, and art history.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARE	546	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores and analyzes international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only ARE 446, 494 (Multicultural Issues in Art Education), 546 or 598 (Multicultural Art Education)
ARE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARP	451	Architecture Field Studies	Organized field study of architecture in specified national and international locations. Credit/no credit. May be repeated for credit with director approval.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6		
ARP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): ADE 322 with C or better; Corequisite(s): ADE 421
ARP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Master of Architecture student; ADE 522 with a C or better
ARP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
ARS	100	Introduction to Art	Provides an introduction to the understanding and enjoyment of art through the study of painting, sculpture, design, photography, and the decorative arts. Students gain an awareness of meaning, functions, and significance of art, while learning an art-related vocabulary and a set of analytical tools for discussing and understanding art from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	101	Art-Prehistory thru Middle Age	History of Western art from the Paleolithic period through the Middle Ages.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	102	Art Renaissance to Modernism	History of Western art from the Renaissance to 20th-century modernism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	201	Art of Asia	History of the art of the Asian cultures, with emphasis on China, Japan, and India. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	202	Art of Africa/Oceania/Americas	History of art of Africa, Oceania, and the New World. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	250	History of Photography	History of photography from the 19th century to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	300	Introduction to Art	Parallels ARS 100 course content but requires a higher level of accomplishment and comprehension. Introduces visual culture, the purpose of art, and the relationship between art and visual culture. Students learn how visual culture pervades our everyday lives and how understanding visual literacy can help us participate more fully in the world around us.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; minimum 2.00 GPA; minimum 55 hours; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	310	The Renaissance in Tuscany	Course taught in Florence, Italy. History of arts in Tuscany with focus on city of Florence from 14th through 16th centuries. Completion of ARS 101 and 102 suggested.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARS	330	The Portrait	Examines the history and production of portraits in contexts of social hierarchies, historical events, gender, politics, class, morality and aesthetics with a focus on the 15th to the 21st centuries in painting, sculpture and photography.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): one 100-level course in APH, ARS, ASB, ENG, FMS, HST, MHL, MUS or SLC with B- or better; Credit is allowed for only ARS 330 or ARS 394 (Genre: Portraits) OR Visiting University Student
ARS	340	Art in America	American art from colonial times through the Second World War. Not available to students who have completed ARS 542.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major; ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration: ARS 101 with C or better; Credit is allowed for only ARS 340 or ARS 542

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ARS	345	Art and Television	Critical introduction to the interrelation of technology and visual art using the tools of art history and media/cultural studies. Students read theorists of the relation between visual art and the mass media, and use them to analyze early presentations of visual art and art history on television of the 1960s and 1970s. Examines the contemporaneous and parallel development of video art—an artistic medium appropriated from television technology—through the study of key video artworks.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 earned hours
ARS	350	Museums: Meaning and Function	Exposes the broad scope of what museums do by exploring their history and the critical issues they face today. Acquaints students with the historical and contemporary function of museums and the concepts they currently engage with, such as authorship, authenticity, identity, education, interpretation, storytelling, technology, ethics, cultural heritage, public engagement and diversity. Enhances reading materials with talks by museum professionals, films and discussion boards.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 350 or ARS 394 (Introduction to Museums) OR Visiting University Student
ARS	362	Survey of Aztec/Maya/Inka Art	Art history of the Aztecs, Maya, Inka and their ancestors before the arrival of Europeans. Covers their prolific artistic production starting with their earthworks in the deserts of Peru and ending with their stone pyramids and painted codices of Guatemala and Mexico. Meets non-Western Art History Requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 45 hours
ARS	369	Mexican Art	Critically examines how Mexico and its people have represented themselves and been represented by others from ancient times to the 20th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 369 (ARS 469) or ARS 394 (Mexican Art) OR Visiting University Student
ARS	370	The Art of the Comic	Examines popular culture art forms of comics, comic books and graphic novels as they relate to the art of the west as well as their greater global context. Explores the various genres of comics and investigates a variety of themes found in comics, including war, gender construction, and the impact of globalization on western culture and society. Students become familiar with some of the most important comic artists, and the studio processes for the creation of comics. Concludes with an investigation of the impact of comic art on fine art around the world and on live-action films.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 370 or ARS 394 (The Art of the Comic)
ARS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	402	Art of Ancient Egypt	Aesthetic, philosophical, and cultural basis of Egyptian art from pre-Dynastic period through New Kingdom. Emphasis on sculpture and architectural monuments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 or 102 with C or better; Credit is allowed for only ARS 402 or ARS 502 OR Visiting University Student
ARS	403	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)
ARS	404	Greek Art	History of art, architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 with C or better; Credit is allowed for only ARS 404 or ARS 504
ARS	406	Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major; ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration: ARS 101 with C or better
ARS	414	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 414 or ARS 514
ARS	418	German Renaissance Reformation	Graphics, painting, sculpture, and architecture, ca. 1450-1550. Reformation themes and Renaissance style considered within religious, political, social, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): ARS 101 or ARS 102 OR any 200-level or higher course in ASB, ENG, FRE, GER, HST, ITA or REL with B- or better; Credit is allowed for only ARS 418 or ARS 598 (German Renaissance and Reformation Art)
ARS	422	Italian High Renaissance Art	History of Italian art during the 16th century, including the achievements and influence of Leonardo da Vinci, Raphael, and Michelangelo.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 422 or 522
ARS	424	Italian Baroque Art	Italian painting, sculpture, and architecture of the 17th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Pre-requisites: ARS 101; ARS 102

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ARS	434	Revolution to Impressionism	Between 1770 and 1900, a period called the long 19th century, Europeans experienced rapid and extensive changes in politics, culture, social and economic structures, scientific methods, and technology. The Industrial and French Revolutions reflected rapid developments rooted in the 16th-17th century Scientific Revolution and rising nationhood. Considers how in this period European art reflected and shaped historical events in content, style, representational strategies and new roles for art and artists.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): any 200-level course or higher in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 434 or ARS 534
ARS	435	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	438	Art of the 20th Century I	Developments and directions in art between 1900 and World War II.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 with B- or better or one course in ARS, ENG or HST at 200 level or higher with B or better OR Visiting University Student
ARS	439	Art of the 20th Century II	Art since World War II, with consideration of new concepts and experimentation with media and modes of presentation.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 or 438 with B- or better; Credit is allowed for only ARS 439 or ARS 539
ARS	440	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
ARS	441	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Also considers historical precedents, including Civil War monuments and the City Beautiful Movement.	N		SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	442	Critical Issues in Am Painting	Explores issues of national identity and western expansion, Manifest Destiny, through images of race and violence in western American painting from 1800 to the early 20th century. Includes "claiming and settling the wilderness," cultures in conflict, the cowboy, and visions of an enchanted land.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 442 or 542
ARS	443	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430
ARS	444	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
ARS	445	History of Animation	Covers popular art forms of animated films as they relate to the art of the west as well as their greater global context. Begins with a brief look at the importance of storytelling in human culture before turning to the roots of animation; the invention of moving animated pictures in the early 20th century; the rise of major animation studios like Walt Disney, Fleischer Studios and Warner Bros.; television animation; foreign animation classics; and the recent work of independent animators. Students become familiar with some of the most important animation directors and the studio processors for the creation of animated films. Concludes with an investigation of the impact of animation on fine art and live-action films.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 445 or ARS 494 (History of Animation)

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ARS	456	Intro to Museums	Broad scope of what museums do by exploring their history and the critical issues they face. Acquaints students with the basic functions of specific museum departments and staff, including the role of director, curator, registrar, preparator, as well as fund raising, marketing, audience development, education, exhibitions, conservation, ethics, cultural/heritage tourism and public art. Guest speakers and field trips enhance classroom material.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or ARS 102 OR any 200-, 300- or 400-level course in ASB, ENG or HST with B- or better
ARS	460	Art Now	Critical overview of major issues and controversies of the last 10 years within the global, national, and local art scene.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102 with B- or better or one course in ARS, ENG, or HST at the 200 level or higher with B or better, OR Digital Culture major
ARS	465	Native Art of North America	Native American art forms of the United States and Canada from prehistoric times to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & C & H	Prerequisite(s): minimum 45 hours; minimum 2.00 GPA; Credit is allowed for only ARS 465 or ARS 565 OR Visiting University Student
ARS	472	Art of China	Study of major forms in Chinese art: ritual bronze, sculpture, ceramic, calligraphy, painting, and architecture. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 50 hours; minimum 2.00 GPA OR Visiting University Student
ARS	473	Art of Japan	Japanese art from the Joman period to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 55 hours; Credit is allowed for only ARS 473 or ARS 574 OR Visiting University Student
ARS	475	Chinese Painting	From Ku K'ai-chin to Ch'i Pai-shih. Major artists, styles, and movements in Chinese painting. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 475 or 575
ARS	480	Research Methods	Methodology and resource material for art historical research. Techniques of scholarly and critical writing and evaluation of bibliographic sources.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): Art (Museum Studies) BA or Art (Art History) BA major; ARS 101 with C or better; ARS 102 with C or better; ENG 101, 105, or 107 with C or better; minimum 56 hours OR Visiting University Student
ARS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARS	485	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): ARS 101; ARS 102; ENG 101, 105, or 107 with C or better; Credit is allowed for only ARS 485 or ARS 585 OR Visiting University Student
ARS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ARS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Pre-requisite: Minimum 90 hours
ARS	501	Methodologies and Art History	History of the discipline and an exploration of various methodologies, critical theory, and bibliographies used by art historians.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	502	Critical Studies/Egyptian Art	Egyptian art from pre-Dynastic to New Kingdom periods. Focus on aesthetic, philosophical, and cultural contexts. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 402 or 502
ARS	503	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)

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ARS	504	Critical Approach to Greek Art	Art and architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 404 or 504
ARS	506	Critical Studies in Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire. Research paper and/or supplemental readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	514	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 414 or ARS 514
ARS	533	The Pre-Raphaelites	Explores Pre-Raphaelite culture, both literature and art, and relevant social history, from the Pre-Raphaelite Brotherhood through Aestheticism and early twentieth century, focusing on interactions between images and texts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	534	Art & Visual Culture/19th Cent	Critical study of visual arts using primary source material from mid-19th century to WWI within philosophical, socioeconomic, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 434 or 534
ARS	538	Art of the 20th Century I	Charts how the avant-garde in the early 20th century developed different strands of modern art as it sometimes grew closer to, and at other times veered away from, radical politics.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 438, 538 or 598 (Art of 20th Century I)
ARS	539	Art of the 20th Cent. II	General introduction to major trends and issues of Euro-American art created between 1955 to around the turn of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for either ARS 439 or ARS 539 or ARS 598, Art of 20th C
ARS	540	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critiques stereotypes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
ARS	541	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Considers historical precedents including Civil War monuments and the City Beautiful Movement.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)
ARS	544	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking). Credit is allowed for only ARS 444, ARS 544, ARS 598 (Films of India) or FMS 426
ARS	574	Studies in Japanese Art	Critical examination of the nature and history of Japanese art, its rich heritage and its indebtedness to foreign sources.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 473 or 574
ARS	575	Approaches to Chinese Painting	Critical history of Chinese painting from Eastern Chou to 1911. Emphasis on masters, regional developments, and conceptual underpinnings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Minimum 108 hours; Senior or Postbaccalaureate Undergraduate or Graduate; Credit is allowed for only ARS 475 or 575
ARS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	585	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 485 or 585

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ARS	586	Theories of Contemporary Art	Upper-level introduction to a variety of issues in contemporary art theory. Over the course of the semester, students travel through a different thematic segment each week. Topics covered include globalization, activism, relational aesthetics, art and ecology, as well as other themes that have found increased relevance as new art forms, media and theory proliferate in the 21st century.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 586 or ARS 591 (Theories of Contemporary Art)
ARS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	710	Current Research in Art Histor	Review and critical evaluation of contemporary literature and research in art history.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Design, Environment and the Arts PhD student
ARS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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ARS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	110	Drawing as Seeing and Thinking	Immerses students from a broad range of non-art disciplines in the practice of drawing. Considers and reflects on drawing in its most expanded form: as a primary tool of communication and creative problem solving, as movement, as sensory experience and as its own unique method of cognition. Divides class meetings among lectures, exercises, field excursions and opportunities for critical dialogue. Students leave with an appreciation of the unique power of mark-making and an improved understanding of its application in their lives.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Credit is allowed for only ART 110 or 194 (Drawing as Seeing and Thinking) OR Visiting University Student
ART	111	Foundation Drawing	Fundamental, technical, and perceptual skills using common drawing media and their application to pictorial organization. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art BA major or BFA major OR Visiting University Student
ART	112	2-D Design	Fundamentals of pictorial design. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art, Art-Exploratory, Minor in Studio Art, or BIS concentration in Studio Art student OR Visiting University Student
ART	113	Color	Principles of color theory as related to the visual arts. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	115	3-D Design	Fundamentals of 3-D form. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	116	Intro to Digital Media	Concentrates on the fundamentals of digital media, including imagery, sound, video, animation, and the Web. Assignments are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques and software as they become familiar with contemporary artistic processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 116 or ART 194 (Introduction to Digital Media) OR Visiting University Student
ART	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	201	Photography I	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ART	202	Photography I Lab	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	0		Corequisite(s): ART 201
ART	204	Photography II: Black & White	Photography as an art medium with additional exploration into personal photographic aesthetics. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	205	Photography II: Color	Uses both film and digital capture to explore color photography in depth. Emphasizes computer editing and printing.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	206	Digital Photography I	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of photography as a form of creative expression. With an emphasis on the student's own creative practice, covers technical, aesthetic and conceptual aspects of photography and explores how meaning is created in a photograph. Introduces basic digital editing, camera controls, selection and sequencing. Assignments cover traditional genres such as landscape, portrait and still life. Places a strong emphasis on interaction with classmates' work and receptivity to critique. Fully manual DSLR is suggested but not required for this course.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 206 or ART 294 (The Still Image in Digital Culture) OR Visiting University Student

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ART	207	Digital Photography II	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of digital photography as a form of creative expression. With an emphasis on the student's own creative practice, explores the ways in which the recently increased speed of creation and dissemination have led to the ubiquity of photography and how these aspects have radically altered how photographs function in today's world. Covers technical, aesthetic and conceptual aspects of digital photography and explores how meaning is created in a digital photograph. Students learn digital editing, camera controls, file formats, workflow and explores media theory in relation to digital imaging technology. Assignments cover topics such as appropriation, social media, surveillance, vernacular and ritual photography. Places a strong emphasis on interaction with classmates' work and receptivity to critique.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ART	211	Drawing	Continued development of technical and perceptual skills. Emphasizes materials and pictorial content. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	214	Figure Drawing	Development of skill and expressiveness in drawing the basic form, construction, and gesture from the human figure. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	216	Contemporary Art in Practice	Investigates multidisciplinary practices of making art within a contemporary context. Encourages students to explore various methods of artmaking with emphasis on understanding that materials and actions hold meaning. Relying on principles and techniques from foundation-level classes, students learn to choose appropriate media for a particular idea and construct work that is concept driven and incorporates cross-disciplinary approaches. Students develop individual and diverse approaches to fusing traditional art disciplines with experimental, performative, spatial and digital technologies if desired.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre- or corequisite(s): Digital Culture (Art) major; ART 111, 112 or 113 with C or better OR ART 113 or 116 with a C or better; complete two from ART 111, 112 or 113 with C or better OR Visiting University Student
ART	217	Intro to Computer Animation	Prepares students for the exciting world of digital animation. Looks back at animation through history and how it has developed into what we understand today. Looks at history, theory, principles, practices and animation techniques. Expands the student's current knowledge of 3D digital animation and how it has changed and affected society through time. Students use learned techniques to create art in animation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 217 or ART 294 (Introduction to Animation) OR Visiting University Student
ART	218	3D Tools	Introduces 3D data capture, 3D modeling and rendering, and 3D prototyping and fabrication through creative/research activities using CNC and rapid prototyping tools. Projects are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques, software tools, and hardware in the course of making their creative/research projects, becoming familiar with contemporary artistic and engineering processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 218 or 294 (3D Tools)
ART	223	Painting	Fundamental concepts and materials of traditional and experimental painting media. Emphasizes preparation of painting supports, composition, and color. Lab. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	227	Watercolor	Fundamental concepts, materials, and techniques of watercolor. Emphasizes problem solving, basic skills, composition, and color. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	231	Sculpture I	Explores sculptural forms through concepts related to basic materials. Students learn how to create original sculptures using mold-making, wood-working and sheet metal construction. Focuses on studio production, safety, aesthetic criticism and history of sculpture. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		

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ART	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
ART	253	Introduction to Printmaking	Introduces basic monotype, intaglio, relief, and related techniques.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 113 with C or better OR Visiting University Student
ART	261	Ceramic Survey	Handforming methods, throwing on the wheel, decorative processes, and glaze application. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 112 with C or better; ART 115 with C or better OR non-Art major; minimum 45 hours OR Visiting University Student
ART	272	Intro to Metals and Jewelry	Emphasizes metal fabrication. Basic techniques of cutting, piercing, forging, soldering, and forming of non-ferrous metals.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; maximum junior standing; ART 112 with C or better; ART 115 with C or better OR Visiting University Student
ART	274	Wood I	Fundamental woodworking techniques to produce creative functional 3-D objects. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	276	Introduction to Textiles	Explores traditional and contemporary materials and basic techniques related to fibers. Embroidery, feltmaking, dyeing, block printing, plating, 3-D structures.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	300	Narrative/Non-Narrative	Explores how structure in images can be created both within the image (by setting up a picture) and by sequencing images that may or may not have had any relation when they were created. By exploring two prevalent ways in which images function in the art world--the directoral mode and sequencing mode--students gain valuable tools in terms of understanding how to construct meaning with their images. Emphasizes creating cohesive and complete sequences both narrative and non-narrative.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207
ART	301	Alternative Processes I	Recognition Alternative Processes of the inherent characteristics of nonsilver processes and their use in communicating ideas. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major with completed portfolio; ART 204 with C or better OR Visiting University Student
ART	302	Digital Photo and Video	Through screenings, readings, discussion and practical assignments, explores the differences between the still and the moving image coming from the perspective of a still photographer. How does the addition of time, sound and movement affect the way we experience images? How have the histories of photography and cinema overlapped and how are they different? How does the fact that video and film are no longer prohibitively expensive for most people affect the approach that people take to creating videos? How can photographers make engaging video using their photo skills? Looking at practitioners and learning basic video editing tools--as well as various methods for output--students create video and still images with an understanding of the intersections, variations and potential of the similar yet markedly different languages of film, video and still photography.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207
ART	304	Junior Photographic Projects	Interpretation and manipulation of light as a tool in the performance of expressive photography. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with completed portfolio; ART 204 with C or better; ART 101 with C or better; ART 201 with C or better
ART	307	View Camera	View camera and darkroom techniques.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better

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ART	308	2D Digital Animation	Technical, conceptual and aesthetic world of 2D digital animation as a fine art and influential form of visual culture. Explores craft and technique in detail as well as principles of narrative and non-narrative, mise-en-scène, mood and affect, and visual rhythm and sound. Through assignments, tutorials, lectures, discussions and critiques, students expand their understanding of how their projects relate to histories of animated cinema, live action cinema, games, AR and VR, mobile media, and the visual arts at large. Students gain confidence using a range of 2D digital animation software. If interested in traditional hand-drawn and/or hand-manipulated puppet animation, students are encouraged to pursue these tools but these techniques will not be covered in class. The goal is for students to produce well-crafted, expressive and intelligent animations and to contribute to larger cultural conversations about 2D digital animation as a cinematic and artistic genre.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 308 or ART 394 (2-D Computer Animation) OR Visiting University Student
ART	311	Intermediate Drawing	Emphasizes composition and exploration of drawing media.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 211 with C or better OR Visiting University Student
ART	312	Illustration	For the purposes of this class, to illustrate means to illuminate. The prompts challenge students to engage in storytelling and explore text/image relationships while simultaneously honing basic rendering skills. At times we find images to "illuminate," enhance or subvert the meaning of written language and at other times we create language as a result of creating an image. The interplay between text and images is a constant in this class.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is only allowed for ART 312 or ART 394 (Illustration) OR Visiting University Student
ART	314	Intermediate Figure Drawing	Drawing from the model with greater reference to structural, graphic, and compositional concerns. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 394 (Figure Drawing for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	317	Advanced Digital Photography	Builds on the skills and conceptual underpinnings of previous coursework and is the final course in the required photo foundation for the Digital Photography BFA. Students build on their understanding of photography in relation to the technical, aesthetic and conceptual aspects of photography. Requires students to create a short video and create physical objects, including printed photographs and a book. Places a strong emphasis on idea development, interaction with classmates' work and receptivity to critique.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206 or 207 OR Visiting University Student
ART	323	Intermediate Painting	Development of competency in skills and expression. Assigned problems involve light, space, color, form, and content. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 223 or 394 (Painting for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	325	Figure Painting	The human figure clothed and nude as the subject for painting in selected media.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 223 with C or better OR Visiting University Student
ART	327	Intermediate Watercolor	Explorations of personal expression in watercolor. Continued development of watercolor skills using traditional and experimental materials and techniques. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 227 or 394 (Watercolor for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	331	Sculpture II	Emphasizes metal fabrication as an expressive sculptural process. Techniques in welding, cutting and bending of metals and their aesthetics. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art BIS major or Studio Art minor; ART 110 with C or better; ART 115 with C or better OR Pre-corequisite(s): Art BA or BFA major; ART 231 with C or better if completed OR Visiting University Student
ART	332	Sculpture III	Explores diverse media with a focus on mold-making processes. Development of the sculpture portfolio. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 with C or better
ART	333	Foundry Casting Methods	Fine art and techniques of metal casting: mold making, foundry safety, finishing techniques, application of patinas, and history of casting. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better OR Visiting University Student
ART	345	Visualization & Prototyping	Studio/seminar introduces concepts of computer visualization, modeling, and rapid prototyping in an interdisciplinary manner.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Digital Art OR Intermedia student
ART	346	3-D Computer Imag & Animation	Focuses on the modeling, texturing, surfacing, lighting and rendering portions of the 3-D animation pipeline. Covers poly modeling, sculpting, edge flow, UV texturing, materials and PBR workflows, properties of lighting, and efficient rendering techniques.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	CS	Prerequisite(s): Film and Media Production BFA major or ART 217 with C or better OR Visiting University Student

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ART	348	Animation Motion Studies	Focuses on using the principles of animation in 3-D and open source, pre-rigged characters for animation and dialog studies. Course studio format follows similar industry standard of dailies for frequent feedback and to encourage progress.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Film and Media Production BFA major or ART 346 with C or better OR Visiting University Student
ART	351	Intaglio I	Introduces concepts and techniques of intaglio processes, including non-acid and acid techniques such as drypoint, line etch, aquatint, photo etching; introduces multiple plate printing ala poupee wiping, chine colle, and basic color. Idea-generating exercises include visual signifiers of identity, democratic multiple, time and space, the disembodied gaze, and reconsidering beauty. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better
ART	352	Lithography I	Monochromatic and color planographic printmaking utilizing stone and aluminum plate processes. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better, or Studio Art Minor: ART 110 with C or better; ART 112 or 113 with C or better
ART	354	Screen Printing I	Introduces paper, direct, and photographic stencil techniques. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; two from ART 111, 112, 113 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better OR Visiting University Student
ART	360	Ceramic Throwing	Design analysis and production of functional pottery. Emphasis on throwing techniques, surface enrichment, and glaze application.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	364	Ceramic Handbuilding I	Search for form using handbuilding techniques. Kiln firing and related problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	365	Ceramic Handbuilding II	Continuation of ART 364 with an additional focus on large-scale works, surface treatments, and glaze decoration with related kiln firing applications.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; ART 364 with C or better OR BIS Studio Art student or Studio Art student; ART 364 with C or better OR Visiting University Student
ART	367	Ceramic Vessels	Focuses on the exploration and creation of ceramic vessel forms utilizing a variety of technical approaches. Students develop a personal direction through guided assignments focusing on both historical/contemporary vessels, function vs. design, and various forming processes. Students should have previous experience with either wheel-throwing or hand-building techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 367 or ART 394 (Ceramic Vessels)
ART	372	Casting and Jewelry Techniques	Covers lost wax casting for jewelry scale work and alternative casting methods and mold making as well as other techniques such as chain making and marriage of metals.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better
ART	373	Form Emphasis in Metals	Covers forming non-ferrous metals using techniques such as anticlastic and sinclastic forming, raising, fold forming. Projects focus on hollow forms using these various techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better
ART	374	Wood II	Individual and directed problems in wood related to the production of unique functional art objects. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better OR Visiting University Student
ART	376	Weaving and Dyeing	Focuses on loom-controlled woven structures in conjunction with a variety of dye techniques. In the investigation of these new practices, an emphasis is placed on technical issues, historical trajectories and contemporary contexts.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 276 with C or better OR Fashion BA major; FSH 201 with C or better OR All other majors: ART 110, 112, 113, 115, or 116 with C or better OR Visiting University Student
ART	377	Textile Design	Explores a variety of surface design processes such as sewing, embroidery, dyeing and interlacing, as well as the construction of collage, piece work and creatively fabricates sculptural forms with their newly soft design materials.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276 with C or better or FSH 201 with C or better OR Visiting University Student
ART	378	Dig Text	Starting in the 19th century with advent of the Jacquard loom, which is often noted as the inspiration for the modern day computer, explores the interwoven history and practice of textiles and technology. Taking theoretical and practical approaches, works through textile techniques, such as knitting, printing and wearables, as well as research and readings. Emphasizes applying the information presented to support individual bodies of work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) C or better: ART 110 or 111; ART 112, 113, 115, or 116; min 2.00 GPA OR Dig Cult stndt; AME 111; AME 112 or 130; min 2.00 GPA OR Fashion maj; FSH 201; Credit for only ART 378 or 394 (Digital Textiles) OR Visiting University Student
ART	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		

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ART	400	The Photobook	Photographers have long seen the photobook as an excellent way to showcase their work. From the mid 1960s art photographers have used self-publishing through methods as simple as a photocopier to disseminate their work. Recent advances in the accessibility of high-quality reproduction capacities have resulted in an explosion of flexible and creative ways for photographers to execute their ideas and contribute to a wide range of conversations. Practical and theoretical course on the photobook. Students learn about the history of the photobook and the multitude of contemporary applications from the major photography publishers such as Aperture, through to the small press and self-publishing and the exciting world of art book fairs. Students also create a handmade photobook and create and order a print-to-order book of their own work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	402	Traditional Genres in Photo	Through practical assignments, lectures, readings, discussion and critique, investigates traditional photographic genres such as portrait and landscape. Students create works in the genre in question and contextualize these images in historical and contemporary art. Addresses such questions as what defines a genre and the social, political and cultural impacts these genres have had on photography and art. Also addresses how genres have been transformed with the advent of digital technology explores how this affects images in a broader cultural and social history. Emphasizes the students' work and a final portfolio of portraits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	403	Senior Photographic Projects	Technical and philosophical refinement of personal aesthetic with various photographic media. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better
ART	404	Portraiture Photography	Photographing people. Critical discussions and slide lectures on issues in portraiture. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better OR Visiting University Student
ART	406	New Genres in Digital Photo	Explores the ways in which contemporary technology and the key changes--ubiquity, speed and reproducibility--have spawned new genres in photo-based art. Explores these emerging and changeable genres and examines the potential they present for creative expression and in-depth conversation about new ideas. Defines these new genres: selfie sticks, Instagram, screenshots from Google Streetview or remote cameras that we control from our home computer. Students are given weekly assignments and at the end of the course create a project within one of the new genres.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	407	Digital Photography Capstone	Culminating class of the online Digital Photography degree. It is organized around a single, major self-directed project. Students will submit work once a week for critiques and will participate in their classmates' critiques as well. Classmates and instructor will guide each student towards the best execution of their vision. Students will complete course with a portfolio of images that may be realized in a variety of forms including but not limited to: an online gallery, a website, or a printed portfolio or a photobook. Students will also write an artist statement to accompany the work and conduct research where there is an audience for their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317
ART	408	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 3.00 GPA; minimum 45 hours. Credit is allowed for only ART 408 or ART 508
ART	409	Photographic Exhibition	Care of photographic prints, print presentation, and exhibition. Practical experience in gallery operations. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	410	Landscape Photography	Photographing landscapes. Critical discussion and presentations on issues in landscape photography. May be repeated for credit. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		

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ART	411	Drawing IV	Visual and intellectual concepts through problem solving and independent study. Emphasis on the individual creative statement. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 211 and ART 311 with C or better
ART	412	Advanced Techniques	Highly technical course consists mainly of technical applications, readings, quizzes and discussion. Focuses on learning advanced image-editing software such as Photoshop, and photo management and manipulation software. Covers montage and color management systems including profiling for color printing and monitors. Students also learn about using digital backs on medium format and view cameras.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	414	Life Drawing III	Various media and techniques on an advanced level. The human figure as an expressive vehicle in various contexts. 6 hours a week. May be repeated for credit.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 314; credit is allowed for only ART 414 or ART 514
ART	415	Digital Compositing	Photographically based lab/lecture course designed to address ideas and concepts using digital montage/manipulation as an expressive medium. Emphasizes both assignments and self-defined projects. Includes discussion of technological theory and the extent to which digital imaging has affected the field of photography in the fine arts and professional arenas. Introduces new and more advanced techniques, but students also review retouching, coloration, enhancement and montage techniques. Covers the basic principles of pattern design in relationship to photography and the use of the computer as a pattern generator.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 415 or ART 494 (Digital Compositing) OR Visiting University Student
ART	417	Storyboard & Narrative Sequenc	Focuses on the representation and manipulation of time, cause and effect, and viewpoints in narrative sequences. Designed for students interested in live action film, animation, video gaming and comic book formats. Although storyboarding is typically considered a preparatory stage, students are to treat each project as a finished piece, thereby requiring an amplified level of attention and understanding with a special emphasis on consistency and coherence.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is allowed for only ART 417 or ART 494 (Storyboarding and Narrative Sequencing) OR Visiting University Student
ART	418	Alternative Processes II	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 418 or ART 494 (Alternative Processes II) or ART 518 or ART 598 (Alternative Processes II)
ART	423	Advanced Painting	Further exploration of techniques and concepts of painting.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 323 with C or better; min 2.00 GPA OR All other majors: ART 110 with C or better; ART 112, 113, 115, or 116 with C or better; min 2.00 GPA; Credit is allowed for only ART 423 or ART 523
ART	424	Stop Motion Animation	Hands-on studio focuses on creating original stop motion animations. Covers the theory of timing for animation, how to plan and collaborate on animations and about the history of the art form. In-class activities include demonstrations, project work, and viewing of and discussion of stop motion animated films. Homework includes hands-on animation as well as reading, writing and viewing of films.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 424 or ART 494 (Stop Motion Animation) OR Visiting University Student
ART	425	Intermediate Figure Painting	The human figure clothed and nude as the subject for painting in selected media. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 325 with C or better; Credit is allowed for only ART 425 or ART 525
ART	427	Art on Paper	Advanced techniques, concepts, and processes with water media and mixed painting and drawing media on paper.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better; Credit is allowed for only ART 427 or ART 527 OR Visiting University Student

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ART	428	Video & Sound as Sculpt Mat	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry Pi. The latest developments in video and sound for sculpture and sculpture for video and sound.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art BA or BFA major; ART 231 with C or better; Credit is allowed for only ART 428 or ART 494 (New Systems-Sculpture) or ART 528
ART	429	Painting&Drawing Rsrch Studio	Advanced-level students produce a series of drawings, paintings and/or mixed media works based around their chosen theme. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Expects students to have a high level of motivation, a consistent work ethic, and a desire to advance their creative practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Painting and Drawing BFA major; ART 311, 314, 323, or 425 with C or better; minimum 2.00 GPA; Credit is allowed for only ART 429 or ART 494 (Painting and Drawing Studio Capstone)
ART	430	Adv Sculpture: Materials&Tech	Encourages individual investigation in sculpture with an emphasis on the development of a personal approach to materials and techniques. Students have acquired a strong background in the basic techniques and materials in sculpture in previous classes and now are working toward the development of a portfolio or body of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 OR Visiting University Student
ART	431	Special Problems in Sculpture	Development of a personal approach to sculpture. Emphasis on form, individual problems, and related color technology. Professional practices and presentation. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231, ART 331 and 332 with C or better
ART	432	Neon Sculpture	Techniques for creating neon in an art context. Glass tube bending and fabrication. Construction of artworks utilizing light-generating gasses. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231 with C or better or BIS Studio Art emphasis or Studio Art minor; ART 110 and 115 with C or better
ART	433	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Requires participation in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Provides a history of the use of cast metal in the visual arts and an understanding of how casting processes can be applied to contemporary sculptural concepts. Requires participation in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 331 with C or better OR Non-art majors; ART 231 with C or better OR Visiting University Student
ART	434	Adv. Sculpture:Context/Content	Studio-based class offers an opportunity for guided individual study with an emphasis on content, context and professional practices. Students work on developing a series of related works on a theme of their choosing. Assignments help students gain a greater understanding of the themes and ideas that are important in their art and expand their awareness of historical and contemporary artist working along similar lines. Requires students to develop a packet for self-promotion including a resume, portfolio and artist statement and to submit these materials to a competitive exhibition, commission, residency, scholarship or similar opportunity.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331
ART	435	Foundry Research Methods	Research in foundry techniques.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	436	Architectural Sculpture	Sculptural concepts as related to architecture and other man-made environments. Scale drawing, models and relief sculpture. Students learn to produce proposals for large-scale and public commissions.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better
ART	438	Moving&Interactiv Sys Sculpture	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 231 with C or better; Credit is allowed for only ART 438 or ART 538 OR Visiting University Student
ART	439	Intermedia Studio	Exploring visual effects by combining traditional and nontraditional methods, techniques, and concepts. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student or Digital Culture (Art) student; ART 111, ART 112 or ART 113 with C or better or Studio Art minor (or BIS Studio Art emphasis), ART 110 and 116; credit is allowed for only ART 439 or 539

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ART	440	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The Experimental Video Art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 116 with C or better, or Art minor or non-Art major with minimum 45 hours OR Visiting University Student
ART	441	Video Art	Utilizing video and audio equipment essential to the production of broadcast quality video art. 2 hours a week. May be repeated for credit.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): Art portfolio completed; corequisite ART 440
ART	442	Art and Community	Explores public and socially engaged art practice that is often collaborative, participatory and involves developing relationships with people and communities as a fundamental material of the work. Many social practice artists aim to initiate real-world change through artistic experimentation, activism, social intervention or interpretation of community stories, tragedies and celebrations.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 442 or ART 542 OR Visiting University Student
ART	443	Intermedia Performance	Experimental, conceptual, and interdisciplinary studio art with emphasis on performance and new media practices.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art minor or BIS Studio Art emphasis; ART 110 with C or better; ART 116 with C or better OR Art major OR Performance and Movement BA major; Credit is allowed for only ART 443 or ART 543 OR Visiting University Student
ART	445	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques, including image capture, film generation and analog processes, and digital and inkjet printing.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): 50 minimum hours; credit is allowed for only ART 445 or 494 (Digital Process for Print)
ART	449	Computer Animation and Video	Integrates 3-D fine arts animation with video and compositing.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Film (Film and Media Production) BA or Film (Filmmaking Practices) BA or Film and Media Production BFA major or ART 217 with C or better OR Visiting University Student
ART	451	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 351 with C or better; credit is allowed for only ART 451 or ART 551
ART	452	Advanced Lithography	Continuation of ART 352. 6 hours a week. May be repeated for credit.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student or completion of portfolio milestone; ART 253 and ART 352 with C or better
ART	453	Experimental Printmaking	Alternative methods of working with print techniques, including installations, actions or performances, and other nontraditional formats.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): at least one of the following: ART 351, 352, 354, 355, 456, 459, 477, 478, 494 (Relief), or 394 (Photolithography) with C or better; Credit is allowed for only ART 453 or ART 553
ART	454	Advanced Screen Printing	Continuation of paper, direct, and photographic stencil techniques. 6 hours a week.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 354 with C or better OR Visiting University Student
ART	455	Artists' Books	Concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic editing and low-tech printing techniques while simultaneously working on studio assignments that challenge them on a conceptual level.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 455 or ART 494 (Artists' Books) or ART 555 OR Visiting University Student

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ART	456	Letterpress Studio	Equipment, techniques and applications of letterpress printing. Students hand set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR non-art major with 56 hours; minimum 2.50 GPA; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	457	Fine Printing & Bookmaking II	Continuation of ART 456. Bookbinding, book design and printing, advanced typography, theory, and presswork. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 253 with C or better; ART 456 with C or better; Credit is allowed for only ART 457, ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	458	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with ART 112 with C or better, OR non-Art majors with 56 minimum credit hours and minimum 2.50 GPA; Credit is allowed for only ART 458 or ART 558
ART	459	Monoprinting	Nonmultiple printed image using a variety of technical approaches. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BA or BFA Art major, minimum 45 hours; or BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor; ART 110, 112, 113, 115 or 116 with C or better
ART	460	Ceramic Clay	Research into various clay body formulations, local natural materials, slip glazes, and engobes.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; Pre- or corequisite(s): ART 360 and ART 364 with C or better if completed
ART	461	Animation Capstone	In this studio course, advanced-level students produce a substantial animation project of their own devising. This project could be a very short film individually produced in any animation medium, or a more substantial film produced in collaboration with other students. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Students should enroll in the class with a clear idea about the project that they want to undertake.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art (Animation) BFA major; ART 308 with C or better; ART 346 with C or better; ART 417 with C or better; minimum 2.00 GPA
ART	463	Ceramic Glaze	Glaze calculation and formulation using various glaze colors and surfaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 261 with C or better
ART	466	Special Problems in Ceramics	Emphasis on personal expression within structure of seminars, critiques, and studio work. Professional methods of presentation/documentation of work. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 and ART 364 with C or better
ART	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	472	Adv Jewelry Surface Techniques	Covers jewelry forms and techniques including surface embellishment such as granulation, keum-boo and filigree to be used as tools for aesthetic expression and expand student awareness of historical and contemporary jewelry/metalwork.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 and ART 372 with C or better
ART	473	Advanced Metals & Mechanisms	Covers new techniques and develops existing skills in non-ferrous metal forming and mechanism fabrication while further refining fitting and finishing techniques, incorporating concept with craft and emphasizing professional practices/portfolio development.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better; ART 373 with C or better; Credit is allowed for only ART 473 or 598 (Adv. Metals & Mechanisms)
ART	474	Advanced Wood	Extended experience and advanced techniques in the use of wood to create functional works of art. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better; ART 374 with C or better OR Visiting University Student

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ART	476	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 276 with C or better; ART 376 with C or better
ART	477	Printed Textiles	Techniques for screen printing on fabric exploring pattern as a compositional element. Various stencil methods including photographic processes.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 276 with C or better; ART 377 with C or better OR Fashion BA major: FSH 201
ART	478	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276, ART 377 and ART 477 with C or better; Credit is only allowed for ART 478 or ART 578
ART	479	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major or Studio Art minor; ART 276 with C or better; Credit is allowed for only ART 479 or ART 579 or ART 598 (3-D Fibers)
ART	482	Senior Exhibitions/Portfolio	Capstone course required of all BFA studio art majors. Students participate in a group exhibition and focus on professional practices, including exhibition display and advertisement, career planning, and development of a professional packet with artist statement, CV, and digital portfolio.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BFA student; minimum 100 hours; Credit is allowed for only ART 482 or ART 494 (Senior Exhibition/Portfolio) OR Visiting University Student
ART	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): Art student
ART	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ART	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	STO	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ART	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ART	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): Art student
ART	501	Cross-Practice Critique	Engages graduate students in deep, sustained critical discussion about artwork made by students in the class. Students investigate together the process(es) of critiquing artwork and consider and discuss the underlying assumptions and values they bring to this method of communication and pedagogy. Helps students develop and improve their critical voice at whatever level they are at, including the ability to receive and accept critical feedback of their work. Encourages students to hone their sense of personal agency in the context of "the crit."	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate
ART	508	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits. Graduate level focuses on the development of a personal approach.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ART 408, 494 (experimental Film), or ART 508, or ART 598 (Experimental Film)
ART	514	Graduate Life Drawing	Advanced study of the human figure as an expressive vehicle in various contexts. Graduate level focused on the development of personal approach. Timed poses of short and long duration with emphasis on using the figure to enhance the students individual research. Art historical component will be included to enable the student to fit themselves into the context of the use of the figure as it relates to the study of the history of art.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 414 or ART 514

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ART	518	Alternative Processes	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 418 or ART 494 (Alternative Processes I) or ART 518 or ART 598 (Alternative Processes II)
ART	523	Graduate Painting	Concentrates on formal and conceptual skills and explores a variety of topics, including historical and contemporary painting issues, visual literacy, critical thinking, and professional practices.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR Senior or Postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 423 or 523
ART	525	Advanced Figure Painting	Advanced study of the human figure clothed and nude as the subject for painting in selected media. Graduate-level study focuses on the development of personal expression.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 425 or ART 525
ART	527	Art on Paper	Exploration focused on conceptual and technical approaches combining mixed media painting and drawing on paper and related surfaces.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 427 or ART 527
ART	528	Video & Sound as Sculpt. Mat.	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry PI. The latest developments in video and sound for sculpture and sculpture for video and sound.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 428 or ART 528 or ART 598 (New Systems Sculpture)
ART	529	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The experimental video art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects. Graduate students create a collaborative Video anthology.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 529 or ART 598 (Experimental Video Art) or ART 598 (New Media Concepts)
ART	530	Digital Compositing	Fine arts digital compositing of computer animation, video, and video editing of composites with audio.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior OR postbaccalaureate undergraduate with minimum of 108 earned hours
ART	532	Neon Sculpture	Emphasizes techniques for creating neon in an art context, including glass bending and fabrication.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 532 or ART 598 (Neon Sculpture)
ART	533	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Students are expected and required to participate in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Students deepen their knowledge of the history of the use of cast metal in the visual arts and understanding of how casting processes can be applied to contemporary sculptural concepts, participating in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 533 or 598 (Foundry Casting Methods)

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ART	538	Mvg & Intractv Systms in Sculp	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 438 or ART 538 or ART 598 (Experimental Systems in Sculpture)
ART	539	Intermedia Studio	Investigates how intermedia practice can expand the realm of conversations within contemporary art, life and society. Encourages investigation of social art practice, art/life practices, conceptual art, digital art, emergent media, installation, new genre public art, performance, and visual art with emphasis on research, production and theory. Students expand their ability to assess interdisciplinary strategies. Through reinforcing artistic rigor, students deepen their ability to employ intermedia methods as artistic communication, to express a personalized point of view.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 439, 539 or 598 (Intermedia Studio)
ART	542	Art and Community	Through studio practice, research and presentations, explores intermedia social art practice, public practice, art/life practice, relational aesthetics, community-based projects, and other critical theories and conventions that engage art and community. Graduate students, in conjunction with the instructor, create their own workplan for the course.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 442 or ART 542
ART	543	Performance Art	This experimental, conceptual and interdisciplinary graduate studio art course focuses on the body of the artist as a tool and material for cultural production. Explores various art making practices including the body as material, performing for the camera, sound and video for movement, and the body in public space. Readings and lectures discuss contemporary and historical aspects of performance through a visual art lens. Emphasizes process and hands-on practice of engaging the body. Encourages students to work in whatever discipline/media they are familiar with and work with found/archival footage, video camera and projection techniques, field recordings and original audio tracks, as well as learn how to design and execute a performance event.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 443 or ART 543
ART	545	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Course is comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques: image capture, film generation and analog processes, and digital and inkjet printing.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 545 or 598 (Digital Processes for Printmaking)
ART	550	Photolithography	Covers various photolithography processes including black and white, multiple color, and CMYK photo reproduction techniques, looking at the transformation of the photo image into print and the nature of printed photographic images.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 550 or ART 598 (Photolithography Prints)
ART	551	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or post-baccalaureate undergraduate with minimum of 108 earned hours; credit is allowed for only ART 451 or 551
ART	553	Experimental Printmaking	Focuses on the development of concepts in printmaking beyond the traditional two-dimensional image on paper that is contained in a portfolio or frame. Explores alternative techniques and materials, methods of extending the print beyond 2 dimensions, and expanding the concept of what is a print. Students are encouraged to understand printmaking within the wider context of contemporary art, especially those directly related to the student's main artistic emphasis (if not printmaking).	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 453 or ART 553
ART	554	Graduate Screenprinting	Focuses on the development of screenprinting techniques and the ability to utilize these techniques as an expressive visual method of exploring and developing individual research concepts.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 554 or 598 (Advanced Screen Printing)

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ART	555	Artists' Books	Graduate-level introduction to concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic editing and low-tech printing techniques while simultaneously working on studio assignments that challenge on a conceptual level.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 555 or ART 598 (Artists' Books) or ART 455
ART	556	Letterpress Studio	The equipment, techniques and applications of letterpress printing. Students hand-set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	557	Fine Printing & Bookmaking	Continuing study of letterpress in fine art--the book arts--with emphasis on the book.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 457 or ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	558	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 458 or ART 558
ART	559	Monoprinting	Investigates monoprint/monotype printmaking and its aesthetic possibilities. Students acquire basic and advanced skills in the medium through demonstrations, problem solving exercises, and experimentation.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 559 or 598 (Monoprinting)
ART	563	Ceramic Glaze Research	Focuses on an investigation into the science and art of clay and glazes and a process of exploration of materials and surfaces, which continues to evolve with the students' evolving creative expression. The first assignments help students choose a direction to investigate for their own artwork. Each student selects a particular glaze to focus on during the term. Investigates ways of altering and improving recipes, focusing on one particular glaze quality at a time. By the end of the term students understand their glaze focus extensively and know how to go about altering all glaze types for special effects and required changes.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 563 or ART 598 (Ceramic Glaze Research)
ART	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	576	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 476 or ART 576 or ART 598 (Woven Structures)
ART	578	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, this class presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 478 or ART 578 or ART 598 (Advanced Surface Design)
ART	579	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ART 479, 579 or 598 (3D Fibers)

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ART	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	621	Studio Problems	Advanced study. 3 hours a week each section.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		
ASB	100	Introduction to Global Health	Current global health crises, challenges; tools for describing health and disease; ecological, cultural, social, historical, political-economic factors; comparative health systems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Credit is allowed for only ASB 100 or SSH 100 OR Visiting University Student
ASB	101	Anth: Understanding Human Diversity	Provides an integrated understanding of biological, historical, and cultural evolutionary processes that account for human variation. Specifically examines how humans evolved and how they obtained the characteristics that make us a unique species. Considers cultural and biological models of cooperation, resource acquisition and distribution, sex and marriage, parenting, conflict and warfare, political structures, power and status, sex roles, ritual, religion, and language.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	102	Intro to Cultural Anthropology	Introduces concepts and methods of sociocultural anthropology, with illustrative materials from a variety of communities in a globalizing world. Explores the concept of culture and examines a variety of social, political and economic dimensions of how humans organize their lives.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
ASB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
ASB	210	Human Sexuality: Anth Perspect	Examines the sexual nature and behavior of humans from both a biological and an anthropological point of view across various cultures around the globe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	211	Women in Other Cultures	Cross-cultural analysis of the economic, social, political, and religious factors that affect women's status in traditional and modern societies.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	

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ASB	220	Exprsv Cltr Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 220 or TCL 230 OR Visiting University Student
ASB	222	Buried Cities and Lost Tribes	Archaeology through its most important discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	223	Aztecs, Incas and Mayas	Archaeological and historical study of the three best-known ancient cultures of Mesoamerica and South America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	230	Beginning Social Research	Introduces basics of social research design; fosters independent thinking and critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	
ASB	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introduction to Evolutionary Medicine) OR Visiting University Student
ASB	252	Sports and Culture	Cross-cultural examination of symbolic and social dimensions of sports past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Credit is allowed for only ASB 272 or SOS 272
ASB	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
ASB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 300 or SSH 300 OR Visiting University Student
ASB	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
ASB	302	Ethnographic Field Study	Fieldwork study of cultural adaptation through ethnographic research methods and local culture. Taught in Latin America or other international locations.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 102, ASB 222, ASB 223, or ASM 104; ENG 101, 105, or 107 with C or better OR Visiting University Student
ASB	305	Poverty and Global Health	From perspectives of anthropology and allied fields, explores critical, social justice, and ethical issues in health care, research, and disparities. Focuses on vulnerable and special populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 305 or SSH 305 or WST 305 OR Visiting University Student
ASB	310	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
ASB	311	Prin of Social Anthropology	Comparative analysis of domestic groups and economic and political organizations in primitive and peasant societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	

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ASB	316	Money and Culture	Using the fundamentals of economic anthropology, investigates how culture shapes our relationship to money and decision making. Provides a foundation for thinking about how production, exchange and consumption can be explained by looking at human behavior, thought and culture, and encourages students to apply anthropological knowledge to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better
ASB	319	The North American Indian	Archaeology, ethnology, and linguistic relationship of the Indians of North America. Does not include Middle America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: ASB 102, ASB 222, or ASB 223
ASB	322	Peoples of Latin America	Indigenous, mestizo, and national cultures, rural and urban peoples in the region that today we call Latin America. Covers historic and contemporary events and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	325	Peoples of Southeast Asia	Cultural-ecological perspective on the peoples of mainland and insular Southeast Asia. Subsistence modes, social organization, and the impact of modernization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	G	
ASB	326	Human Impacts on Ancient Envir	World survey of successful and unsuccessful ancient societies and their impacts on the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	
ASB	327	Disaster!	Examines the causes of disasters, such as famines and pandemics, throughout human history. Explores cases in which social responses to disaster have helped people survive or led to their demise. Through hands-on activities, students gain experience with popular tools to understand human responses to disasters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	330	Understanding Archaeology	In-depth study and critique of theories and methods for reconstructing the lives of prehistoric peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	333	Frauds, Myths and Mysteries	Depictions of archaeology in popular culture are full of dubious tales of ancient extraterrestrials, giants and widespread scientific conspiracy. Explores such fantastic claims and learn how archaeologists separate plausible arguments from pseudoscience. Critically examines how and why such pseudoscientific claims develop and take hold of the public imagination.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 333 or ASB 394 (Myth Busters) OR Visiting University Student
ASB	335	Ancient Ruins of the Southwest	Archaeological exploration of the the major cultural developments in the prehispanic Southwest, including Mesa Verde, Chaco Canyon, Mimbres, Hohokam and Rio Grande.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H & C	Prerequisite(s): ASB 102, 222, or 223 or minimum 45 hours OR Visiting University Student
ASB	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
ASB	337	Pyramids and Hieroglyphs	Preconquest cultures and civilizations of Mexico. The Aztecs, Mayas, and their predecessors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339
ASB	340	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours. Credit is allowed for only ASB 340 or SOC 328
ASB	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
ASB	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
ASB	344	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334 OR Visiting University Student

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ASB	345	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
ASB	346	Marriage and Family Diversity	Social, economic, and cultural factors that shape family diversity in relation to generational and gender dynamics within the family.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	
ASB	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ASB	350	Anthropology and Art	Art forms of people in relationship to their social and cultural setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	
ASB	353	Death&Dying Cross-Culturl Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
ASB	355	Trad Medicine and Healing	In-depth study of world views, practices, and roles of shamans and traditional and contemporary healers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU or SB	Prerequisite(s): ASB 102, ASB 222, ASB 223 or ASM 104 or SSH 100 or ASB 100 with C or better
ASB	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
ASB	357	Society and Drugs	Analyzes how humans use exogenous chemicals to change psychology, biology and behavior, and what positive and negative consequences this has for human health. Explores how such chemical technologies arise through cultural evolution, how societies decide what are appropriate and inappropriate uses of such technologies, how these technologies change what is considered normal biological functioning and behavior, and how these technologies shape human health. Through this substantive topic, introduces basic concepts and tools in two related fields--medical anthropology and epidemiology. A consistent focus in the course is developing tools that can be applied to improve the provision of care and health care policy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 357 or ASB 395 (Society and Drugs) OR Visiting University Student
ASB	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student
ASB	361	Human Cultural Beginnings	Biosocial evolution in the Plio-Pleistocene, emphasizing technological achievements and the relationship between technology and environment in Eurasia and Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	H	Prerequisite(s): minimum 45 hours
ASB	362	People and Plants	Offers a global survey of ethnobotany, the study of the uses of plants by people. Integrating botany, anthropology and archaeology, students learn about the roles plants have played as foods, tools, medicines and foci of religious devotion and ritual experience across human history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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ASB	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
ASB	368	Hunter-Gatherers	Studies of known hunting and gathering societies with the goal of developing approaches to understanding past and/or present hunting and gathering societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours
ASB	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370 OR Visiting University Student
ASB	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
ASB	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit for only ASB 374, POS 374, SBS 374 or SOC 374
ASB	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; min 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Env Connections in Anthropology) or ASB 494 (Ecological & Environmental Anthropology) OR Visiting University Student
ASB	376	Global Health Policy	Examines the relationship among global policy, population dynamics and human health. Learn about what quantitative indicators (i.e., measures) can tell us about the scope, distribution and determinants of population health problems. The population focus organizes the course according to the broad domains of fertility, morbidity and mortality.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 376 or ASB 494 (Global Health Policy) OR Visiting University Student
ASB	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378 OR Visiting University Student
ASB	380	Language, Culture & Gender	Focuses on how language, thought and culture are intertwined in everyday practice. Students learn the central role of language in shaping and reflecting social norms and social actions cross-culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 42 hours OR Visiting University Student
ASB	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)

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ASB	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
ASB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	395	Topics in Comparative Culture	In-depth study of specific topic(s) cross-culturally. Students engage with the subject matter through critical evaluation of literature, hands-on analysis and interpretation of data, and scientific writing.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 42 hours
ASB	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
ASB	412	History of Anthropology	Historical treatment of the development of the culture concept and its expression in the chief theoretical trends in anthropology between 1860 and 1950.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ASB	417	Politics and Culture	Comparative examination of the forms and processes of political organization and activity in primitive, peasant, and complex societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ASB	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
ASB	442	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over "global cities" anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
ASB	443	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): ASB 100 or SSH 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 443 or SSH 403 OR Visiting University Student
ASB	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
ASB	452	Commnty Partnrsps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student

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ASB	455	Practicum for Soc Sci	Students integrate theoretical, methodological, ethical and experiential learning related to social science research questions.	Y		PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): minimum 42 hours
ASB	457	Global Mental Health	Brief overview of the field of global mental health, an emerging field and one of vital importance for both research and evidence-based interventions. Mental health has been identified as one of the leading causes of death and disability and thus deserves a critical look at why this is occurring globally. Introduces the concept of the field of global mental health, cross-cultural problems and possible solutions.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 457 or ASB 498 (Global Mental Health) OR Visiting University Student
ASB	462	Medical Anthro: Culture/Health	Role of culture in health, illness, and curing; health status, provider relations, and indigenous healing practices in United States ethnic groups.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 462 or SSH 404 OR Visiting University Student
ASB	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
ASB	464	Ethnography Mexico & Borderlands	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
ASB	466	Peoples and Cultures of Africa	Surveys African peoples and their cultures, external contact, and changes. Meets non-Western requirement.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student
ASB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASB	490	Earliest Cities	Archaeological research on the origins and development of the earliest urban centers around the world. Applies urban theory and comparative analysis. Compares ancient and modern cities.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): ASB 222 or 223 with C or better; minimum 45 hours; Credit is allowed for only ASB 490 or PUP 490
ASB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student
ASB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ASB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student
ASB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-7		
ASB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
ASB	500	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	501	Professionalism	Presents students both information about the tools, opportunities and skills needed to navigate graduate training and future career success, as well as the opportunity to consider all this for themselves. Presents traditional, timeless tools for success, while also taking into account recent and profound changes to the academy that have changed how academic work is done and communicated. Also touches upon considering and preparing for a range of possible career paths for PhDs.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 501 or ASB 591 (Professionalism)
ASB	503	Medical Anthropology	Theory in medical anthropology and cross-cultural studies that illustrate particular theories.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ASB	504	Global Health Policy	Examines the relationship among global institutions and policies, population dynamics and human health. Uses extant data to conduct comparative analyses of population data and health-related policies and practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking grad stndt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)
ASB	510	Health: Social BioculturalThry	Comparative and critical approaches to complexities of health, drawn from anthropology and related fields Focuses on theories that address how social and cultural factors shape human health.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
ASB	525	Intro to Material Culture	Considers how objects embody social relationships and therefore cultural meanings. Seminar explores theories that give insight into social processes such as exchange, consumption, and identity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	526	Survey Topics in Global Nutrit	Nutrition is at the nexus of human health, food systems, water, sanitation and hygiene (WASH) and gender, among others important intersecting human and environmental systems. Explores the current landscape of nutrition and its intersection with these topics by synthesizing research, programmatic, and policy documents and public communications and through hands-on exploration and analysis of publicly available datasets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	530	Chngng Human-Nature Relatnshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553
ASB	537	Topics/Mesoamerican Archaeolog	Explores changing organization of pre-Columbian civilizations in Mesoamerica through interpretive issues, such as regional analysis, chiefdoms, urbanism, and exchange.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	541	Theory in Sociocultural Anthro	Basic issues and concepts in sociocultural anthropology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560

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ASB	567	Southwestern Archaeology	Broad coverage of Southwestern cultural developments focusing on current debates and rigorous use of archaeological data in making cultural inferences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	568	Intrasite Research Strategies	Research issues within a single site context. Topics include quantitative spatial analysis, site definition, sampling, distributional analysis, and substantive interpretation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	572	Museum Collection Management	Principles and practices of acquisition, documentation, care, and use of museum collections; registration, cataloging, and preservation methods; legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ASB 573 or HST 573
ASB	574	Exhibit Design and Development	Exhibition philosophies and development; processes of planning, designing, staging, installing, evaluating, and disassembling temporary and long-term exhibits.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	579	Critical Issues/Museum Studies	Current debates of museum practice from an anthropological perspective. Addresses issues of collection, presentation, authenticity, and authority.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASC	315	Numeracy in Technology	Contextual uses of mathematics in applied sciences. Emphasizes using mathematical methodologies to solve technology-related problems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): BAS major OR Visiting University Student
ASC	325	Physical Sciences in Tech	Physical systems and their interrelationships on technology systems. Real-world applications of physical systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Prerequisite(s): BAS major
ASC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisites: Polytechnic BAS student
ASC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Pre-requisites: Polytechnic BAS student
ASL	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
ASL	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
ASL	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student
ASL	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student
ASL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ASL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
ASL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ASL	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASM	104	Bones, Stones/Human Evolution	Physical anthropology and archaeology. Evidence and processes of human evolution and of culture change. Primates. Fossil hominids and their tools. Race, variation, and heredity. Environment and human biology. Prehistoric culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	201	Epidemics and Outbreaks	Covers epidemiologic methods for the control of conditions such as infectious and chronic diseases, mental disorders, community and environmental health hazards, and unintentional injuries. Other topics include quantitative aspects of epidemiology, including data sources, measures of morbidity and mortality, evaluation of association and causality, and study design. A background in basic biology and a basic understanding of the principles of human diseases helpful in succeeding in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Credit is allowed for only ASM 201 or SSH 201 OR Visiting University Student
ASM	246	Human Origins	History of discoveries and changing interpretations of human evolution. Earliest ancestors to emergence of modern humans. Humanity's place in nature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	
ASM	275	Forensic Anthropology	Discusses the role of the forensic anthropologist in medico-legal investigations involving skeletonized human remains. Includes forensic recovery techniques, identification of decedents through skeletal and dental analysis, and reconstructing the crime scene through analysis of trauma patterns. Covers the legal aspects of forensic practice and considers historical case studies and the contributions forensic anthropologists make to mass disaster investigations and human rights abuses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	300	Anthropological Sciences Sem	Focuses on the ways in which research findings are produced by diverse theories and methods in the anthropological sciences, usually in combination with other life and physical sciences, with a strong focus on combination anthropological conceptual frameworks with quantitative methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): Anthropology BS major; Two of the following: ASB 102, 222 or 223, AML 100 or ASM 104 with a C or better OR Visiting University Student
ASM	301	Peopling of the World	Reviews all evidence for human dispersal during the last 100,000 years, origins of language, cultures, races, and beginnings of modern humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Pre-requisite: ASM 104
ASM	313	Great Adaptations	Tiny hummingbirds and huge whales commute thousands of miles every year, male bower birds construct elaborately decorated structures to impress females, and some parasites program suicidal behavior into their hosts. These amazing (and sometimes bizarre) behaviors are all adaptations--traits that have been favored by selection because they enhance the ability of individuals to survive and reproduce successfully. The study of adaptation helps us to understand how evolution generates complexity and to understand the processes that underlie the rich diversity of life. Covers the principles of natural selection and a diverse and remarkable range of adaptations in nature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASM 313 or ASM 394 (Great Adaptations) OR Visiting University Student
ASM	332	Life & Death in Ancient Egypt	Reveals ancient Egyptian life through recent research in archaeology and physical anthropology on cemeteries, tombs, and the dead themselves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only AFR 332 (or AFS 332) or ASM 332
ASM	338	Anthropological Field Session	Anthropological field techniques, analysis of data, and preparation of field reports.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASM	341	Human Osteology	Osteology, human paleontology, and osteometry. Description and analysis of archaeological and contemporary human populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): ASM 104 with C or better; 25 minimum hours
ASM	342	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: ASM 104 (or BIO 181 or 282). Credit is allowed for only ASM 342 or BIO 327

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ASM	344	Fossil Hominids	The fossil evidence for human evolution, emphasizing the concepts and methods for reconstructing the past.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisite: ASM 104
ASM	345	Disease and Human Evolution	Interaction of people and pathogens from prehistoric times to the present, with emphasis on disease as an agent of genetic selection.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 or BIO 100 or BIO 181 or BIO 182 or BIO 281 or BIO 282 OR Visiting University Student
ASM	350	Geoarchaeology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASB 222 or 223, GLG 101 or 103, or GPH 111 with C or better OR Visiting University Student
ASM	365	Doing Archaeology	Using hands-on analysis of artifacts and a mock site, this advanced introduction to archaeology acquaints the student with the field and laboratory methods applied by archaeologists, the information archaeologists use, and how they construct knowledge of the past.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 222 (or ASB 223 or 335 or 337)
ASM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	401	Health and Human Biology	Health and biology in contexts of human evolutionary history, biological and cultural variation, lab-based health status assessments, core concepts of human variation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 100 (or ASM 104); SSH 100
ASM	403	Evolution Medicine & Glbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & Glbl Hlth) or ASM 503 or ASM 598(Evol Med & Glbl Hlth) or BIO 403 or BIO 494(Evol Med & Glbl Hlth) or BIO 510 or BIO 598(Evol Med & Glbl Hlth) OR Visiting University Student
ASM	414	Environmental Health	Integrates anthropology and human geography theory and practice to understand the environmental contexts of health, particularly urban	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): AML 100, ASB 100, 102, 222, 223, ASM 104, SOS 100, 110, 111 with C or better; minimum 45 hours OR Visiting University Student
ASM	443	Primateology	Evolution and adaptations of nonhuman primates, emphasizing social behavior. Includes material from fossil evidence and field and lab studies in behavior and biology which must be critically integrated with relevant competing theories concerning the evolution of primate behavior and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; minimum 56 hours; Credit is allowed for only ASM 443 or ASM 543 OR Visiting University Student
ASM	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ASM 301, BIO 340, LSC 347, or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 446 or BIO 546 OR Visiting University Student
ASM	450	Bioarchaeology	Surveys archaeological and physical anthropological methods and theories for evaluating skeletal and burial remains to reconstruct biocultural adaptation and lifeways.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): ASM 104
ASM	452	Dental Anthropology	Human and primate dental morphology, growth, evolution, and genetics. Within- and between-group variation. Dental pathology and behavioral-cultural-dietary factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SG	Pre-requisites: ASM 104. Credit is allowed for only ASM 552 or ASM 452
ASM	456	Infectious Disease/Human Evolu	Study of infectious disease and humanity, using evidence from anthropology, history, medicine, and ancient skeletons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 345
ASM	459	Forensic Anthropology	Applies anthropology, primarily human osteology, to legal questions, including individual identification, crime scenes, forensic reports, police work, and court testimony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 341; ASM 275; Credit is allowed for only ASM 459 or 559
ASM	460	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; ASM 341, 342, 344, 345, or 348
ASM	465	Quantificatn & Analysis Anthro	Statistical and quantitative strategies for envisioning and exploring archaeological, physical anthropological, bioarchaeological, and socialcultural data. Univariate and bivariate methods. A basic understanding of algebra is necessary to be successful in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	CS	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ASM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	503	Evolutionary Medicine	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & GIBL Hlth) or ASM 503 or ASM 598(Evol Med & GIBL Hlth) or BIO 403 or BIO 494(Evol Med & GIBL Hlth) or BIO 510 or BIO 598(Evol Med & GIBL Hlth)
ASM	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 506, ASM 506 or MCB 506
ASM	525	Primate Paleobiology	Seminar-based survey of primate evolution, focusing on comparative biology of the extant primates and the fossil record through the Miocene.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	530	Paleoanthropology	Seminar-based in-depth study of the fossil record of human evolution and its geological, environmental, and phylogenetic contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	543	Primateology	Advanced study of nonhuman primate behavioral adaptations, emphasizing comparative sociality, incorporating data on behavior and biology from field and captivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit allowed for ASM 443 or 543
ASM	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); credit is allowed for only BIO 446, ASM 446, BIO 546 or ASM 546
ASM	548	Geoarchaeology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	552	Dental Anthropology	Evolutionary anthropology of non-human primate and human dentition and research from extant and extinct species of non-human primates and hominins.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 452 or ASM 552
ASM	555	Advanced Human Osteology	Intensive lab course covers identification of human skeletal remains and bone fragments from archaeological contexts. Emphasizes skeletal biology, variation, anatomical landmarks, determinants of age, sex, and stature.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): Anthropology graduate student OR ASM 341
ASM	560	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	565	Quantitative Archaeology	Formal methods of structuring, codifying, and analyzing data for archaeological problems. Designing research to yield data amenable to productive analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	568	GIS and Spatial Technologies	In-depth survey of spatial technologies in anthropological research, including GIS, spatial modeling, remote sensing, and image analysis and classification.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
ASM	573	Lithic Analysis	Analysis and interpretation of chipped stone artifacts. Focus on both techniques and underlying concepts and their application to real collections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	611	Paleopathology	Explores patterns of disease manifested in the human skeleton and differential diagnosis of infectious, metabolic, neoplastic, congenital, and other conditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); ASM 555
ASM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	111	Intro/Solar Systems Astronomy	Properties and origins of the solar system, exoplanets, astrobiology. History, properties of light, instruments, study of solar system and nearby stars.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
AST	112	Intro Stars, Galaxies & Cosmo	Structure and evolution of stars, star clusters, galaxies, cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
AST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	301	Physics of Astrophysics	Develops critical physical and mathematical concepts for contemporary astrophysics. Assumes prior knowledge of algebra and calculus. Through the textbook, introduces students to a variety of physical forces in the context of astrophysical processes, including electromagnetic interactions and light, gravity and motion, interactions between light and matter in astrophysical systems, and the strong (nuclear) force responsible for the fusion processes fueling stars.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 170 with C or better; MAT 210 with C or better; PHY 111 with C or better; PHY 112 with C or better; PHY 113 with C or better; PHY 114 with C or better OR Visiting University Student
AST	321	Intro/Planetary/Stellar Astrop	Physical laws; celestial mechanics; properties of planets, the sun, and other stars; formation and evolution of stars and planetary systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better OR Visiting University Student
AST	322	Intro/Galactic/Extra/Astrophys	Evolved stars, introduction to relativity, galaxies and interstellar matter, structure and dynamics of galaxies, cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121/122 with C or better or PHY 150 with C or better
AST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	421	Astrophysics I	Selected astrophysical topics, including stellar evolution, star formation, interstellar medium, galactic structure, extragalactic astronomy, high-energy astrophysics, and cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better
AST	422	Astrophysics II	Same range of astrophysical topics as for AST 421 but emphasizes different specific topics in a given year.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better OR Visiting University Student
AST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
AST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		

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AST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-7		
AST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
AST	521	Stars and Interstellar Medium	Radiative transfer, atomic and molecular properties, stellar atmospheres, line profiles, nonlocal thermodynamic equilibrium, interstellar gas and dust, star formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	522	Stars & Interstellar Medium II	Stellar structure, radiative transport, boundary conditions, equations of state, nuclear reactions, opacity, nucleosynthesis, chemical evolution of the galaxy, stellar evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	523	Stars/Interstellar Medium III	Structure of the interstellar medium, gaseous nebulae, recombination theory, ionization fronts and shock waves, galactic magnetic fields, magnetohydrodynamics, molecular clouds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	531	Galaxies and Cosmology I	Structure and evolution of the Milky Way, stellar properties, populations and associations/clusters, interstellar medium, dark matter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	532	Galaxies and Cosmology II	Structure of galaxies and the nearby universe, Hubble sequence, kappa-space, stellar populations, active galaxies, galaxy environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	533	Galaxies and Cosmology III	Issues in modern cosmology, the distance scale, cosmological parameters, cosmological tests, cosmic background radiation, early universe, galaxy formation and evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	540	Astronomical Instrumentation	Studies a range of optical astronomical hardware including telescopes, digital detectors and instrument design and theory. Focuses on the use of CCDs in terms of operation, calibration, use, measurement, limitations, noise and signal, statistics, and preliminary understanding prior to data reduction. Discusses practical optical astronomical observing: the choice of filters and their design, planning your observing run, bringing your data home and the types of data you will need. Final class project requires the reduction and measurement of data using computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AST 540 or AST 598 (Optical Astro Tech & Data) or AST 598 (Observing Instrumentation and Data Analysis)
AST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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AST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASU	9	ASU-Uber Online Orientation	Students that are a part of the ASU & Uber Education Partnership will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, become familiar with the partnership and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	10	Connect: ASU Orientation	Students enrolled in the Starbucks College Achievement Plan will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	11	ASU Online Orientation	Students enrolled in ASU Online Orientation will learn about ASU and its mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	12	SDAP Online Orientation	Students enrolled in the Starbucks Degree Achievement Plan Orientation will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/studies balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	19	Jump Start	One-week program for incoming first-year students to ASU and is designed to set them up for academic success. Introduces the tools and processes that support their journey. Students learn how to connect with other students via collaborative environments.	N	LEC	N	YGB	University College	University Academic Success Programs	0		Prerequisite(s): Jump Start or SPIRIT student
ASU	42	Online Military Orientation	Active duty and veteran students enrolled in ASU 42 will explore ASU academic, veteran, and career resources, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and craft a plan balancing work, school, and life.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	120	Emerging Leaders I	Students develop in academic areas while also gaining essential career skills in creativity, problem solving, and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and ASU 120. This is the first part of a two-part curriculum which continues into the spring semester. Separate grades will be issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	3		Credit is allowed for only ASU 120 (or ASU 150) or UNI 120 OR Visiting University Student
ASU	121	Emerging Leaders II	Students continue to develop in academic areas while gaining essential career skills in creativity, problem solving and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and this course. Second part of a two-part curriculum, which continues from the fall semester. Separate grades are issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 121 (or ASU 151) or ASU 194 (The LEAD Project II)
ASU	101-AEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace Engineering undergraduate student OR Visiting University Student

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ASU	101-AMT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): undergraduate Aviation programs major
ASU	101-BME	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering student OR Visiting University Student
ASU	101-CEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CHE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Chemical Engineering major OR Visiting University Student
ASU	101-CHS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions student OR Visiting University Student
ASU	101-CLS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): College of Integrative Sciences and Arts undergraduate student OR Visiting University Student
ASU	101-CNE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		

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ASU	101-CON	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CPP	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1		Prerequisite(s): Watts College of Public Service and Community Solutions OR Visiting University Student
ASU	101-CS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School of Journalism and Mass Communication student OR Visiting University Student
ASU	101-CSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): School of Computing, Informatics, and Decision Systems Engineering major OR Visiting University Student
ASU	101-EEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Electrical Engineering undergraduate student OR Visiting University Student
ASU	101-EGR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Engineering undergraduate student OR Visiting University Student
ASU	101-ERM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): Environmental and Resource Management student or Visiting University Student

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ASU	101-FSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-GIT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): Graphic Information Technology student or Visiting University Student
ASU	101-HDA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
ASU	101-HNR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	1		Prerequisite(s): Barrett Honors student
ASU	101-HSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): Human Systems Engineering student OR Visiting University Student
ASU	101-IEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): School of Computing, Informatics, and Decision Systems Engineering major OR Visiting University Student
ASU	101-IFT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): Information Technology student OR Visiting University Student

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ASU	101-LA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Prerequisite(s): The College of Liberal Arts & Sciences student OR Visiting University Student
ASU	101-MAE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student or Aerospace Engineering undergraduate student OR Visiting University Student
ASU	101-MEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student OR Visiting University Student
ASU	101-MSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science and Engineering BSE major OR Visiting University Student
ASU	101-NCIAS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College of Interdisciplinary Arts and Sciences undergraduate student OR Visiting University Student
ASU	101-NH	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		
ASU	101-NU	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation or Nutrition student OR Visiting University Student

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ASU	101-ONL	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): ASU Online students OR Visiting University Student
ASU	101-SOS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability student OR Visiting University Student
ASU	101-TE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College student OR Visiting University Student
ASU	101-TEM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Prerequisite(s): Technological and Entrepreneurship Management student OR Visiting University Student
ASU	101-TPS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Polytechnic School	1		Prerequisite(s): Ira A. Fulton Schools of Engineering - The Polytechnic School student OR Visiting University Student
ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student
ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N		LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student

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ASU	101-WPC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1		Prerequisite(s): W.P. Carey student OR Visiting University Student
ASU	140-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	140-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	140-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	140-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	140-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	140-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	140-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	140-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	140-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	140-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	140-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	140-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	140-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	140-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	194-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASU	194-LA	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ASU	194-NCIAS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ASU	194-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	240-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	240-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	240-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	240-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	240-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	240-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	240-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	240-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	240-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		

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ASU	240-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	240-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	240-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	240-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	240-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	294-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	340-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	340-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	340-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	340-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	340-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	340-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	340-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	340-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	340-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	340-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	340-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	340-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	340-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	340-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	394-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0.5-4		
ASU	394-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	0.5-4		
ASU	440-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	440-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	440-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	0-18		
ASU	440-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	440-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	440-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	440-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	440-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	440-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	440-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		

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ASU	440-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	440-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	440-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	440-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ATC	230	Fundamntls of Air Traffic Mgmt	Introduces the manuals, procedures, maps, charts, and regulations used by air traffic controllers in the National Airspace System (NAS).	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 201 with C or better OR Visiting University Student
ATC	331	Tower Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in ATC towers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student
ATC	332	TRACON Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA TRACONs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student
ATC	333	En Route Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA ATC En Route Centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better OR Visiting University Student
ATC	431	Tower Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 331 with C or better OR Visiting University Student
ATC	432	TRACON Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 332 with C or better OR Visiting University Student
ATC	433	En Route Operations & Procedur	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 333 with C or better OR Visiting University Student
ATC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
ATC	491	ATC Capstone	Overview of problem solution tools, quality metrics, and current technology initiatives related to air traffic management and related industry problems in a project environment. Student projects focus on airport and airspace requirements. Student teams work with partners from industry, government, and academia to define project objectives and work toward a formal recommendation to help solve the specified problem. Class discussions focus on project management, organizational structures, strategic initiatives, strategy implementation and execution. Uses review and analysis of current industry problems and resolutions to provide examples of practical solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): ATC 431 with C or better if completed; ATC 432 with C or better if completed; ATC 433 with C or better if completed
ATC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
ATE	242	Intro to Arch Technology	Materials and methods of construction. Aesthetic, code and construction costs. Exposure to building information management (BIM).	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies major. Corequisite(s): ALA 226
ATE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ATE	361	Architectural Technology I	Introduces load distribution on structures. Static analysis of determinant beams, trusses, arches, and rigid frames. Computer applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 321 OR Visiting University Student
ATE	362	Architectural Technology II	Strength of materials. Stresses in beams and columns. Thermal effects on structures. Analysis, design, and detailing of wood structural systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 361 with C or better
ATE	451	Building Systems I	Principles of solar radiation, heat and moisture transfer, and environmental control systems as form influences. Energy-conscious design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Co-requisites: ADE 421
ATE	452	Architectural Technology III	Architectural design implications of heating, ventilation, and air conditioning systems. Principles of lighting, daylighting, and acoustics, and their applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 362 with C or better; Corequisite(s): ADE 422
ATE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ATE	521	Building Environmental Science	Scientific principles relating to comfort and environmental control. Heat and moisture transfer. Solar/natural energies for heating, cooling, and lighting.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	550	Passive Heating and Cooling	Theory, analysis, and application of passive and low-energy systems in order to maximize comfort and minimize energy consumption in buildings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student

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ATE	553	Architectural Technology IV	Design and integration of building systems, including mechanical, electrical, plumbing, security, communications, fire protection, and transportation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student; Corequisite(s): ADE 521; ATE 563
ATE	556	Architectural Technology V	Comprehensive design development through the understanding and integration of building materials and systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 522; APH 505
ATE	560	Building Energy Analysis	Computer simulation of building thermal behavior. Software review. Detailed study of selected simulation models using case study projects.	N	LAB	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	562	Experimental Evaluation	Instrumentation, measurement and computational techniques for analysis of building components, and assessment of thermal and luminous performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	563	Architectural Technology VI	Analysis, design, and detailing of steel buildings and frames. Lateral analysis of small rigid and braced frame systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student
ATE	582	Environmental Control Systems	Heating, ventilation, and air-conditioning systems. Loads, psychrometrics, refrigeration cycle, air/water distribution, controls, energy performance standards, and utility rates.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ATE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ATP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ATP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7		
BCH	341	Physical Chem with Bio Focus	Thermodynamics, equilibrium, states of matter, solutions and chemical kinetics with a focus on biological systems. For students in biochemical, premedical, biomedical and educational curricula.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114 or 116 or 118 with C or better; CHM 231 or 233 or 333 with C or better; MAT 251 or 265 or 270 with C or better; PHY 101 or 112 or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student

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BCH	361	Principles of Biochemistry	Advanced consideration of the structures, properties, and functions of proteins, enzymes, nucleic acids, carbohydrates, and lipids; principles and theory of the utilization and synthesis of these materials by living systems, and the relationship of these processes to energy production and utilization. The course is recommended for pre-health students. No credit for Biochemistry majors.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 231 with C or better OR Pre- or corequisite(s): CHM 234 or CHM 334 with C or better if completed OR Visiting University Student
BCH	367	Elementary Biochemistry Lab	Qualitative/quantitative analyses of constituents of biological systems, enzyme activity measurements and metabolic studies.	N		REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 361 or LSC 366 with C or better if completed OR Visiting University Student
BCH	371	Modern Concepts Biochemist	Detailed examination of the chemical structure, conformation and function of proteins, carbohydrates, lipids and nucleotides; analysis of the energetics, enzymes and control of the metabolic pathways by which these molecules are degraded or synthesized.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 182 with C or better; CHM 234 with C or better; CHM 238 with C or better or Forensic Science BS major OR Visiting University Student
BCH	372	Modern Concepts Biochemist Lab	Analyzes protein structure, purification and function using spectroscopic, chromatographic, electrophoretic and other methods.	N		LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BCH 371 OR Visiting University Student
BCH	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects. May be repeated for total of 6 semester hours.	N		RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	461	General Biochemistry	Structure, chemistry, and metabolism of biomolecules and their role in the biochemical processes of living organisms.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; Corequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better if completed OR Visiting University Student
BCH	462	General Biochemistry	Continuation of BCH 461.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 461 with C or better OR Visiting University Student
BCH	463	Biophysical Chemistry	Principles of physical chemistry as applied to biological systems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better OR Visiting University Student
BCH	467	Analytical Biochemistry Lab	Quantitative analysis, separation and purification of biological molecules. Applies chemical and physical methods to the characterization of biological macromolecules.	N		REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): BCH 462 with C or better if completed OR Visiting University Student
BCH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
BCH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
BCH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BCH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	501	Current Topics in Biochemistry	-	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: Graduate students (degree and nondegree); Credit is allowed for only BCH or CHM 520
BCH	561	Adv Topics in Biochemistry	Topics selected from emerging areas of biochemistry based primarily on current literature.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BCH	568	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCS	101	Elementary Serbo-Croatian	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	102	Elementary Serbo-Croatian	See BCS 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	201	Intermediate Serbo-Croatian	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	202	Intermediate Serbo-Croatian	See BCS 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	311	Bos/Croat/Serb Comp&Conv I	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 202 with C or better; Credit is allowed for only BCS 311 or BCS 394 (Serbo-Croatian Conv & Comp I) or SLC 394 (Serbo-Croatian Comp/Conv) OR Visiting University Student
BCS	312	Bos/Croat/Serb Comp&Conv II	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 311 with C or better; Credit is allowed for only BCS 312 or BCS 394 (Bosnian/Croatian/Serbian Composition and Conversation II)
BCS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
BCS	495	Serbo-Croatian/Heritage Speakr	Generates professional proficiency by developing communicative and written competency in standard literary Serbo-Croatian.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		
BDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Energy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Energy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Energy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Energy	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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BDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		
BDE	702	Biological Design II	Emphasizes the integrative areas of computational bioinformatics, systems biology, and synthetic biology, and their application in biomedical research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	100	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	108	Concepts in Plant Biology	Introduces concepts of plant biology that are of human relevance using commercially important, edible, and medicinal plants as examples. Not for majors in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	109	Field Natural History of AZ	Studies the common plants and animals of Arizona including their distribution, adaptations, behavior and ecology. Introduces basic field techniques used in the study of natural history. Off-campus field trips. Cannot be used for major credit in the biological sciences.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	
BIO	112	Discovery - Why Sex?	"Why?" is a question that animates the youngest of children to the most seasoned of scientists. The acts of asking and answering "Why?" highlight the integrated nature of scientific knowledge and discovery. Demonstrates scientific disciplines are not walled cities in which knowledge is neatly segregated from lines of inquiry and knowledge in other disciplines. Instead, scientific concepts weave throughout and between disciplines and scientists increasingly rely on colleagues from different scientific fields to find answers to scientific questions. So our journey to find responses to the question "Why Sex?" takes us not just to biology, but also to earth science and to physics. Along the way, scientists are linked together not only through concepts that crosscut the disciplines, but also in their reliance upon key scientific skills such as the ability to observe, think critically, measure, gather data and communicate their findings.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Credit is allowed for only BIO 112 or BIO 194 (Discovery: Why Sex?) OR Visiting University Student
BIO	113	Dinosaurs	Principles of evolution, ecology, behavior, anatomy and physiology using dinosaurs and other extinct life as case studies. Geological processes and the fossil record. Cannot be used for major credit in the biological sciences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Credit is allowed for only BIO 113 or LSC 294 t 2 (Dinosaurs)
BIO	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
BIO	140	Grk&Lat Roots Biosctfc Trmngly	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student

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BIO	151	Biological Thinking	The science behind the science of life. Masters the core concepts of modern biology, understands the scientific discoveries that lie behind those concepts, and develops scientific reasoning skills so that students can contribute discoveries of their own.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): Life Sciences student; ALEKS score below 61; Credit is allowed for only BIO 100 or BIO 151 OR Visiting University Student
BIO	160	Intro. to Anatomy & Physiology	Terminology and essential concepts in human anatomy and physiology, as well as the structure and function of the human body. Designed for students in the health-related professions. Acquaints the student with human anatomy, structure and function, and basic disease concepts. Organizes and presents course concepts by organ systems, and the laboratory component of the course emphasizes human structure and function. The course has 3 contact hours for lecture and 2 contact hours for lab per week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	
BIO	181	General Biology I	Biological concepts emphasizing principles and the interplay of structure and function at the molecular, cellular, and organismal levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Credit is allowed for only BIO 181 or BIO 281 or BIO 282 OR Visiting University Student
BIO	182	General Biology II	Biological concepts emphasizing principles and the interplay of structure and function at the organismal, population, and community levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 181 with C or better; Credit is allowed for only BIO 189 or BIO 281 or BIO 282 OR Visiting University Student
BIO	189	SOLUR Apprentice	Students gain exposure to contemporary issues in research excellence, mentoring skills and professional development. Enriches individual lab research experiences for students by bringing them together in a peer-community environment. Introduces the resources students have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning. Rigorously evaluates their research processes and products in light of their eventual professional plans.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 2.75 GPA; Credit is allowed for only BIO 189 or BIO 194 (SOLS Undergraduate Research Apprentice) OR Visiting University Student
BIO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	201	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	
BIO	202	Human Anatomy & Physiology II	Studies the structure and function of the human body. Topics include cardiovascular, respiratory, lymphatic/immune, endocrine, renal, digestive, and reproductive systems. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 201 with C or better OR Visiting University Student
BIO	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function--e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 230 or BMY 230
BIO	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB & G	Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introduction to Evolutionary Medicine) OR Visiting University Student
BIO	281	ConceptualApproachBioMajors I	Covers the themes and concepts that underlie the molecular biology of cells and multicellular organisms as well as the biological processes that shape the diversity of organisms on our planet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): School of Life Sciences student; Credit is allowed for only BIO 181 or BIO 182 or BIO 281 OR Visiting University Student
BIO	282	ConceptualApproachBioMajors II	Builds upon established conceptual foundations, covers the themes and concepts underlying organismal biology, with an emphasis on physiology and ecology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): School of Life Sciences student; BIO 281 with C or better; Credit is allowed for only BIO 181 or BIO 182 or BIO 282 OR Visiting University Student

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BIO	289	SOLUR Researcher	Students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development in this seminar. Enriches individual lab research experiences students by bringing them together in a peer-community environment. Introduces students to the resources they have at their disposal (e.g. on campus, online) to facilitate research productivity and career planning. Rigorously evaluates their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): School of Life Sciences major; minimum 3.00 GPA OR Corequisite(s): BIO 310, or BIO 494 (Advanced Study Practicum), or BIO/HPS/MBB/MIC 484/492/493/495/496/499 OR Visiting University Student
BIO	293	Health Sciences Workplace	Provides exposure to the health science workplace and helps students explore the full range of careers that are open to those who major at the undergraduate level in the health sciences including managerial and administrative aspects. Includes short presentations by professionals in a variety of fields, including biotechnology and bioenterprise, business and the health sciences. Ample opportunities for questions and personal interactions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		
BIO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	301	Field Natural History	Organisms and their natural environment. Cannot be used for major credit in the biological sciences. Both BIO 300 and BIO 301 must be taken to secure SQ General Studies credit	N	PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1	SG	Pre- or corequisite(s): BIO 300 or LSC 310 with C or better if completed
BIO	302	Cancer-Mother of All Diseases	History of cancer; disease statistics; pathogenesis; diagnosis, treatment and prevention; case studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181, BIO 182, BIO 201, BIO 281, BIO 282, MIC 205, or MIC 220 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	303	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student
BIO	304	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
BIO	305	Biology Behind the Crime Scene	Explores biological technology behind forensic techniques like fingerprinting, Polymerase Chain Reaction (PCR), and paternity testing.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Pre-requisites: Minimum Sophomore standing
BIO	306	Modes of Biological Thought	Involves students in the process of biological discovery to examine how we identify truth in biological science.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ENG 101 or 105 with C or better; BIO 181 (or BIO 188) and BIO 182 (or BIO 187) with C or better OR Visiting University Student
BIO	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
BIO	309	Plant Anatomy	Development and mature structure of tissues of vascular plants; patterns and modifications of the leaf, stem, root, and flower.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	310	Special Problems & Techniques	Qualified undergraduates may investigate a specific biological problem under the direction of a faculty member.	N	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	311	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student
BIO	312	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student

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BIO	313	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
BIO	314	Rsch Colloquium/Biology/Soc I	Develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): Biological Sciences (Biology and Society) BS major; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	315	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Minimum 35 hours; Credit is allowed for only ENG 370 or BIO 315
BIO	316	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
BIO	317	History of Science II	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student
BIO	318	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
BIO	320	Fundamentals of Ecology	Organization, functioning, and development of ecological systems; energy flow; biogeochemical cycling; environmental relations; population dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better; CHM 116 or 118 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	321	Introductory Ecology Lab	Lab and field observations and experiments to test current concepts and theories in ecology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 320 with C or better if completed OR Visiting University Student
BIO	322	Conservation of Biodiversity	Species-level approaches to the protection, management, and restoration of biological resources from scientific and policy perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	323	Ecosys Restoration&Management	Ecosystem-level approaches to the protection, management, and restoration of biota and ecosystem processes from local to global scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	324	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student
BIO	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
BIO	327	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ASM 104, BIO 181 or 282 with C or better; Credit is allowed for only ASM 342 or BIO 327
BIO	328	History of Science I	Development and application of scientific thinking from ancient times through the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 328 or HPS 322 OR Visiting University Student
BIO	331	Animal Behavior	Theories of evolutionary, genetic, physiological, and ecological bases of animal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for only BIO 331 or LSC 331 OR Visiting University Student

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BIO	340	General Genetics	Science of heredity and variation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prereqs w/C or btr: non-Molec Biosci&Biotec maj; BIO 181; BIO 182 OR non-Molec Biosci&Biotec maj; BIO 181, BIO 281 or MBB 245; MBB 247 OR non-Molec Biosci&Biotec maj; BIO 281; BIO 282; Credit allowed for BIO 340 or MBB 347 OR Visiting University Student
BIO	342	General Genetics Laboratory	Explores general principles of inheritance with special reference to Mendelian, molecular, and computational genetics via lab experiments.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 340 with C or better OR Visiting University Student
BIO	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 343 or MBB 343 OR Visiting University Student
BIO	345	Evolution	Processes of adaptive change and speciation in sexual populations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340, LSC 347, or MBB 347 with C or better OR Visiting University Student
BIO	351	Developmental Biology	Principles of developmental biology, including the development of major organ systems and their underlying molecular and cellular mechanisms. Illustrated mainly using vertebrate examples.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better OR Visiting University Student
BIO	352	Lab in Vertebrate Dev Anatomy	Morphology of representative embryonic and adult vertebrates.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Pre- or corequisite(s): BIO 351 with C or better OR Visiting University Student
BIO	353	Cell Biology	Surveys major topics in cell biology, including structural, biochemical, and molecular aspects of cell function.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182; CHM 116 or 118 OR BIO 281; BIO 282; CHM 116 or 118 OR Biomedical Engineering BSE major; BIO 181; CHM 114 or 116 OR Visiting University Student
BIO	354	Cell Biology Laboratory	Investigational lab using modern molecular and cellular techniques to analyze molecular, biochemical, and anatomical traits of cells.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BIO	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
BIO	357	Cell & Molecular Bio Lab	Laboratory concepts and techniques central to cell biology and molecular biology emphasize principles and the interplay of these two sub disciplines. Intended for life sciences, biology, and health-related science majors.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 with C or better; Credit is allowed for only BIO 357 or BIO 394 (Cell and Molecular Biology Laboratory) OR Visiting University Student
BIO	360	Animal Physiology	Principles and mechanisms of physiological regulation in animals, with a focus on humans.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	361	Animal Physiology Laboratory	Experimental lab studies of physiological mechanisms in animals and model systems.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 360 with C or better if completed OR Visiting University Student
BIO	370	Vertebrate Zoology	Characteristics, classification, evolution, and natural history of the major groups of vertebrate animals.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	385	Comparat Invertebrate Zoology	Characteristics, life cycles, adaptations, and evolution of invertebrate animals.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	386	General Entomology	Specialized focus on form, activities, and classification of insects.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student

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BIO	389	SOLUR Scholar	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N		SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): Life Sciences major; minimum 3.00 GPA OR Visiting University Student
BIO	390	Medical/Dental Field Placement	Field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
BIO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
BIO	403	Evolution Medicine & GIBL Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & GIBL Hlth) or ASM 503 or ASM 598(Evol Med & GIBL Hlth) or BIO 403 or BIO 494(Evol Med & GIBL Hlth) or BIO 510 or BIO 598(Evol Med & GIBL Hlth) OR Visiting University Student
BIO	405	Sonoran Desert Field Botany	Plants are the most important organisms on the planet and a fundamental knowledge of them is critical for any biological career--especially the fields of conservation, ecology, sustainability and systematics. Arizona is a diverse state and therefore, an ideal place to explore a wide variety of landscapes and their constituent plants. Introduces the important species of the Sonoran Desert within about a 50-mile radius of Tempe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is only allowed for BIO 405 or BIO 498 (Sonoran Desert Field Botany)
BIO	407	Novel Ecosystems	This primarily field course challenges preconceptions and received wisdom. Visit and discuss a variety of sites within about one hour's drive of ASU Tempe. These sites range from apparently relict desert mountain parks to effluent-dominated wetlands, active agricultural fields, newer and older commercial and residential areas, recreational ponds and (presently) abandoned vacant lots.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320; BIO 322 or 323 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 407 or BIO 494 (Novel Ecosystems) OR Visiting University Student
BIO	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
BIO	410	Techniques ConservationBio&Eco	Lecture, field, and laboratory experience in techniques used in conservation biology and ecology. Course is modular, with each module instructed by a discipline-specific expert (e.g., plant ecologist, mammal conservationist, soil ecologist).	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; BIO 320 with C or better; BIO 322 or BIO 323 with C or better
BIO	411	Quant Methods in Conserv & Eco	Quantitative methods in conservation ecology; develop mathematical models of ecological and natural resource systems and use the models to better understand and inform management of ecosystems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 320 or 322 with C or better; BIO 415 or STP 226 or STP 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
BIO	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412

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BIO	414	Rsch Colloquium/Bio/Society II	Further develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): BIO 314 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	415	Statistical Models for Biology	Statistical methods applied to biological problems, design of experiments, estimation, significance, analysis of variance, regression, correlation, chi square, and bioassay; the use of computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	CS	Prerequisite(s): MAT 210, MAT 251, MAT 265, MAT 270, STP 226, or STP 231 with C or better; Credit is allowed for only BIO 415 or BIO 514 OR Visiting University Student
BIO	416	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only BIO 416 or HPS 410 OR Visiting University Student
BIO	417	Experimental Design	Fixed, random, mixed models; crossed and nested factorial designs; balanced and unbalanced data; completely randomized, blocked, repeated measure designs; ANCOVA.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 415 with C or better
BIO	418	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: ABS 370 or BIO 320. Credit is allowed for only ABS 434 or BIO 418
BIO	419	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 or PLB 308 with C or better; Credit is allowed for only BIO 419 or PLB 419 or BIO 519 or PLB 519
BIO	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student
BIO	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student
BIO	422	Ecosystem Ecology	Explores the structure, development and dynamics of ecosystems, with a focus on the exchange of energy and materials between the atmosphere, soils, water, biosphere, and anthro-sphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 422 or BIO 494 (Ecosystem Ecology)
BIO	423	Population & Community Ecology	Organization and dynamics of population and communities. Theoretical and empirical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better
BIO	425	Marine Conservation Ecology	Marine conservation biology is increasingly important for society, as evidenced by frequent media coverage and the recent report by the U.S. Commission on Ocean Policy. Expect exposure to multiple perspectives on important conservation issues in the marine environment and gain valuable experience in critical thinking, communication skills, and the use of science in effective debate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	426	Limnology	Structure and function of aquatic ecosystems, with emphasis on freshwater lakes and streams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3-4	L	Prerequisite(s): BIO 320 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	427	Fire	A survey of fire on Earth--history, ecology, behavior, and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)

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BIO	430	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
BIO	431	Genes, Development & Evolution	Contribution of genes, developmental processes, and evolution to pattern of phenotypic variation, including disease.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; ENG 101, 105, or 107 with C or better OR BIO 281 with C or better; BIO 282 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	432	Why People Steal,Cheat,and Lie	Explores the ecological and evolutionary causes of selfishness and cooperation in human societies. Students apply biological models to predict patterns of behavior in human populations and evaluate these models with empirical data. Develops new scientific and philosophical perspectives on human behavior by integrating ideas from complementary disciplines, including biology, psychology, anthropology, criminology, sociology and philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB	Prerequisite(s): BIO 182 or 282; Credit is allowed for only BIO 432 or BIO 494 (Why People Steal, Cheat, and Lie) OR Visiting University Student
BIO	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: MAT 117 or higher or SOS 101; junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Svcs:People&Nature)
BIO	435	Rsch Technique/Animal Behavior	Experimental and field studies of animal behavior; description and quantification of animal behavior and interpretation of behavior within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better
BIO	436	Sociobiology & Behavioral Ecol	Surveys animal and human social behavior examined from ecological and evolutionary perspectives using theoretical and empirical constructs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better OR Visiting University Student
BIO	438	Marine Biology	Covers the marine habitat, the organisms that live in it and their ecology, in the open water as well as on the sea floor, from coasts to open sea. Includes aspects of oceanography, ecology and biology of marine organisms, ranging from the smallest plankton to whales, as well as issues related to the changing marine environment and conservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): with C or better: BIO 181; BIO 182; BIO 320 or 325 OR BIO 281; BIO 282; BIO 320 or 325; Credit is allowed for only BIO 438 or BIO 494 (Marine Biology) or LSC 434 OR Visiting University Student
BIO	439	Computing for Research	Works mainly with command-line programs for data analysis, with a major focus on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class trouble-shooting and for out-of-class assignments where students work on problem-solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for BIO 439 or BIO 539 or EVO 539 or MCB 539 or BIO 498 (Computing Rsrch) or BIO 598 (Computing Rsrch) or EVO 598 (Computing Rsrch) or MCB 598 (Computing Rsrch)
BIO	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
BIO	443	Appld Molecular Genetics/Genom	Nature and function of the gene; emphasizes the molecular genetic disease states; molecular biology; regulation of gene expression; genomics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): LSC 347 with C or better; CHM 233 with C or better; CHM 237 with C or better
BIO	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ASM 301, BIO 340, LSC 347, or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 446 or BIO 546 OR Visiting University Student
BIO	450	Advanced Developmental Biology	Current concepts and experimental methods involving differentiation and biosynthetic activities of cells and organisms, with examples from microorganisms, plants, and animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 351 with C or better

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BIO	451	Cell Biotech: Cell Culture	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they will collect data, do analysis and prepare the results for a final project presentation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 343, BIO 353, MBB 343 or MBB 347 with C or better; Credit is allowed for only BIO 451 or BIO 551 OR Visiting University Student
BIO	453	Animal Histology	Microscopic study of animal tissues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 201, 353, or 360 or MIC 220
BIO	461	Comparative Animal Physiology	A comparative approach to understanding the function of animal physiological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	462	Endocrine Physiology	Mechanisms of action of hormones; endocrine control of homeostasis, growth, stress responses, and reproduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	465	Neurophysiology	Detailed treatment of cellular and organismal neurophysiology and nervous system function.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	467	Neurobiology	Introduces major areas of neurobiology, from fundamental cellular and molecular processes through systems neuroscience and neural bases of behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	471	Ornithology	Biology of birds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	472	Mammalogy	Classification, structure, habits, ecology, and distribution of mammals, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	474	Herpetology	Classification, structure, habits, ecology and distribution of reptiles and amphibians, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	475	Adv. Human Anatomy	Continues study of the human body. Specifically, explores and differentiates anatomic concepts at an advanced level. Additional didactic assignments designed to facilitate critical evaluation of pathophysiological principles and common misconceptions of human physiology, as well as a capstone presentation project. Grades are determined by class exercises, presentations and a series of critical thinking exercises.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR BIO 360 with C or better; Credit is allowed for only BIO 475 or BIO 494 (Advanced Study Practicum: Anatomy & Physiology) OR Visiting University Student
BIO	476	Cellular & Molecular Neuro	Explores the cellular and molecular neurobiology of the central nervous system across many levels (genetic, molecular, cellular and network) by examining the principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	477	Systems & Behavioral Neuro	Explores the functions of the nervous system across many levels (genetic, molecular, cellular and network) in regard to how neural systems produce behavior, and how problems (e.g., injury, disease) of the CNS arise and can be overcome. Examines principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	480	Methods of Teaching Biology	Methods of instruction, experimentation, organization, and presentation of appropriate content in biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		

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BIO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
BIO	489	SOLUR Fellow	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): School of Life Sciences majors; minimum 3.50 GPA OR Visiting University Student
BIO	490	Surgical Field Placement	Advanced field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 390 with C or better OR Visiting University Student
BIO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
BIO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BIO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
BIO	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
BIO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
BIO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	502	Trans Electron Microscopy	Theory, use, and methods of preparing biological materials for transmission electron microscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Pre/Co-requisites: BIO 504
BIO	503	Bioimaging Lab	Provides a fundamental understanding of light-based microscopy through the training and use of instruments contained within the SOLS Keck Bioimaging laboratory. Examines the use of bright field, contrast, epi-fluorescent, total internal reflective fluorescence (TIRF), confocal, multiphoton and atomic force microscopy and how they are applied to various research applications. Additional focus given toward image ethics, analysis, and presentation using programs such as Adobe Photoshop and ImageJ. During the second half of the semester, students propose and develop an experimental project, based on their graduate research, in which they collect data, do analysis, and prepare results for a final project presentation.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 504, MCB 504, or BIO 598 (Bioimaging Current Techniques)
BIO	504	Bioimaging	Lecture survey of modern techniques for imaging tissues, cells, and macromolecules, including light microscopy (e.g. video, fluorescence, confocal, multiphoton, single molecule), electron microscopy (e.g. transmission, scanning, cryogenic, tomographic) and ancillary techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	6		Pre-requisites: Graduate student; Credit is allowed for only ASM, BIO or MCB 506

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BIO	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)
BIO	510	Evolutionary Medicine	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth)
BIO	514	Statistical Models for Biology	Fundamental concepts of statistics and how to apply a range of standard statistical tools to the analysis of biological data. Uses the software applications SPSS and R to carry out these tests, and how to identify the particular situations in which each test is appropriate. Topics include: basic probability, descriptive statistics, estimation, hypothesis testing, t-tests, analysis of variance, regression, correlation, chi-square analysis, randomization tests, and nonparametric statistics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 415 or BIO 514
BIO	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
BIO	516	Foundations of Bioethics	Advanced introduction to the theoretical and normative foundations of the field of bioethics.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
BIO	518	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518 or HPS or HST 516
BIO	519	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 519, PLB 419 or PLB 519
BIO	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521
BIO	522	Populations: Evolutionary Ecol	Principles of population biology and community ecology within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum & Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum & Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum & Env Sys)
BIO	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
BIO	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
BIO	530	Scientific Teaching	Guides graduate students to better understand issues related to undergraduate learning in science courses, and prepares students to become more effective teachers. Topics focus on emerging research that supports active and student-centered learning activities as well as methods that include the 5Es, concept-mapping, and "backward" design. Students reflect on their own teaching philosophy, and begin building an ePortfolio documenting and validating their ability to teach effectively.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 530 or 591 (Scientific Teaching)
BIO	531	Adv. Scientific Teaching	Further develops the teaching abilities of graduate students by applying knowledge into the more advanced teaching activities including large class sizes, diverse student populations, online delivery, and technology-integrated teaching. Students have more in-depth practice fully developing lesson plans, assessments and other teaching activities based on the concepts of evidence-based teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 531 or BIO 594 (Advanced Scientific Teaching)
BIO	532	Recent Papers in Discipline	Discipline-based education research is a newly emerging scholarly field that combines the knowledge of teaching and learning with the deep knowledge of discipline-specific science content. Currently, discipline-based education research is being used to transform the way we teach undergraduate science courses. Readings in recent papers in the field of discipline-based education research, spanning the disciplines of physics, chemistry, geosciences and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
BIO	541	SOLS Seminar Series	Explores cutting-edge research in the life sciences as presented by distinguished experts at Arizona State University and beyond, representing a diversity of concepts and perspectives.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	542	SOLS Current Topics	Explores current topics in the life sciences by discussing scientific experiments and results with peer scientists. Practices interpreting results and determining the significance of experimental findings, and gains experience with the culture of scientific discourse by giving short presentations, asking and answering questions.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	543	Molecular Genetics & Genomics	Advanced study of genetics, focusing on the molecular basis of inheritance and gene expression in eukaryotes and prokaryotes, and study of genomics, or the high-throughput analysis of the entire organism's genes and their function. Knowledge of general genetics recommended before registering for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	545	Populations Evolution Genetics	Mathematical models in the description and analysis of the genetics of populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 446, 546, BIO 446 or 546
BIO	549	Phylogenetic Biology&Analysis	Basic theory and general concepts of phylogenetic inference as well as practical, hands-on experience with many of the commonly used methods for inferring and interpreting phylogenetic trees.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	551	Cell Biotechnology	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they collect data, do analysis and prepare the results for a final project presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 451 or BIO 551 or BIO 598 (Cell Biotechnology Laboratory)
BIO	552	Developmental Genetics	Genetic approaches to the analysis of development during the life cycle of eukaryotic organisms, and the role of genes in the unfolding of the differentiated phenotype.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
BIO	564	Cellular Physiology & Signaling	Emphasizes the molecular basis for cell structure, function and intercellular signaling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568
BIO	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
BIO	571	Evolutionary Medicine Capstone	Provides a culminating experience in which students bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that students carry out to demonstrate their ability to integrate the core concepts of evolutionary thinking and analysis; and places disease in the context of changing environments, exposures and the encompassing ecology of life in which an individual is embedded. Demonstrations weave perspectives from biology, anthropology, public health and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Evolutionary Medicine graduate certificate student
BIO	578	Environmental Leadership & Com	America remains inactive about the ramifications of critical societal challenges such as climate change, environmental hazards and living sustainably, and less than 2% of Congress has any professional background in science. Environmental issues are no longer local and solutions cannot remain provincial. Scientists must become envoys of knowledge that is global; science is now part of an unavoidable and contentious public discussion on these issues, and we need it to catalyze solutions. Increasingly, scientists who are communicators are moving into positions of leadership, engaging with society and changing their academic institutions from within. This seminar provides leadership training and important skills for early career scientists to communicate science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 578 or BIO 591 (Environmental Leadership and Communication)
BIO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	597	Capstone	Provides a culminating experience for the MS Biology degree. Students bring together knowledge learned in prior courses in a way that is meaningful and relevant to their professional goals. Each student must summarize current knowledge on an important topic in the biological sciences, and demonstrate his or her ability to integrate core concepts of biological thinking.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	610	Intro Resp Conduct Research	Introduces ethical and regulatory issues in the nine core areas of responsible conduct of research. Discusses real and hypothetical cases that tie broad ethical considerations to current concern of scientists.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	611	Topics Resp Conduct Research	Explores a single topic in the responsible conduct of research in depth. Topic changes depending on current issues in responsible conduct of research as well as the interests of the instructor and students. Possible topics include: responsible authorship; conflicts of interest; human subjects research; and misconduct, data management, and academic integrity.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
BIO	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
BIO	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO or HPS 620
BIO	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	100M	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	130M	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	201M	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SG	
BIS	343	Social Processes in Orgs	Examines the interdisciplinary nature of social processes and human interactions across a number of different organizational contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
BIS	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student
BIS	350	Diversity and Organizations	Critical interdisciplinary analysis of individual, cultural, and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours. Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
BIS	353	Interdisciplinary Leadership	Offers interdisciplinary perspectives on the theory and practice of leadership in a range of organizational environments	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing
BIS	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
BLE	220	Foundations of SEI	Examines current educational practices and historical legal issues. Prepares teacher candidates with a provisional Structured English Immersion endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): non-Educational Studies BAE majors; ENG 101, 105, or 107 with C or better OR Visiting University Student
BLE	221	Theories Acquiring& Learn Lang	Languages are tools people use and learn to use for a variety of purposes. While nearly all people naturally acquire at least one language in their lifetime, the construct of bilingualism or multilingualism can occur as either an elective or a forced process. The context or the decision that leads to second or multiple language learning can have profound effects on the way and the extent to which those languages are learned. Examines the variables affecting both language acquisition and language learning as well as some methods to better facilitate these processes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student
BLE	322	Reading Methods BLE/ESL	Instructional/assessment strategies, including systematic, research-based phonics, vocabulary, comprehension, spelling, writing, phonemic writing in Spanish/English.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	324	Soc Studies/Diverse Lang Clsm	Social studies education standards, curriculum, and instructional strategies for English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	335	Language Diversity-Classrooms	Issues in sociolinguistics and language variation in schools with a focus on classroom interaction, instruction, curriculum, assessment, and language policy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
BLE	336	Cultrly Sust&Transf Pedagogies	Prospective educators examine culturally sustaining and transformative pedagogies (CSTP). Use of CSTP frames their reflection on educator positionality, attunement to cultural and community knowledge resources in field experiences, and development of their own teacher praxis plans oriented toward CSTP.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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BLE	396	Clinical Experience I	Applies course content in BLE/ESL elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	397	Clinical Experience II	Applies course content in BLE/ESL elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	400	Prin of Language Minority Educ	Overview of philosophical and theoretical foundations of bilingual education and ESL models of instruction. Other topics include significant legislative and judicial measures.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
BLE	407	SEI for Secondary Students	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the 7-12 classroom.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
BLE	408	SEI for Linguistically Diverse	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the K-8 classroom.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
BLE	411	Sci Curr Instr Assess BLE/ESL	Methods, management strategies, and assessment procedures for teaching science to BLE/ESL students in elementary schools.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	412	Math Curr Instr Assess BLE/ESL	Teaching, management, and assessment of mathematics in K-8 BLE/ESL settings.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	413	Language Arts in BLE/ESL Sett	Literacy and language arts instruction; assessment of reading and writing; transition literacy skills, particularly critical reading of content.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	436	Equitable Pract Diverse Class	Provides theoretical lenses to analyze the culture of schools and classrooms and equips future educators to recognize the hidden curriculum in classroom organization, student regulation and disciplinary actions, discourse, relationships, pedagogical choices, and other environmental and curricular factors that perpetuate inequities. Explores tools and approaches to transform the educational context and to advocate for just and equitable learning experiences for historically marginalized youth.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
BLE	478	Student Teaching: BLE/ESL EED	Student teaching in BLE/ESL elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N		PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
BLE	481	Reading Practicum	Applies concepts from BLE 414. Supervised school-based experiences in teaching reading to BLE/ESL students.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	511	Intro/Language Minority Educ	Historical, philosophical, theoretical, and pedagogical foundations of language minority education in the United States.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	520	ESL for Children	Examines approaches to second-language development for children congruent with recent research in second-language acquisition in children.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	522	Literacy/Biliteracy Developmnt	Acquaints teachers with first- and second-language literacy research, practice, and assessment in elementary school settings (Spanish-English emphasis)	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	529	Lang Assess & Eval ESL/BLE St	Assessment and evaluation of linguistic minorities; test theory, score interpretation; culturally responsive assessment; assessment of language and school achievement.	N		SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	534	Lang Pcly Pwr Past Present	Examines theories, concepts and findings in language policy and planning for educating multilingual learners locally, nationally and globally.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	535	Sociolinguistic Iss/Bilingual	Surveys major theoretical issues (e.g., language situations, communicative competence, language attitudes) interrelating language, social processes, and bilingual education.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	536	Ed for Social Transformation	Theoretical and practical issues concerning education for social transformation. Recognizes features, reflections, affordances and challenges to transforming education through interactions and exchanges. Also considers assessment frameworks to assist educating multilingual learners.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BLE	537	Linguistics for Educators	Main theories and approaches within linguistics and their application to language learners in educational contexts. Areas include phonetics, phonology, morphology, syntax and translanguaging.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510
BLE	538	Mthd Educate Mltilingual Lrnrs	Applied methods and pedagogies for educating multilingual learners. Includes pedagogies supported by second language acquisition (including multilingual perspectives); multiliteracies; and bilingualism including heteroglossic bilingual instructional practices, translanguaging practices, critical multilingual awareness and complex language/literacy use.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	561	Parent Involvement in Language	Examines issues, approaches, and strategies for improving parental and community involvement in the schooling of language minority children and youth.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; minimum 9 hours in English as a Second Language MA program
BLE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	597	Capstone	Reflective, experience-based integration of theory and practice; professional development for individuals working with English language learners.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MA English as a Second Language major
BLE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BMD	500	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMD	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502

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BMD	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMD	510	Curr Perspectives BMD Diagnost	Seminar course using external speakers who review the current state of the biomedical diagnostics industry in terms of technology, regulation or legal issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511
BMD	513	Prin Diag Tech Immunoassays	Provides a detailed understanding of the theory and applications of advanced diagnostic assay systems and devices. Students gain knowledge in immunoassay design and validation with particular attention to the manipulation of the immune system for disease recognition. This module assumes no former knowledge of immunoassays, but some knowledge would be advantageous.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 513 or BMD 598 (Principles of Diagnostic Technology 2: Immunology)
BMD	514	Molecular Diagnostics	Survey course covering topics such as multiple types of analytes including DNA, RNA and protein; a multitude of disease application areas; major molecular diagnostic platforms; development of molecular diagnostics tests; sample preparation; and future prospects for molecular diagnostics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree or nondegree-seeking graduate student; Credit is allowed for only BMD 514 or BMD 598 (Molecular Diagnostics)
BMD	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550
BMD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA

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BMD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617
BMD	667	Regulation Medical Diagnostics	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate
BMD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	100	Intro to Biomed Engineering	Introduces engineering design methods, experimental practices, data gathering, presentation and statistical analysis. Lecture/labs focus on device design and application, including hands-on experience.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	111	Engr Perspectives/Biologic Sys	Biological concepts for the emerging engineer. Introduces biological and earth systems engineering, materials, structures, fluid mechanics, bioelectricity, and the dynamic, nonlinear nature of nature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering student OR Visiting University Student
BME	121	Programming in BME	Introduces computer programming in the context of scientific and engineering problem solving. Topics include loops, functions, pointers, data structures, and algorithms in the context of a biomedical problem. Culminates in an introduction to object-oriented programming, with a look at modern wireless (iPad and iPhone) devices for biomedical applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): MAT 265 or 270 OR Visiting University Student
BME	122	Statistics for Biomedical Eng	Introduces statistics tests in the context of common biomedical experiments. Students perform basic linear regression and correlation analyses, experiment using power analysis, generate descriptive statistics, and perform statistical tests using statistical software.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
BME	182	Biomedical Prod Dsgn & Dev I	Continuation of hands-on training and implementation of medical device product design and development skills; FDA-regulated U.S. and global medical device healthcare markets and opportunities, business development in regulated environments, medical product and project management planning, exempt and Class I medical devices, medical product component and device levels, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best-industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed OR Visiting University Student
BME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	200	Conservation Principles in BME	Applies bioengineering analysis and problem solving of mass, energy, and charge balances to medical and biological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s) with C or better: Biomedical Engineering BSE major; BIO 181; CHM 114 or 116; PHY 121; Pre- or corequisite(s) with C or better if completed: BME 210 or MAE 215; MAT 274 or 275 OR Visiting University Student

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BME	210	Programming for Biomed Engrs	Computers are ubiquitous tools in all engineering disciplines. Biomedical engineering pushes the limits of computational power in all applications--from small computers embedded in medical devices to large computer clusters used in research projects. Understanding the fundamental operation of computers, and how to efficiently and effectively program them, are critical knowledge and skills for biomedical engineers. Covers the fundamentals of computer architecture and operation, and how to program them. Utilizes the MATLAB and Python programming languages and prepares students for applying these languages for problem solving in upper-level biomedical engineering classes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3	CS	Prerequisite(s): Biomedical Engineering BSE major; MAT 265 or 270 with C or better; Pre- or corequisite(s): BME 122 with C or better if completed; MAT 266 or 271 with C or better if completed OR Visiting University Student
BME	211	MATLAB & Mathcad in BME	Introduces the basics of MATLAB and Mathcad programming in the context of biomedical engineering conservation of mass problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; CHM 114, 116 or 118 w/ C or better; BIO 181 w/ C or better; Pre- or corequisite(s): PHY 131 or 151 w/ C or better if completed; MAT 274 or 275 w/ C or better if completed OR Visiting University Student
BME	213	BME Ethics	Explores ethical issues in biomedical and medical sciences and engineering practices and includes professional ethics, medical ethics, engineering ethics and the Biomedical Engineering Society (BMES) Code of Ethics, the ethics of human and animal tissue and subjects use in biomedical science and engineering research, responsible conduct for research, ethical issues in the design and manufacture of medical devices for developing and developed countries, and the impact of biomedical engineering solutions on society and the environment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	214	FDA & Technical Communications	Develops writing skills to factually and effectively communicate all facets of biomedical product design and development activities that are required to successfully conceive, develop, and launch a medical device into the market place using the FDA quality systems best practices that are utilized by the health care technology industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed OR Visiting University Student
BME	235	Physiology for Engineers	Physiology of the nervous, muscular, cardiovascular, endocrine, renal, and respiratory systems. Emphasizes use of quantitative methods in understanding physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s) with C or better: Biomedical Engineering BSE major; BIO 181; CHM 114 or 116; Pre- or corequisite(s) with C or better if completed: BME 210 or CSE 110; PHY 121; PHY 122 OR Visiting University Student
BME	282	Biomedical Prod Dsgn & Dev II	Hands-on training and implementation of product design skills that combine virtual analytical model prototype development with component and sub-assembly integration to develop both virtual and physical prototypes of a medical device product at the product architecture level and verify selected product architecture specifications from design input and earlier design process verification steps.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	300	Bioengineering Product Design	The fundamentals of financial and organizational structure of business and how it influences bioengineering analysis, design, and decision making; biomedical ethics and device and drug regulation; and fundamentals of business and technical management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 100 or FSE 100 with C or better; BME 213 with C or better; BME 214 with C or better; ENG 102, 105, or 108 with C or better; minimum junior standing OR Visiting University Student
BME	301	Numerical Methods in BME	Applications of numerical methods to biomedical engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student
BME	316	Biomechanics for BME	Biomechanics provides conceptual and mathematical tools that are necessary for understanding how living things move. Focuses on human biomechanics with an emphasis on the musculoskeletal system.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; PHY 121 with C or better; PHY 122 with C or better; Pre- or corequisite(s): BME 235 or BIO 202 with C or better if completed OR Visiting University Student

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BME	318	Biomaterials	Material properties of natural and artificial biomaterials. Tissue and blood biocompatibility. Uses of materials to replace body parts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): Biomedical Engineering BSE major; BIO 181 with C or better; BIO 202 or BME 235 with C or better; CHM 114 or 116 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
BME	322	Statistics for BME	Introduces parametric and nonparametric statistics tests in the context of common biomedical experiments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student
BME	331	Transport Phenomena for BME	Transport phenomena with emphasis on momentum, energy, and mass transport in living systems, medical devices, and other therapeutic/diagnostic applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200, 212, or 294 (Conservation Principles) with C or better; MAT 274 or 275 with C or better; PHY 121 with C or better OR Visiting University Student
BME	340	Thermodynamics for BME	Thermodynamics is a branch of science dealing with processes (chemical or mechanical) and the subsequent energy and mass transfers. Studies whether a process is favorable (possible) or unfavorable (impossible) while assessing energy and mass transfer within each specific stage of the process. The operation of living systems is heavily based on the use of chemical reactions and or mechanical processes such as beating of the heart, biochemical reactions of a drug in liver, phase equilibria. Covers the fundamental principles and laws of thermodynamics. Helps students think thoroughly about the applications of thermodynamics in biological sciences and bioengineering with the main emphasis on basic concepts and problem-solving skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
BME	350	Signals & Systems for Bioengrs	Applies principles of calculus and ordinary differential equations to analysis and computer processing of biosignals and linear modeling of biosystems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better; Pre- or corequisite(s): EEE 202 with C or better if completed OR Visiting University Student
BME	360	Control in Biological Systems	Illustrates the basic principles of control through examples from evolved and synthetic biological systems. Surveying topics including feedback and feedforward control mechanisms, insulation of circuits via modularity, and discovering optimal intervention strategies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BIO 353 with C or better; EEE 202 with C or better; MAT 275 with C or better; Pre- or corequisite(s): BME 362 with C or better if completed OR Visiting University Student
BME	362	Methods Molecular & Cell Bio	Gives junior-level undergraduate students hands-on experience on the methods used in molecular and cellular biology lab, especially methods to engineer or analyze DNA and protein.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BME	370	Microcomputer Apps in BME	Uses microcomputers for real-time data collection, analysis, and control of experiments involving actual and simulated physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; EEE 202 with C or better; BME 350 with C or better
BME	382	Biomedical Prod Dsgn & Dev III	Continuation of hands-on training and implementation of medical device product design and development skills; experimental practices, data gathering, presentation, and statistical analysis in regards to demonstration of validation and verification tools and testing, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; BME 182 with C or better; BME 282 with C or better OR Visiting University Student
BME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	413	Biomedical Instrumentation	Principles of medical instrumentation. Studies of medical diagnostic instruments and techniques for the measurement of physiologic variables in living systems. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3	L	Prerequisite(s): Biomedical Engineering BSE major; BIO 202 or BME 235 with C or better; BME 350 with C or better; ENG 101, 105, or 107 with C or better; Corequisite(s): BME 423 OR Visiting University Student

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BME	416	Advanced Biomechanics	Mechanical properties of bone, muscle, and soft tissue. Static and dynamic analysis of human movement tasks such as locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; BME 316 with C or better
BME	417	Biomed Engr Capstone Design I	Technical, regulatory, economic, legal, social, and ethical aspects of medical device systems engineering design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s) with C or better: Biomedical Engineering BSE major; BME 122; BME 300; BME 301; BME 316; BME 318; BME 331; BME 360 or 370; BME 382; ECN 211 or 212; ENG 101, 105, or 107.
BME	423	Biomedical Instrumentation Lab	Lab experience with problems, concepts, and techniques of biomedical instrumentation in static and dynamic environments. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1	L	Prerequisite(s): Biomedical Engineering BSE major; ENG 101, 105, or 107 with C or better; Corequisite(s): BME 413 OR Visiting University Student
BME	434	App of Bioengineer Transport	Develops mathematical models of transport phenomena in physiological systems, medical devices, and pharmacokinetic analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 331 with C or better
BME	465	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME 350 or EEE 304; Credit is allowed for only BME 465 or BME 494 (Principles Magnetic Resonance) or BME 565 or BME 598 (Principles Magnetic Resonance Spectroscopy & Imaging)
BME	467	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s) w/ C or better: Biomedical Engineering major; BME 318; BME 331; BIO 353; MAT 275; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine) OR Visiting University Student
BME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		
BME	490	Biomedical Engr Capstone II	Individual projects in medical systems or medical device design and development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s): Biomedical Engineering BSE major; BME 417 with C or better; ENG 101, 105, or 107 with C or better
BME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6		Prerequisite(s): Barrett Honors student
BME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BME	521	Neuromuscular Control Systems	Overview of sensorimotor brain structures. Application of nonlinear, adaptive, optimal, and supervisory control theory to eye-head-hand coordination and locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	525	Surgical Techniques	Principles of surgical techniques, standard operative procedures, federal regulations, guidelines, and state-of-the-art methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Pre-requisites: Graduate Engineering students only

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
BME	526	Intro to Neural Engineering	Introduces the field of neural engineering. Neural engineering, as with all engineering fields, can be thought of as applied scientific understanding, in this case, applied neuroscience. Covers aspects of neurophysiology, neuroanatomy, neurosurgery, biophysics, electronics and signal processing; integrates these knowledge areas into neural engineering applications. Covers an entire process for conducting research in neural engineering; surgical implantation of electrodes, data acquisition, processing neural signals, decoding neural data, and controlling prosthetic devices. Provides foundation for working with neural engineering applications and conducting research in neural engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BME 526 or BME 598 (Intro to Neural Engineering)
BME	527	Biomedical Device Design	Basic phenomena behind various types of biomedical devices which measure indicators using optical, thermal and other modalities. Provides an introductory coverage of the theory and history of these devices and includes some hands-on activities to use, reverse engineer and analyze data gathered from in-class activities with currently existing devices. Uses Matlab to perform most of the analysis. Preliminarily exposes students to principles of device design and testing with consideration to FDA regulations and requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): graduate Biomedical Engineering student; Credit is allowed for only BME 527 or BME 598 (Biomedical Device Design)
BME	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556
BME	561	Clinical Neuroscience	Fundamental mechanisms that underlie diseases and disorders of the central and peripheral nervous systems. Introduces assessment and pharmacological, surgical and rehabilitative management of nervous systems disorders. Prior knowledge of neural systems is helpful. Identifies the mechanisms by which key disease and trauma states impact neural systems and how clinicians identify the locus and type of damage based on clinical and imaging criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	564	Cyber Biomedical Systems	Engineering principles involved in the modeling, design and analysis of hybrid systems that involve computers controlling and interacting with biomedical systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BME 564 or BME 598 (Cyber Biomedical Systems)
BME	565	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering graduate student, Chemistry MS or PhD student, or Physics MS or PhD student; Credit is allowed for only BME 565 or BME 465 or BME 494 (Principles Magnetic Resonance) or BME 598 (Principles Magnetic Resonance Spectro & Imaging)
BME	566	Medical Imaging Instrumentatn	Design and analysis of imaging systems and nuclear devices for medical diagnosis, therapy and research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	567	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies. Prior knowledge of high-level engineering mathematics (up to differential equations), engineering transport concepts (particularly mass transfer), and biology is expected.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering graduate student; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine)
BME	568	HumanFactors&SystDsgnAssistTech	The field of human factors engineering as it relates to the design, development and use of assistive technology for individuals with sensory, motor and cognitive disabilities. Includes lectures, guest lectures, hands-on demonstrations and class discussions of relevant and current topics related to human-centered design of assistive technology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME graduate student; Credit is allowed for only BME 568 or BME 598 (IGERT: Human Factors)
BME	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BME	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		Pre-requisites: Graduate Bioengineering students only
BME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	101	Introduction to Bioinformatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Introduces topics in translational bioinformatics, such as sequence alignment, the Human Genome Project, gene expression analysis, genome-wide association studies, next-generation sequencing.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	102	Intro Pop Health Informatics	Applies information and computer science and technology to public health practice, research, policy and decision support. This new scientific area focuses on the capture, management and use of electronic public health data. Introduces the field of population health informatics and the current systems that are used for population health decision making. This is not a programming course or a mathematics course. While these backgrounds are prominent in the field, this course provides the history and context of the field and enables students to develop their own population health informatics system using techniques of their choice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		

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BMI	110	Introduction to Python	First in a series of courses on using the Python programming language to solve biomedical problems. Introduces Python as a language for object-oriented programming and for scripting tasks. Basic concepts and techniques of computation, data structure and software development. Examples focus on healthcare-related applications. Includes a broad knowledge of computation, Python programming, standard libraries, and commonly used techniques in data manipulation. Students develop a Python program to address a biomedical challenge in a term project.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only BMI 110 or BMI 294 (Introduction to Python)
BMI	201	Intro to Clinical Informatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Provides an introduction to biomedical informatics techniques and applications used in clinical environments. Includes searching and organizing free text information, decision analysis techniques and clinical decision support systems, and clinical applications including physician order entry used in electronic medical records. Also covers challenges in clinical informatics, including sociotechnical and cognitive issues in implementation and use.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
BMI	210	Data Structures in Python	Introduces concepts of data structures and algorithms (such as recursion, sorting, arrays, trees and dictionaries) and designing and implementation of Python code to efficiently resolve problems in biomedical research, healthcare and population health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 110 OR Visiting University Student
BMI	211	Modeling Biomedical Decisions	First semester of a three-semester course sequence surveying the methods and theories underlying the field of biomedical informatics. Explores models of medical decision making, including classical decision theory, Bayesian, and cognitive models. Also includes a component discussing evaluation methods in biomedical informatics.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	221	Knowledge Representation BMI	Introduces topics in knowledge representation and modeling, including frame-based systems, logic-based systems, rule-based systems, inference, and reasoning. Overview of history and present state of the field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	310	App Development for Pop Health	Covers core object-oriented language concepts. Enables learners to successfully apply object-oriented programming language features to develop multiplatform (work in iOS, Android and Windows phones) mobile apps. Final project allows learners to apply the knowledge and skills learned to develop a health solution.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BMI 310 or CSE 335 OR Visiting University Student
BMI	311	Modeling Biomedical Knowledge	Introduces concepts of artificial intelligence and knowledge modeling using medical informatics examples. Historical foundations and motivations of AI in medical applications; problem solving, reasoning, knowledge management, and planning as applied to medical informatics problems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	312	Modeling Biomedical Data	Third semester of a three-semester course surveying the methods and theories underlying the field of biomedical informatics. Explores methods of use in the design and maintenance of biomedical databases, machine learning techniques, information retrieval in biomedicine and other methods specific to bioinformatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	330	Topics Trans Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medicine research. Topics include bioinformatics data acquisition and management, including microarrays, database modeling and integration; analysis methodologies, including statistics and data mining; and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	332	Team Dynamics Healthcare IT	Teaches the fundamentals of leadership, management, and team dynamics in a project-focused software engineering environment, and with a focus on informatics and healthcare applications. Teaches students about team and group dynamics, recognizing dysfunctional teams, and helping to fostering productive group and leadership skills.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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BMI	404	Clinical Environments	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and exposes students to the clinical environments in which health care providers create, manage, and use clinical information. Students attend lectures and spend a significant portion of time examining and reporting on different clinical settings throughout the semester.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
BMI	410	Database Mgt in Health Care	Database fundamentals and the use of databases in health care. Fundamental concepts in relational database design spanning both operational and analytical use cases. Students learn and practice SQL syntax. Discusses modern implementations of databases in health care; exposes students to the most common forms of modern health care data: EHR data, claims (pharmacy and medical), and health care data models (includes health care data warehouses). When possible, exposes students to real (deidentified) data and database schemas, but synthetic data may also be used that closely matches the format it is intended to represent.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BMI 410 or BMI 394 (Database Management in Healthcare)
BMI	440	Software Engineering for BMI	Provides a survey of software engineering with application to biomedical informatics. Teaches general theories, models, and specific techniques such as requirement analyses, architecture design, system modeling, software evaluation and project management. Uses specific examples from biomedical research, patient care, clinical education and public health for illustration of the concepts. Exposes students to interdisciplinary, team-oriented approach to developing software systems for biomedical and health applications.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 310 or CSE 335 OR Visiting University Student
BMI	461	Advanced Topics in BMI I	Covers current trends and cutting-edge research areas of clinical, public health, and consumer health informatics. Particular emphasis on research that is of relevance to patients, and the healthy public, covering such topics as outbreak detection and the personal health record. Also covers research on the use of technology in medical education, and the ways in which clinical decision support systems are applied in contemporary medical practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	462	Advanced Topics In BMI II	Covers current trends and cutting-edge research areas of bioinformatics, imaging informatics, and translational science. Emphasizes informatics approaches to the novel data sources that are supplied by the next generation of methods for affordable gene sequencing, and initiatives underway to accelerate the integration of novel research findings into everyday clinical practice. Includes a series on modeling and simulation, current approaches to computer-aided diagnosis of medical images, ways in which technology can support the discovery of new knowledge, and the application of telemedicine to remotely facilitate clinical care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	465	Intro to Comparative Genomics	Explores genomic sequences and hypotheses for their structure, evolutionary history, and underlying mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only BMI 465 or BIO 455
BMI	482	Capstone I	First course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of a research project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
BMI	483	Capstone II	Second course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of an applied project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): BMI 482 with C or better; ENG 101, 105, or 107 with C or better
BMI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
BMI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
BMI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BMI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		

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BMI	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMI	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502
BMI	504	Intro to Clinical Environments	Course is divided into three sections. The first section covers medical and health care concepts and terms, and discuss observational techniques. In the second portion, students investigate a variety of different clinical environments and report back to the class on their findings. The final portion summarizes the key points of information technology in these clinical environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): graduate BME or BMI major. Credit is allowed for only BMI 404 or BMI 504
BMI	505	Foundations of BMI Methods II	Second semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 502 with C or better
BMI	506	Clinical Decision Support	The course will provide an in-depth analysis of computer-based approaches to supporting clinical decision making for providers and patients (as well as healthy individuals, for disease prevention/health maintenance). The history of the field of clinical decision support (CDS) and the spectrum of methodologies will be reviewed. Practical issues involved in successful implementations of CDS will be discussed. The roles of standards and infrastructure will be examined. Current research topics and foci will be explored.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMI	515	App Biostats Med & Informatics	Comprehensive treatment of the statistical methods used most often to analyze quantitative data collected in medical and biomedical informatics studies, including clinical trials, epidemiologic studies, studies of the accuracy and performance of screening and diagnostic tests, and studies to develop predictive models. Students learn to use SAS statistical software to analyze biomedical data.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	516	Adv Biomedical Data Analysis	Acquisition, conversion and organization of biological data into relevant diagnostic, therapeutic, and research information using information extraction and data mining.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 501 with C or better
BMI	517	Adv Biostats Biomed Research	Covers the use of computation as a tool for biostatistical data analysis and methods development, especially for research on multivariable regression analysis of biostatistics and health science. Major topics include understanding of hypothesis testing; regression model development; multivariable regression analyses on continuous, binary and censored outcomes; how to handle statistics issues related to regression modeling such as collinearity, overfitting and missing data. Students use the SAS and R statistical programming language to display and analyze data, and to evaluate statistical procedures and algorithms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 515; Credit is allowed for only BMI 517 or BMI 598 (Biostatistics with Computational Applications)
BMI	520	Modeling Gene Reg Networks	Computational and mathematical modeling used to approximate gene regulatory networks as well as signaling pathways and inference of model parameters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 505 with C or better; BMI 516 with C or better
BMI	540	Problem Solving in BMI	Theory and practice of software engineering principles as they apply to large- and medium-scale clinical systems from bench to bedside.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601 with C or better
BMI	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550

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BMI	555	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515 or IEE 572 or IEE 578; Credit is allowed for only BMI 555 or IEE 520
BMI	560	Teachng Biomedical Informatics	Student serves as a teaching assistant with a faculty member who is teaching either a required or elective course in the Biomedical Informatics curriculum. Such courses will generally be BMI courses but with the approval of the student's faculty program advisor may include a course that is an approved elective in the BMI program but is offered in another department within the university. The experience provides a significant teaching role, either lecturing or moderating small group sessions or laboratories. Grading class homework assignments and designing/grading examinations will also typically be part of the experience. Assisting other students outside of class and being available during office hours will also generally be part of the student teacher's role. A student may also receive 1 hour of credit for participating substantively in the design of a new course, working closely with a faculty member. Generally in such circumstances the student should then serve as course teaching assistant when it is offered for the first time (separate enrollment in this course).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Biomedical Informatics PhD student
BMI	570	BMI Symposium	Students attend the BMI Symposium Speaker Series twice a month and the student journal club discussion on alternate weeks. During the journal club weeks, each student leads a discussion on a current topic pertinent to the field of biomedical informatics.	N	SEM	Y	YGB	College of Health Solutions	College of Health Solutions	1		Pre-requisite: BMI Graduate student
BMI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student
BMI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics MS student
BMI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Health Informatics MAS, Biomedical Informatics MIP, or Biomedical Informatics MS student
BMI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): graduate Biomedical Informatics student
BMI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student
BMI	601	Health Informatics	Offers an overview of the field of health informatics. Combines perspectives from medicine and computer science for use of computers and information in health care and the health sciences. Includes an overview of health information literacy and data standards. Covers specific applications and general methodology in health informatics using current topics in the field. Discusses evaluations of health systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BMI	602	Programming Health Care Domain	Intensive introduction to object-oriented programming concepts focused on the unique challenges such as those related to data volume, complexity, and uncertainty inherent to applications in a health care domain. Also covers the fundamentals of algorithm analysis and data structure design. Stresses a software engineering approach to abstraction for problem decomposition and solution formulation, with object-oriented and reusability concepts introduced early. Emphasizes the use of generic data structures and abstractions from template libraries for reusability, as well as modular design. In addition, also covers basic concepts of algorithms and data structures.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	603	Health Informatics Database	Thorough coverage of the foundations of database systems and their specific use and modeling in healthcare and biomedical environments. Students learn through hands-on experience with the modeling and implementation of health-related databases using the relational approach. Topics include an overview of database models and architecture, database design, SQL, XML, and data warehousing as they are applied in clinical domains. Students are encouraged to explore database-related topics of their own, choosing ones that are relevant to a bioinformatics or clinical domain.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	604	Health Info Communication	Students learn to locate, retrieve, and store information with an emphasis on electronic search, retrieval, and storage. They also learn to assess the validity and quality of information, improve the quality of information, and how to improve the quality of, protect, and effectively communicate health information.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Informatics MAS student
BMI	605	Health Info Systems & Apps	Explores the use of information systems in different health care settings, analyzing operational and strategic objectives for their deployment. Emphasizes the analysis of the different factors that influence decision making during the process of design and deployment of systems, including human factors, hardware, software, policy, communications, and the successful management of such systems. Also covers guidelines for the design and successful deployment of systems to meet those objectives and includes discussion of architectures, components, and models. Analyzes specific case studies of successfully and unsuccessfully deployed systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	608	Project Mgmt Interdis Teams	Introduces students to the health care team and explores tools and techniques for establishing effective interdisciplinary teams in a health care setting, emphasizing collaborative clinical decision-making and patient management. By working in small teams, the course puts into practice these techniques, allowing students to collaborate with other health professionals to solve specific problems, provide services, or develop new understandings. Also covers the concepts, skills, tools, and techniques involved in the management of information system projects, providing an introduction to the established discipline of project management, with a specific focus on how they apply to managing information systems for a biomedical setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	610	Clinical Culture & Health Care	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and reviews clinical environments in which health care providers create, manage and use clinical information. Students perform observations in a variety of clinical environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Informatics MAS student
BMI	612	Applied Data Mining	Comprehensive introduction to data mining methods and algorithms used most often to analyze data collected in biomedical informatics studies, including genomics and proteomic disease association studies, clinical trials, clinical image analysis and studies of the accuracy and performance of screening and diagnostic tests. Emphasizes assessing data quality, understanding how to select an overall approach to analysis, and presenting and interpreting the results of data mining analysis. Students learn to use Excel to effectively display data collected in biomedical research studies and Weka software to analyze data using approaches that are used commonly in biomedical studies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BMI	613	Workflow Analysis & Redesign	Provides an overview of workflow analysis and process redesign and their use in quality improvement activities, including specification. Uses case examples to highlight key concepts and measurement concepts and covers techniques. Includes the links of systems engineering to fundamentals of decision theory, statistics and optimization. Includes discussion of current successful techniques for systems engineering. System engineering seeks to enable the successful design, implementation, deployment and maintenance of successful systems. Emphasizes gathering and analysis of customer needs for the specification and documentation of required functionality early in the system's lifecycle.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	614	Curr Persp Health Informatics	Seminar course using external speakers to discuss and review the current state of the health informatics field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601
BMI	615	Human Factors Eng Biomed App	Fundamental principles of human-computer interaction and human factors and how to apply them to real-world problems through class projects, homework, and real-world design. Focuses on learning why user-friendly interfaces can greatly improve work productivity and enhance the quality of healthcare without radically changing the underlying technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	616	Clinical Decision Support	Focuses on the major problems of human decision making in health care including causes of errors, decreased quality and increased costs. Explores the role of information technology, primarily through computer-based clinical decision support (CDS), to address these problems. Explores key methods used to provide CDS, the capabilities and limitations of current approaches, and the challenges for managing and updating the knowledge needed to deliver CDS in an enterprise setting. Origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation; and the history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Students gain hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate health policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	617	Prin Evidence-based Medicine	The origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation. The history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Health Informatics MAS student
BMI	618	Leadership & Change Clinical	Introduces tools and techniques for leading interdisciplinary teams in health care settings. Provides an opportunity for collaboration with health care professionals to solve specific problems, provide services or develop new understandings. Covers the concepts, skills, tools and techniques involved in the management of projects with a specific focus on how they apply to managing information systems projects in biomedical settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics PhD student
BMI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student
BMI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student

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BMY	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function—e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Credit is allowed for only BIO 230 or BMY 230
BMY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	302	Principles of Life	Explores nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. Develops participants' understanding of the deep patterns found in nature, and acts as an introduction into the methodology of biomimicry—including the review and study of life's operating conditions on Earth; the six primary principles; and their related sub-principles. Gives the knowledge necessary to bring these design guidelines into practice and provides opportunity to integrate them into one's discipline.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better
BMY	304	The Practice of Biomimicry	Explores the process of nature-based design from a methodology-based approach. Deep dives into the biomimicry process and reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluation. Introduces the art of translating biological concepts into strategies for application and building a taxonomy of design principles. Includes a practicing tools component and a final multi-week group project. Offers the structure for which biomimicry can be put to practice.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better OR Visiting University Student
BMY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	430	Biomimicry Practicum	Allows participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have meaningful outcomes achievable within the semester, and allow the investigation of biomimicry life's principles as well as engage students in the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based with the final deliverable having an application in a real-world setting.	N	PRA	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): BMY 230; BMY 302; BMY 304
BMY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		
BMY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		
BMY	501	Essentials of Biomim	Offered as a sampler of the various topics (discipline, emulate, ethos, (re)connect and iSites, human-nature connection, biomimicry thinking, and life's principles) within the discipline of biomimicry. Each week is devoted to a specific topic and is led by a different instructor. Provided a basic overview of each aspect of the discipline with ample opportunity for conversation and dialogue around the specific components, with an understanding that greater depth into each topic can be learned by taking the advanced BMY courses.	N	LEC	N	OP2	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	502	Life's Principles	Life's principles are nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. With instruction by Dr. Dayna Baumeister, this 16-week online course takes participants on a deep dive of life's principles, including the review and study of life's operating conditions, the six primary principles and their related sub-principles. Gives participants the experience necessary to bring these design guidelines into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMY 501

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BMY	503	BIO Taught Functionally	Biomimicry teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores how biologists gather and research information and how that knowledge can inform other disciplines. Also introduces the art of translating biological concepts into strategies for application, which is then carried throughout all the courses. Students learn how to work with biologists on a biomimicry team and how to weave biology and biomimicry together. The biologists in the cohort not only learn to look at nature through the function lens, but also act as subject matter experts for their interdisciplinary teams and teaching assistants.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMY 501
BMY	504	Biomimicry Thinking	Biomimicry thinking is the practice of biomimicry from a methodology-based approach. It is a 15-week intensive in the methodology of biomimicry that reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluating. Covers the art of translating biological concepts into strategies for application and building a taxonomy of design principles.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Prerequisite(s): Biomimicry MS student or Biomimicry certificate student; Pre- or corequisite(s): BMY 501
BMY	511	Biomimicry and Design	Biomimicry is innovation inspired by nature, or the conscious emulation of nature's genius. Prepares participants to design sustainable innovations using the biomimicry philosophy and methodology. Participants complete a 16-week series of lectures and assignments to demystify the design thinking process, understand how to harness the potential of approaching challenges with a design mind, distill a design challenge, understand user needs, build a bridge between biology and design, use a methodology for discovering models from nature, abstract design principles from bio-inspired strategies, and translate those principles into sustainable innovations. Participants both with a design background and without equally experience a deep immersion into the world of biomimetic design.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	512	Biomimicry and Engineering	Prepares participants to understand the field of engineering; identify the types of engineers and what each one does; what constrains engineers' work under, materials selected by engineers, how to present biological ideas to engineers and how to integrate ideas from their discipline into sustainable engineering designs using biomimicry principles. Most examples used are of large engineered structures. These structures play critical functions in human systems, have a significant impact on the environment and last for over a 100 years, so it is important to imbed as much sustainability into their design as possible. Requires a final team project designed to put these ideas into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	516	Biomimicry and Business	Addresses business topics from the biomimicry point of view; explains mechanisms and tools for comparing and contrasting business and nature. Challenges participants to question conventional ways of conducting business and come up with new approaches based on a different point of view. Recommend BMY 502 and BMY 504 to be successful in this course.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	517	Human-Nature Connection	Grounds the emerging discipline of biomimicry as a continuation of our ancestral connection with nature. Human-Nature Connection (HNC) engages participants in an exploration of the meaning and value of connecting with nature. Topics include defining humans, nature, and our connection with nature; establishing the evolutionary, personal, and socio-cultural influences on the different expressions of this connection; and illustrating the relevance of biomimicry to the human-nature connection.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	530	Virtual Design Lab Prac	Practicum designed to allow participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have a meaningful outcome achievable within the semester, and should engage the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based, and the final deliverable should have application in a real-world setting.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Prerequisite(s): BMY 501; BMY 502; BMY 503; BMY 504; Biomimicry MS student with minimum 20 hours or Biomimicry Certificate student with minimum 13 hours; Pre- or corequisite(s): Biomimicry MS or Biomimicry Certificate student

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BMY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): Biomimicry MS student; BMY 501; BMY 502; BMY 503; BMY 504
BMY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-4		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BUA	380	Small Business Leadership	Develops leadership skills needed to form, lead, and operate a small business. Emphasizes creating a vision, research, and problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	381	Small Business Acct & Finance	Accounting and finance skills needed by small business owners to acquire, allocate, and track monetary resources and evaluate performance.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student. Must not have earned credit in ACC 382.
BUA	383	Small Bus Working Relationship	Addresses communication and the people in a business--clients, employees, suppliers, competitors, governments, family, and self development.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
BUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
BUS	384	Business Operations & Planning	Planning and executing plans--the what, when, where, how, and who from product/service/project idea to pay back or completion.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): SCM 300 or 303 OR Visiting University Student
BUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 45 hours
BUS	424	Sales and Negotiations	Principles and techniques of selling, merchandising and negotiations applicable for all businesses and organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): MKT 300
BUS	434	Business Risk Management	Strategies to manage business risk: derivatives, insurance, self-insurance and public policy.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303 OR Visiting University Student
BUS	436	Frontiers in Risk Management	Highlights practices and challenges faced by firms in terms of identifying, measuring and communicating a variety of business and financial risks, as well as designing and implementing risk management strategies as a critical component of the overall strategic management process. Emphasizes a variety of financial and nonfinancial risks in a holistic framework. Develops an understanding of the risk management practices and challenges faced by firms in a variety of business settings and industries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303
BUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAP	120	Intro to Counseling	Provides an introduction to and broad overview of the field of counseling. Covers several counseling topics related to ethics, prevention, intervention and treatment, as well as multicultural counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
CAP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	220	Self in Multicultural Society	Covers current theories and research on culture, race and ethnicity, gender and other specific aspects of cultural diversity in a multicultural society. Explores themes, theories, topics and research related to power, privilege and oppression in the United States.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	
CAP	240	Counseling Skills	Provides an introduction to counseling skills and intervention techniques used in treatment. Focuses on active listening, self-awareness and other related skills.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	260	Careers in Counseling & Ap Psy	Provides a broad overview of the various career opportunities in counseling and applied psychology fields.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): CAP 120 or PSY 101
CAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	310	Addictions I - Fdn. & Princ.	Covers the history, overview and principles of addiction as well as symptoms of co-occurring mental health issues prevalent in individuals with addictions and substance abuse disorders. Students also learn basic screening and assessment tools used to detect, evaluate and manage risks associated with individuals who have co-occurring disorders	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	315	Trauma & Crisis Intervention	The role of counselors in traumatic events, crises and situations. Also introduces students to counseling skills and techniques particularly specialized for crises such as child abuse, partner violence, war, natural disasters and many others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120
CAP	320	Theor. Counseling&Psychotherapy	Provides the theoretical foundations and knowledge related to the principles of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108; CAP 120; CAP 240
CAP	325	ProfPrac & Ethics	Discusses ethical issues (confidentiality, informed consent, integrity, respect) and professional codes of conduct in the counseling field.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240 OR Visiting University Student
CAP	330	Group Counseling	Provides an overview of theories, techniques and approaches to group counseling and therapy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	335	Addiction Group Counseling	Offers an overview of the role and efficacy of group therapy in substance abuse treatment. Students learn about the different types of substance abuse treatment groups; screening and criteria for groups; group development and stages of treatment; and group leadership skills and techniques (e.g., motivational interviewing). Through weekly discussions, journal reflections and experiential activities, students learn the various techniques used in group substance abuse treatments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	340	Multicultural Counseling	Provides an overview of multicultural theory, research and practice. Topics include acculturation, identities, prejudice and other related topics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220
CAP	342	Community Outreach Prev. & Int	Provides an understanding of the methodologies in community outreach and prevention treatment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220
CAP	351	Issues Assess Diagnosis Trtmt	Builds upon previous coursework. Provides students with an understanding of the major screening, assessment and diagnostic approaches for substance abuse and addictions. Students obtain knowledge of (1) models, (2) instruments, and (3) diagnostic criteria, and will be able to link this knowledge to treatment planning and interventions for addictions. Please note: the goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field. The goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 310 with C or better
CAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
CAP	400	Advanced Research Methods	Builds upon introductory research methods and provides students with a strong foundation of research knowledge in counseling. Covers critical reading and analysis of peer-reviewed journal articles, types of research methodologies and proposal development.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; PSY 290

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CAP	420	School Counseling	Provides an overview of counseling in school settings. Covers the role of school counselors in supporting youth and adolescents in many areas such as developmental disabilities/mental illness, as well as ethical and legal issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	440	Addictions II - Treat & Recov.	Builds upon previous course work. Covers philosophies and models of treatment, recovery, relapse prevention and continuing care in substance abuse counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 310
CAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 45 hours
CAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
CAP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 45 hours
CAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
CAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		
CAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	501	Fundamentals Cmplx Sys Science	The enormous diversity of biological, social and technological systems is the product of evolution. As Darwin put it poetically: "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved." In short, complexity is the product of evolutionary processes. This, in turn, implies that understanding complexity requires us to understand its evolutionary origins. This course is a comprehensive introduction to the evolutionary history of complex systems and the principles and mechanisms that guide this dynamic. Covers the consequences of evolutionary history of complex systems, such as vulnerability to failure or limits of the potential of these systems to change and adapt.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	502	CAS Computation	Most systems are complex. Complex systems share a number of critical features across all domains, including the fact that all complex systems process information and perform computations in the broadest sense. Explores the informational and computational dimensions of complex systems with an emphasis on how complex systems acquire, process, store and transmit information in a systematic way across the social, behavioral and life sciences and engineering.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	503	Fund Cmplx Sys Sci: Collect.	From neurons in a brain to fish in a school to people in an economy, collectives are all around us. These are complex systems in which we understand in some detail how the individual components behave and interact, but the behavior we are interested in is at the larger scale of the aggregate. The behavior of systems like these is challenging to predict and understand largely due to the sheer number of interacting components, as well as the unintuitive way that contributions from individuals scale up to have large collective effects. Complex systems science has developed an array of conceptual tools to help understand collective behavior. Explores these foundational concepts, including emergence, scaling laws, dynamical modes and coarse-graining. Uses these tools to demystify powerful aggregate-scale effects, from impressive feats of swarm intelligence to potentially harmful instabilities and hysteresis.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	520	Agent-Based Modeling	Agent-based modeling is a method to study the macro-level consequences of micro-level interactions of agents representing individuals, households, firms or other type of actors. Agent-based modeling is used to study the dynamics of complex adaptive systems across different domain areas. Covers the basics of agent-based modeling including programming computer simulations and how this method is used to study complex adaptive systems in different application areas. Examines the method for scientific research, especially the various ways of doing model analysis. Students perform individual assignments.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	521	Methods Complex Sys Science	Network science within the framework of complex adaptive systems. Begins with general introductions to different kinds of networks and their basic network properties. Then progresses to the mathematics and algorithms of network analysis while learning about computational feasibility and the importance of random graph comparisons. Each week students are responsible for readings and a write-up of that week's topics. These write-ups help build toward the final assignment incorporating all topics covered in this class. Upon completion, students should feel confident incorporating networks and their associated complexity into their research and worldview.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	522	Dynamic Mtds Complex Sys Sci	Focuses on the mechanisms through which complexity emerges in evolving and dynamical network architectures. Some of the best-known examples include gene expression networks, adaptive ecological networks, and neural networks for cognitive information processing. Complex systems theory deals with dynamical systems with a large number of interacting variables. Therefore, after an introduction to graph and network theory, the course covers the basic concepts of dynamical systems theory: continuous and discrete systems, attractor dynamics, bifurcation, and chaos. After introducing information theory, devoted to the fundamentals, the second part focuses on applications, especially to network dynamics. Students acquire familiarity through the analysis of concrete examples of both deterministic and random dynamics in the form of Boolean networks and random walks.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	523	Methods CMLPX Sys Sci: Stats	Because complex systems involve a large number of interacting components, observational studies of these systems typically generate data sets of high dimension. Examples include the hundreds or thousands of distinct neurons in a brain, genes in a cell, people in a society, firms in an economy, or texts in a corpus. To make sense of such data, a diverse set of data analytic tools has been developed to summarize key properties at the population level (statistics) and characterize predictable lower-dimensional patterns (dimensionality reduction). Provides a guided tour of such tools most relevant to complex adaptive systems. With a solid foundation in inferential statistics, students encounter PCA-type linear projections, nonlinear manifold techniques, topic modeling, clustering methods, network statistics, as well as more abstract foundations for how these methods work and when they fail. Students hone their data skills by applying state-of-the-art open-source software to real-world datasets.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	540	Socioecological Complex Syst	We live in a world that is neither wholly human nor wholly natural. Human decisions and actions combine with biological processes and physical forces transform cities, rural landscapes, ecosystems and biogeography, river systems, coastlines and the atmosphere. By emphasizing the importance of networks and feedbacks, complexity science is especially helpful in providing insight into the complex interactions between the human and natural components of the socioecological systems that are so critical to our lives and wellbeing. Examines key concepts for understanding socioecological system dynamics from a complex systems perspective. Explores how methods drawn from complexity science can trace the complex web of feedbacks between social, biological and geophysical processes and help to better understand and plan for change and stability in socioecological systems. Also looks at how complexity science can help contribute to relevant policy and governance for SES.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	541	Complex Urban Systems	Despite occupying only a tiny fraction of the world's area, cities house over half of earth's human population, consume over two thirds of global energy, and emit over 70% of global CO2 emissions. It is estimated that the combined ecological footprint of earth's urban areas already exceeds the entire area of our planet, and still globally 3 million more people migrate to cities every week. Cities are also the global engines of innovation, wealth creation, and production efficiencies. Thus, cities are both drivers of unsustainable behavior and our best hope for innovating sustainable solutions. Examines key concepts for understanding the complexity of urban systems, and explores how methods drawn from complexity science can be applied to urban structures and dynamics to better understand both past and future outcomes. Shows how complexity science might contribute to relevant policy and governance of cities and whether such a contribution is advisable.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	542	Sustainability, Cmplx Systems	Sustainability challenges are complex challenges. Sustainability as a problem of complexity explores in a systematic way the interconnected nature of sustainability challenges and presents a complex systems science-based framework for developing sustainability solutions.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	543	Complexity Economics	Complexity economics is the study of economic systems as evolving, complex systems. These systems consist of interacting individuals who perceive their environments, and take actions based on multiple criteria, which in turn affect their environments and the decisions available to other individuals. Complexity economics is not an extension of conventional, neo-classical economic theory and practice, which is based on the concepts of equilibrium, optimization and aggregation. Complexity economic attempts to understand economic phenomena through concepts of evolution, emergence, path dependency and the interdependent relationships between heterogenous individuals whose actions shape their environments. This offers a new basis for theory and practice that better reflects not only real problems and scenarios, but also how individuals make decisions and how those decisions have consequences for both the environment and society.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	544	Innovation in Complex System	Innovation is a central property of complex systems. Without innovation there would be no evolution of complex systems. Explores the dynamics of innovation in complex systems across a number of different domains, including biological, social, cultural and technological innovations. Focuses on the common principles and differences guiding innovation dynamics. Also focuses on unintended consequences of innovation, such as cascading effects and innovation traps and investigates why certain systems fail to innovate. Identifies common features of innovation across complex systems.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	545	Disease as a Complex System	Disease and failure are properties of complex systems. All organisms, groups, societies, technologies, ecosystems and the planetary system are complex systems. Disease can be seen as a failure in complex system function and has, at its root cause, the breakdown of complex regulatory structures that maintain function and facilitate adaptation. Comprehensive introduction into the origins, mechanisms and consequences of disease in a number of complex systems ranging from organisms to the planet and the technosphere. Explores disease, failure and health of these systems and investigates the underlying complex systems properties that are responsible for these different states. Identifies common features of failure across complex systems.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	546	Bio-Inspired AI & Optimization	Provides a survey of a variety of algorithms for optimization and multiagent control that are inspired by natural systems. Algorithms inspired by biological or physical systems can often be viewed as idealized models of those antecedent systems. Consequently, also explores potential problems (and solutions) in these algorithms that are analogous to fundamental but less well-known issues in the biological and physical systems that inspire them.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
CAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	232	Human Development	Lifespan development from conception through adulthood, with emphasis on family influences. Recognition of individuality within the universal pattern of development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
CDE	244	Children with Health Challenge	Provides a comprehensive introduction to family-centered care, psychosocial assessment of the hospitalized and chronically ill child, and techniques to support their coping. Utilizes the principles/theories of child development, and introduces the role of a child-life specialist in the promotion of effective coping through play, preparation and education among children, youth and families facing challenges related to health care and hospitalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Credit is allowed for only CDE 244 or CDE 294 (Children Facing Health Care Challenges) OR Visiting University Student
CDE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 24 hours; SOC 101, PSY 101, FAS 101, or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
CDE	337	Early Childhood Intervention	Explores how child development theory affects practice with children and families, emphasizing development of young children and early intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
CDE	338	Child Development Practicum	Supervised practicum in the Child Development Lab preparing students for work in child care centers and agencies serving young children and families.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	2-4		Prerequisite(s): minimum 45 hours
CDE	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
CDE	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
CDE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PGS 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
CDE	430	Infant/Toddler Devel in Family	Examines the development of infants/toddlers, the socialization processes of families, and the interactions of these processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 30 hours
CDE	450	Child Dysfnc in the Family	This course will provide a focused study of the development of dysfunction within the family context. Other contextual influences will also be considered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 232, PGS 101, or SOC 101 with C or better; minimum junior standing OR Visiting University Student

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CDE	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
CDE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
CDE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
CDE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
CDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
CDE	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)
CDE	531	Theoretical Issues Child Devel	Major developmental theories, related research, and their application to family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	533	Research Issues in Child Devel	In-depth exploration and critique of research focusing on child development in a family setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	534	Risk & Resilience in Children	Integrates child development, family theory, and research to understand risk and resilience in children and adolescents.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: CDE 531; FAS 500
CDE	570	Child Development for IFP	Examines development during infancy and early childhood with an emphasis on social and emotional development, mental health, and early parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	571	Infant Mental Health for IFP	Surveys the biological and environmental risk factors that jeopardize the mental health of infants and young children; overview of prevention and intervention strategies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	572	Assessment for IFP	Developmentally appropriate assessment of mental disorders and developmental disabilities in infants, toddlers, and preschool children and parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	573	Cultural Competence for IFP	Examines cultural issues impacting parent-child relationships and child rearing and the effectiveness of infant mental health and early intervention services on families of various ethnic and cultural backgrounds.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	574	Observation&Reflection for IFP	Strategies for observing infant behavior and parent-child relationships and skills for reflective, relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	575	Adv Observation for IFP	Advanced strategies for observing infant behavior and parent-child relationships and skills for reflective relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	576	Appl Research Methods for IFP	Survey and critical examination of child development, parent-child relationships, family relationships, and early intervention research and the application to IFP.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	610	Gender Development	Examines current theories and research concerning the various aspects of gender and developmental change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	612	Children's Peer Relationships	Studies scientific theory, research, and evidence on peer relationships and social competence from early childhood through adolescence.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite(s): CDE 531 with C or better
CDE	634	Prevention & Child Development	Advanced training in research and theory-based approaches to developing and evaluating prevention programs for children at risk.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite: CDE 534
CDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CDH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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CDH	501	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives—whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
CDH	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CED	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	250	Career Development	Covers models of the individual, the world of work, and decision making with emphasis on individual application.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
CED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
CED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
CED	501	Res & Eval. in Counseling	Introduction to the basic models of research and evaluation in the field of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking).; Credit is allowed for only CED 501 or 591 (Res. & Eval. in Counseling)
CED	502	Counseling data analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate counseling research problems using statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CED 502 or CED 591 (Counseling Research Data Analysis)
CED	522	Theories of Counseling/Psychoth	Presents major theories of psychological intervention as well as underlying personality theory upon which they are based.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	523	Psychological Tests	Standardized tests in the study of the individual, with emphasis on test score interpretation in counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	527	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CED	529	Lifespan Human Development	Issues and models of human development as it occurs across the lifespan.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CED	534	Occupations and Careers	The world of work, career development, education, and training for occupational entry and mobility.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	545	Analysis of the Individual	Theory and methods commonly used in studying the individual. Observational methods, diagnostic interviews, structured, and semi-structured methods for assessing personality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student

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CED	567	Group Dynamics and Counseling	Group process factors, theory, and diversity issues determining effective interaction in small groups. Emphasis placed on lecturettes, self awareness, and experiential components.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	577	Counseling Prepracticum	Focus on racial, social, and cultural factors in the development of helping relationships through integration of cognitive and affective self-awareness with counseling skills.	N	LEC	N	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student
CED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CED	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671
CED	672	Couple Family Counseling	Couple and family counseling theories. Emphasizes a systems-communication model utilizing cocounseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student
CED	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student
CED	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student

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CED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CEE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	HU	Credit is allowed for only CEE 181, FSE 181, or SOS 181
CEE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; PHY 122 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CEE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student
CEE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CEE	281	Surveying	Theory and fieldwork in construction and land surveys.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	300	Engineering Business Practice	Engineering economic principles, cost/benefit analysis, project financing and delivery, management of engineering design, business practices, ethical and professional responsibilities.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	L	Prerequisite(s): Engineering BSE major; ENG 101, 105, or 107 with C or better; MAT 267 with C or better; minimum junior standing OR Visiting University Student
CEE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212 or CNE 212 or MAE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CEE	341	Fluid Mech for Civil Engineers	Fundamental principles and methods of fluid mechanics forming the analytical basis for water resources engineering. Conduit and open channel flow.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engr BSE major; CEE 212 with C or better; CEE 213 with C or better OR Environmental Engr BSE major; EVE 214 with C or better; Pre- or corequisite(s): CEE 384 or MAE 384 with C or better if completed OR Visiting University Student
CEE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE, Construction Engineering BSE, or Environmental Engineering BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student

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CEE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CEE	361	Intro to Environmental Engr	Concepts of air and water pollution; environmental regulation, risk assessment, chemistry, water quality modeling, water and wastewater treatment systems designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 with C or better; CHM 114 or 116; Pre- or corequisite(s): IEE 380 OR Visiting University Student
CEE	372	Transportation Engineering	Fundamental background of highway and traffic engineering in the areas of planning, design, and operations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 212 with C or better; CEE 213 with C or better; Pre- or corequisite(s): IEE 380 OR Visiting University Student
CEE	384	Numerical Methods for Engrs	Numerical methods and computational tools for selected problems in engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	CS	Prereq(s) with C or better: Fulton Engr undergrad; MAT 274 or 275; MAT 242 or 343 (or 342 for non-MAE major); Pre- or corequisite(s): MAT 267 or 272 with C or better if completed; Credit allowed for only MAE 384 or CEE 384 OR Visiting University Student
CEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	(L or HU) & H	Prerequisite(s): Civil Engr BSE major; CEE 300 with C or better; ENG 101, 105, or 107 with C or better OR non-CEE junior or senior; ENG 101, 105, or 107 with C or better; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CEE	412	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 412 or 511 OR Visiting University Student
CEE	420	Steel Structures	Behavior of structural components and systems. Design of steel members and connections. Load and resistance factor design methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 420 or CNE 420 OR Visiting University Student
CEE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CEE	423	Structural Design	Analysis and design of reinforced concrete steel, masonry, and timber structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 421 with C or better; Pre- or corequisite(s): CEE 420 with C or better if completed
CEE	432	Developing Software Engr Appls	Matrix and computer applications to structural engineering and structural mechanics. Stiffness and flexibility methods, finite elements, and differences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; Credit is allowed for only CEE 432 or CEE 532
CEE	440	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student
CEE	441	Water Resources Engineering	Applies the principles of hydraulics and hydrology to the engineering of water resources projects; design and operation of water resources systems; water quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Environmental Engineering BSE major; CEE 341 with C or better

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CEE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CEE	462	Unit Operations Environ Engr	Design and operation of unit processes for water and wastewater treatment.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 with C or better OR Environmental Engineering BSE major; EVE 302 with C or better OR Visiting University Student
CEE	466	Urban Water System Design	Capacity; planning and design of water supply; domestic and storm drainage; and solid waste systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 341 with C or better; CEE 361 with C or better OR Environmental Engineering BSE major; CEE 341 with C or better; EVE 261 with C or better OR Visiting University Student
CEE	467	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 or MIC 220 with C or better OR Environmental Engineering BSE major; EVE 303 with C or better; Credit is allowed for only CEE 467 or CEE 567 OR Visiting University Student
CEE	470	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 361; Credit is allowed for only CEE 470 or CEE 494 (Sustainable Environmental Biotechnologies) or CEE 570 or CEE 598 (Sustainable Environmental Biotechnologies) OR Visiting University Student
CEE	474	Transportation Systems Planning	Transportation systems modeling procedures, travel characteristics analysis, traffic predictions, transportation systems management, and transit planning methods.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; CEE 384 with C or better OR Visiting University Student
CEE	475	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; Credit is allowed for only CEE 475 or CEE 576
CEE	481	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; CEE 351 with C or better; CEE 372 with C or better; Credit is allowed for only CEE 481 or CEE 585
CEE	483	Highway Matl, Constr, Quality	Properties of highway materials, including aggregates, asphalt concrete, and portland cement concrete; construction practice; material delivery, placement, and compaction; quality control.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 372 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 483 or CEE 583 OR Visiting University Student
CEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		
CEE	485	Sustainable CEE Systems Engrg	Provides working knowledge of operations research methodologies, both the traditional and more modern metaheuristic techniques, to evaluate sustainable civil engineering systems and quantitatively evaluate project alternatives involving single or multiple goals.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 300; MAT 242 with C or better
CEE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4	L	Prereq(s): ENG 101, 105, 107 w/C or better; CivEng; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR ConEng; CEE 321, CNE 321; CEE 351, CNE 351 OR EnvEng; CEE 341; EVE 302; EVE 303; Crdt only for CEE 486 or CNE 486 OR Visiting University Student
CEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6		Prerequisite(s): Barrett Honors student
CEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6	L	Prerequisite(s): Barrett Honors Engineering student; ENG 101, 105, or 107 with C or better

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CEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-3		
CEE	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)
CEE	506	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
CEE	507	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
CEE	511	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 412 or CEE 511
CEE	512	Pavement Performance and Mgmt	Pavement management systems, including data collection, evaluation, optimization, economic analysis, and computer applications for highway and airport design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student
CEE	513	Pavement EMR	Provides the necessary information for pavement engineers to evaluate, identify, and select reliable and cost-effective rehabilitation alternatives for existing Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) pavements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	514	Bituminous Materials and Mix	Types of bituminous materials used in pavement mixtures. Chemical composition, physical properties, desirable aggregate characteristics, optimum asphalt contents, superpave asphalt binder, mixture design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Graduate Civil Engineering student
CEE	515	Properties of Concrete	Materials science of concrete. Cement chemistry, mechanisms of hydration, interrelationships among micro- and macro-properties of cement-based materials. Mechanical properties, failure theories, fracture mechanics of concrete materials. Cement-based composite materials and the durability aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	516	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	521	Stress Analysis	Introduces tensors; kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student; Credit is allowed for only CEE 521 or MAE 520

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CEE	523	Structural Damage	Fundamental mechanisms of damage in infrastructural materials from both imposed mechanical and environmental loading. Covers assessment of damage through noninvasive tools involving stress-wave, electrical, electro-chemical, radiographic and optical techniques. Methods for strengthening of structural elements and selected methods of design of strengthening systems for concrete and steel structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil or Construction Engineering student; Credit is allowed for only CEE 523 or CEE 598 (Structural Damage Evaluation and Strengthening)
CEE	526	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Engineering student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527
CEE	527	Advanced Concrete Structures	Ultimate strength design. Combined shear and torsion. Serviceability. Plastic analysis. Special systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	530	Prestressed Concrete	Materials and methods of prestressing. Analysis and design for flexure, shear, and torsion. Prestress losses due to friction, creep, shrinkage, and anchorage set. Statically indeterminate structures. Design of flat slabs, bridges, and composite beams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	532	Developing Software Engr Appls	Fundamentals of engineering software development and object-oriented programming. Programming in C++. Development of matrix toolbox. Introduces finite element method. Computer graphics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student; Credit is allowed for only CEE 432 or CEE 532
CEE	533	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
CEE	536	Structural Dynamics Civil Engr	Free vibration and forced response of discrete and continuous systems, exact and approximate methods of solution, response spectra, computational techniques, special topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Construction Engineering or Engineering CEE graduate student
CEE	540	Groundwater Hydrology	Physical properties of aquifers, well pumping, subsurface flow modeling, unsaturated flow, numerical methods, land subsidence, and groundwater pollution.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	541	Surface Water Hydrology	Hydrologic cycle and mechanisms, including precipitation, evaporation, and transpiration; hydrograph analysis; flood routing; statistical methods in hydrology and hydrologic design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	543	Water Resources Systems	Theory and application of quantitative planning methodologies for the design and operation of water resources systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	545	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models and systems. Rain-runoff models. Hydrologic design. Concepts, properties and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS, MSE or PhD major; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology)
CEE	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 546 or GLG 546 or GLG 598 (Advanced Watershed Hydrology)
CEE	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
CEE	550	Soil Behavior	Physicochemical aspects of soil behavior, stabilization of soils, and engineering properties of soils.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	551	Advanced Geotechnical Testing	Odometer, triaxial (static and cyclic) back pressure saturated and unsaturated samples, pore pressure measurements, closed-loop computer-controlled testing, in-situ testing, and sampling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student

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CEE	552	Soil Improvement	Physical, chemical and biological methods for improving (modifying) the properties of the ground for engineering purposes; the applicability of these techniques to different ground conditions (e.g., sand, silt, clay) and design objectives (e.g., erosion control, stability, liquefaction mitigation); design of ground improvement programs for common ground modification techniques used in practice.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering student; Credit is allowed for only CEE 552 or CEE 598 (Soil Improvement)
CEE	553	Advanced Soil Mechanics	Applies theories of elasticity and plasticity to soils, theories of consolidation, failure theories, and response to static and dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	554	Shear Strength/Slope Stability	Shear strength of saturated and unsaturated soils strength-deformation relationships, time-dependent strength parameters, effects of sampling, and advanced slope stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	555	Advanced Foundations	Deep foundations, braced excavations, anchored bulkheads, reinforced earth, and underpinning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	557	Geoenvironmental Engineering	Environmental site assessment, solid waste management, waste containment system design, soil and groundwater remediation, soil erosion control, brownfields development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	558	Unsaturated Soil Mechanics	Advanced unsaturated soil mechanics theory, including introduction of stress-state variables and constitutive relationships for unsaturated flow and stress-strain applications. Knowledge of CEE 351 or equivalent material is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	559	Geotechnical Earthquake Engr	Characteristics of earthquake motions, selection of design earthquakes, site response analyses, seismic slope stability, and liquefaction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	560	Soil/Groundwater Remediation	Presents techniques for remediation of contaminated soils and groundwaters with basic engineering principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	561	Phys-Chem Treat/Water & Waste	Theory and design of physical and chemical processes for the treatment of water and wastewaters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	562	Environ Biochem/Waste Treatmnt	Theory and design of biological waste treatment systems. Pollution and environmental assimilation of wastes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	563	Environmental Engineering Chem	Analyzes water, domestic and industrial wastes, lab procedures for pollution evaluation, and the control of water and waste treatment processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	564	Contaminant Fate and Transport	Fate and transport processes with emphasis on governing equations and parameters relevant to the migration of chemicals in the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	565	Adv Environ Biotechnology	Emerging topics in environmental biotechnology and related problem-solving techniques.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); CEE 562 and 567; Credit is allowed for only CEE 565 or 598 (Advanced Environmental Biotechnology)
CEE	566	Water Reuse and Reclamation	Reuse and reclamation of water, tertiary treatment technologies of water for reuse applications, cloth filtration and UV disinfection, agricultural reuse and engineering, landscape irrigation, industrial reuse, environmental restoration, groundwater recharge, direct and indirect potable reuse, water reuse planning and dual distribution systems, storage requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 566 or CEE 598 (Water Reuse & Reclaim)
CEE	567	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Engineering CEE Graduate student; Credit is allowed for only CEE 467 or 567
CEE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CEE 569 or CHE 469 or CHE 569
CEE	570	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Civil, Environmental and Sustainable Engineering MS, MSE or PhD student; Credit is allowed for only CEE 470, 494 (Sustainable Environmental Biotechnologies), 570 or 598 (Sustainable Environmental Biotechnologies)

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CEE	572	Life Cycle Assess Civil Engin	Concepts of the life cycle assessment (LCA) framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposure to tools and data sources occur throughout the course; presents approaches for evaluation of sensitivity and uncertainty of results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction Engineering major
CEE	573	Transportation Operations	Driver, vehicle, and roadway characteristics; traffic control devices; traffic engineering studies; and transportation system management measures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	576	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student; Credit is allowed for only CEE 475 or 576
CEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	581	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student; Credit is allowed for only CEE 581 or SOS 552
CEE	582	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Prerequisite(s): Civil, Environmental, and Sustainable Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 483 or CEE 583
CEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	585	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MS, MSE or PhD Civil, Environmental and Sustainable Engineering major. Credit is allowed for only CEE 481 or CEE 585
CEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering MS or MSE student

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CEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		Prerequisite(s): Civil, Environmental, & Sustainable Engr MS, Civil, Environmental, & Sustainable Engr MSE, Civil, Environmental, & Sustainable Engr PhD, Construction Engr MSE, Environmental Engr MS, or Sustainable Engr MSE graduate student
CEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering PhD student
CEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Pre-requisite: Civil Engineering PhD student
CEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering PhD student
CEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Prerequisite(s): Civil Engineering PhD student
CEL	100	Great Ideas Politics & Ethics	Introduces fundamental debates and ideas of politics in both the West and beyond. Surveys ancient, medieval and modern thinkers in the Greek, Jewish, Christian and Muslim traditions, tracing their influences on contemporary debates with focus on the great questions of human nature, social and political life, and the relationship between religion and politics. Studies both the ideas and historical statesmanship of such figures as Plato, Cicero, Tertullian, Aquinas, Saadyah Gaon, Maimonides, Al-Farabi, Ibn Rushd (Averroes) and Al-Ghazali, as well as various leaders and writers from modernity in America and abroad. Includes separate discussion to encourage active learning; expects students to write analytical papers and make a class presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 100 or CEL 194 (Great Ideas of Politics and Ethics)
CEL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	200	Great Debates Amer Pol & Econ	Introduces fundamental ideas and debates about liberty and equality in American thought from the colonial era to the present, focusing on major political and economic figures and issues--ideas that continue to shape political and economic debates in 21st-century America, thus providing crucial foundations for future leadership roles in either public affairs or the private sector. A major theme is the tension between liberty and equality and between constitutionalism and democracy, in three centuries as a democratic, commercial republic. Includes separate discussion sessions at the end of each week to encourage active learning; expects students to write analytical papers and make a class presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 200 or CEL 294 (Great Debates in American Politics and Economics)

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CEL	235	Debating Amer Constitutionalism	Examines the arguments and questions raised by the Federalists and Anti-Federalists during their debates over the 1787 Constitution, which provide resources to understand and contribute to contemporary political debates. Federalists and Anti-Federalists debated such fundamental issues as political power, federalism, republicanism, representation, separation of powers, protection of rights, slavery and the character of the people and their leaders. They model how intellectually deep, and morally serious, public discourse can be. Students study their arguments and, with the help of Tocqueville's Democracy in America, apply these debates to our current politics, while considering the rhetorical and other demands placed upon statesmen in constitutional, democratic systems. Students write analytical papers and participate in a simulation of a modern-day constitutional convention.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 235 or CEL 294 (Federalists, Anti-Federalists & Enduring Debate)
CEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	300	Debating Cptism: Pol/Econ/Moral	Explores and debates the politics, economics and morality of "capitalism"--the system of society that allows space for markets, profit-seeking and money-making. Readings cover the period from antiquity to modern commercial society. Authors studied include Aristotle, the Apostles, Aquinas, Locke, Franklin, Smith, Marx and Weber. Also serves as a broad introduction to the study of political economy.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 300 or CEL 394 (Capitalism and Great Economic Debates) OR Visiting University Student
CEL	305	Pol Philosophy & Statesmanship	Examine the themes of justice and leadership in democracy and war through the texts of classical political thinkers, including Plato's Republic, Aristophanes' Clouds, Aristotle's Politics and Ethics, and Thucydides' account of The Peloponnesian War. Investigates questions of political leadership, ambition and the common good. Proceeds through discussion and student-led presentations of the big questions these texts raise.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 305 or CEL 394 (Classical Political Philosophy & Statesmanship)
CEL	320	Debating Modern Pol Liberty	Examines crucial debates in modern political thought, especially in the United States. A focus is defining what is distinctive about "modern thought," with recourse to Tocqueville's Democracy in America on the difference between ancien régime monarchies and modern liberal democratic polities. Other primary readings include works from such seminal moderns as Machiavelli, Hobbes and Locke, but America (not Europe) is the ultimate focus. Queries the core documents and ideas of the American Founding, and discerns the complex interplay of classical republican and liberal intellectual traditions. Close reading of The Federalist and selected Anti-Federalist writings prepare for a broader re-examination of the American political tradition, concluding with the ongoing dispute among progressivism, socialism and conservatism.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 320 or CEL 394 (Mod Political Thght:Orgns & Debats abt Mod Liberty)
CEL	345	Modern Economic Classics	Explores the ideas and writings of the leading economic thinkers of the last 100 years. Emphasizes those thinkers who have had a major impact on public policy. Thinkers covered include Keynes, Hayek, Schumpeter, Polanyi, Galbraith, Friedman and Piketty. Also attends to the way economics and, more generally, social science have increasingly shaped public policy over the course of the last century.	N		SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 345 or CEL 394 (Clsscs of Mod Ecnmic Thght:Smith to Hayek & Beyond)
CEL	375	Politics, Leaders & Revolution	Examines political thought and political leadership in the era of the American, French, Haitian and Latin American Revolutions. Begins with a look at Enlightenment political thought, focusing on natural rights, constitutionalism and political economy. Then considers leading political ideas connected with each of the great upheavals that began with the American Revolution and ended, 50 years later, with the independence of Latin America. Examines the record of political leadership during the same episodes, via biographies of figures such as Washington and Jefferson, Sièyes and Robespierre, Toussaint and Napoleon, Bolivar and San Martin.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 375 or CEL 394 (Politics & Leadership in the Age of Revolution)
CEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		

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CEL	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
CEL	475	Statesmanship & Am Strategy	Discusses great ideas and figures in political leadership and statesmanship, from ancient Greece and early modern Europe to America's founding and the present global uncertainty, especially the major arguments about war, peace and international affairs--ideas that shape foreign policy and grand strategy debates in the 21st century, thus providing crucial foundations for future leadership roles. Major thinkers and episodes include Thucydides, Plutarch, Montesquieu, George Washington, Lincoln, Truman and the Cold War, and Reagan, as well as contemporary debates about America's post-Cold War strategies for its leadership role in global affairs. Incorporates a Marshall brief (a policy presentation) and a group simulation exercise.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 475 or CEL 494 (Statesmanship and American Grand Strategy)
CEL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		
CEL	485	Capstone	Integrates theory and practice by studying selected topics of the intellectual foundations for leadership with exemplars of leadership and statesmanship, culminating in a research presentation and paper.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 60 hours
CEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		
CEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		
CEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-7		
CEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	501	Literary Leaders	Students read a selection of the great books said to contribute to what is known as Western civilization. Beginning with accounts of the beginnings, read and compare Genesis with Hesiod's Theogony. Also examines ways people accepting these different views of the world and the god(s) lived and organized their communities by comparing the stories of the patriarchs in Genesis with the depictions of the ancient heroes in Homer's epic poems, the Iliad and Odyssey, Sophocles's tragedy, Oedipus the King, and Aristophanes's comedy, Lysistrata. Since we also investigate the development and significance of different literary genres, then examines the ways in which Virgil adapted the Greek epic in light of Roman experience in his Aeneid, and the modifications Shakespeare made on both Greek tragedy and comedy during the Renaissance in Macbeth and Midsummer's Night Dream.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 501 or CEL 598 (Literary Leaders)
CEL	503	Political Philosophy & Justice	Provides an overview of the four major periods of political thought--ancient, medieval, modern and postmodern--and engages in close readings of classic texts from each of these periods. The concept of justice serves as an organizing theme, complemented by analyses of other political concepts such as virtue, the common good, natural law, rights, liberty, and equality. Texts include Plato's Republic, St. Thomas Aquinas' Summa Theologica, Machiavelli's Prince, John Locke's Second Treatise of Government, and John Rawls' A Theory of Justice, among others.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CEL	510	Classic Texts in Nat Sci & Phi	Studies the development of natural philosophy and theories of scientific knowledge from Plato and Aristotle to Newton and Darwin. Gives particular attention to the period known as the Scientific Revolution, inspired most famously by Francis Bacon. Explores the relationships among natural philosophy, epistemology, moral philosophy and political philosophy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	513	Classic Texts in Leadership/Statesmanship	Encounters classic texts featuring analyses and discussions of important historical leaders and their actions. These texts both situate examples of leadership and statesmanship in their historical context, and highlight timeless principles of wise and effective leadership. Texts include Thucydides' History of the Peloponnesian War, Plutarch's Lives, Cicero's On Duties, Shakespeare's histories, and the writings and speeches of Abraham Lincoln.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 513 or ENG 513
CEL	520	Classic Texts in Foundations of Logic	Provides an introduction to the principles of logical thought through close readings of Euclid's Elements and Aristotle's Organon. Students learn and demonstrate Euclidean geometric proofs in class, and reflect in discussion upon the relationship between Euclidean geometry and the logical principles analyzed in Aristotle's works.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	501	Computer Systems I	Introduces digital CMOS circuit and logic design and signal processing and analysis. Design of digital CMOS logic gates, combinational and sequential logic circuits, arithmetic logic unit; register-transfer-level design; Fourier and z transforms, filters, sampling, random variables, distribution and density functions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre-requisites: Computer Engineering Graduate student; Credit is allowed for only CEN 501 or 591 (Computer Systems I)
CEN	502	Computer Systems II	Covers fundamentals of computer architecture and focuses on basic principles of systems programming, operating systems, compilers and networking topics that cover the computer science to computer engineering interface.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre-requisite: Computer Engineering Graduate student; Credit is allowed for only CEN 502 or 591 (Computer Systems II)
CEN	503	Algorithms for Computer-Aided Design of Digital Integrated Circuits	Provides the algorithmic underpinnings of CAD (Computer-Aided Design) tools for digital systems—from high-level algorithmic specifications down to an optimized network of logic cells. Covers the underlying theory and algorithms that have been incorporated into many commercial tools over the past two decades. Covers behavioral to RTL (Register-Transfer Level) synthesis, and from RTL to logic, including combinational and sequential network optimization, gate and interconnect timing models, retiming of sequential networks, clock tree design and optimization. To be successful in this course, students need an undergraduate background in combinational and sequential logic design, discrete mathematics, and a strong background (preferably at the graduate level) in fundamentals of data structures and algorithms; strong experience in programming (C or C++) and coding and documentation standards. (All code developed in class is in Python).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Scie or Comp Engrn or Elect Engrn graduate student; Credit is allowed for only CEN 503 or CEN 591 (Digital Logic Synthesis&Verify) or CEN 598 (Algo Synth & Opt Digital Sys) or CSE 591 (Digital Logic Synthesis&Verify)

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CEN	571	Hardware Accela and FPGA Compu	Graduate students collaboratively work on challenging class projects that focus on designing and optimizing hardware accelerators for computationally intensive algorithms to advance real-life applications. Topics include energy-delay models, timing, circuit optimization, architecture techniques, architecture flexibility, DSP arithmetic, data flow control, and field-programmable gate (FPGA) essentials. In order to be successful in this course, students should have prior knowledge of at least one of the following topics: (1) digital integrated circuits and VLSI systems; or (2) a domain of computational algorithms, e.g., digital signal processing, machine learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, or Electrical Engineering graduate student; Credit is allowed for only CEN 571 or CEN 598 (Hardware Acceleration and FPGA Computing)
CEN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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CEN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-7		
CGF	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-3		
CGF	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHE	211	Intro to Chemical Processing	Applies chemical engineering analysis and problem solving to chemical processes material and energy balance methods and skills.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHM 116 with C or better; MAT 266 or 271 with C or better OR Visiting University Student
CHE	231	IntroTransport Phenom I:Fluids	Transport phenomena, with emphasis on fluid systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 211 with C or better; MAT 267 or 272 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed
CHE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		
CHE	334	Intro TP II:Heat/Mass Transfer	Applies heat and mass transport principles. Design of heat exchangers and continuous contactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; MAT 275 with C or better OR Visiting University Student
CHE	342	Intro Applied Chem Thermodyn	Applies conservation and accounting principles with nonideal property estimation techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student

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CHE	352	Chemical Engineering Lab I	Engineering lab equipment, data collection and analysis; strengthens ability to generate written reports and oral presentations; reinforces teamwork skills; strengthens and extends the understanding of earlier technical contents in the curriculum; strengthens abilities in recognizing and understanding key issues associated with lab and process safety.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 334 with C or better; CHE 342 with C or better; ENG 101, 105, or 107 with C or better; PHY 131 with C or better OR Visiting University Student
CHE	384	Numerical Methods Chem Eng	Study and application of numerical methods in solving problems commonly encountered in chemical engineering. Emphasizes chemical engineering applications using MATLAB and Excel. Roots, linear algebraic equations, matrices, curve fitting, differentiation, integration, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s) w/C or better: Chm Engr BSE major; MAT 242, 342, 343; MAT 274, 275; Pre- or coreq(s): MAT 267, 272 w/C or better if completed; Credit allowed for CEE 384, CHE 384, CHE 394 (Num Mthds for Chm Eng), or MAE 384 OR Visiting University Student
CHE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		
CHE	432	Principles Chem Engr Design	Multicomponent distillation, engineering economics, equipment sizing and costs, plant operation economics, process safety, and simulation and optimization techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	433	Modern Separations	Design of modern separation equipment in chemical engineering other than fractionation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better
CHE	442	Intro Chemical Reactor Design	Applies kinetics to chemical reactor design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better; Credit is allowed for only CHE 442 or CHE 505
CHE	451	Chemical Engineering Lab II	Operation, control and design of experimental and industrial process equipment; strengthens abilities in recognizing and understanding key issues associated with lab and process safety; group research projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 352 with C or better; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	461	Process Dynamic Control	Process dynamics, instrumentation, and feedback applied to automatic process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s): Chemical Engineering BSE major; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	462	Process Design	Applies economic principles to optimize equipment selection and design; process safety; development and design of process systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 432 with C or better; CHE 433 with C or better; CHE 442 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
CHE	468	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prereq(s): Chem Eng BSE mjr; CHE 231 w/ C or better; CHM 233 w/ C or better; Credit for only CHE 468 or CHE 568 or CHE 494(PolyPrin & Proc) or CHE 598(PolyPrin & Proc) or CHM 494(PolyPrin & Proc) or CHM 598(PolyPrin & Proc) OR Visiting University Student
CHE	469	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engr BSE major; CHE 342 OR Civil Engr BSE major; CEE 361 OR Environmental Engr BSE major; EVE 302 OR Materials Scie & Engr BSE major; MSE 330; Credit is allowed for only CEE 569 or CHE 469 or CHE 569 OR Visiting University Student
CHE	473	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells) OR Visiting University Student
CHE	475	Biochemical Engineering	Applies chemical engineering methods, mass transfer, thermodynamics, and transport phenomena to industrial biotechnology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisite: CHE 334 and 442

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CHE	477	Inorganic Membrane & Thin Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 433 or MSE 420; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Films) or CHE 598 (Inorganic Membrane and Films)
CHE	478	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engr BSE major; CHM 116 w/ C or better; CHE 231 w/ C or better; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Tech) or CHE 598 (Biomass Energy Conversion Tech) OR Visiting University Student
CHE	479	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 342 with C or better; CHE 442 with C or better; Credit is allowed for only CHE 479 or CHE 494 (Microbial Bioprocess Engineering) or CHE 598 (Microbial Bioprocess Engineering)
CHE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		
CHE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CHE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
CHE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
CHE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-3		
CHE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MSE 518, EEE 518, MAE 518, MSE 475, or CHE 518
CHE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
CHE	543	Thermodynamics of Chemical Sys	Classical and statistical thermodynamics of nonideal physicochemical systems and processes; prediction of optimum operating conditions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	544	Chemical Reactor Engineering	Reaction rates, thermodynamics, and transport principles applied to the design and operation of chemical reactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student

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CHE	561	Advanced Process Control	Dynamic process representation, linear optimal control, optimal state reconstruction, and parameter and state estimation techniques for continuous and discrete time systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	568	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 468 or CHE 568 or CHE 494 (Polymer Principles & Proc) or CHE 598 (Polymer Principles & Proc) or CHM 494 (Polymer Principles & Proc) or CHM 598 (Polymer Principles & Proc)
CHE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CEE 569 or CHE 469 or CHE 569
CHE	573	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells)
CHE	577	Inorganic Membrane and Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Film) or CHE 598 (Inorganic Membrane and Film)
CHE	578	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Technology) or CHE 598 (Biomass Energy Conversion Technology)
CHE	579	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 579 or CHE 598 (Microbial Bioprocess Engineering)
CHE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student

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CHE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): graduate CHE major
CHE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Prerequisite(s): Ira A. Fulton Engineering graduate student
CHE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHI	101	First-Year Chinese I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student
CHI	102	First-Year Chinese II	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 101; Credit is allowed for only CHI 102 or MND 102 OR Visiting University Student
CHI	110	Intensive Chinese I	Adopts different pedagogical approaches to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, appropriate cultural information related to language use is also an important component of instruction. Trains students to be able to function successfully in Chinese culture. Students don't simply learn to "speak Chinese" or read and write characters as some form of party trick. Teaches a practical skill set that allows students to communicate and behave appropriately in Chinese culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only CHI 101 or CHI 102 or CHI 110
CHI	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
CHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	201	Second-Year Chinese I	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 102; Credit is allowed for only CHI 201 or MND 201 OR Visiting University Student
CHI	202	Second-Year Chinese II	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 201; Credit is allowed for only CHI 202 or MND 202 OR Visiting University Student
CHI	205	Chinese Calligraphy	Introduces styles and techniques of Chinese writing. Requires no knowledge of Chinese or Japanese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		

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CHI	210	Intensive Chinese II	Intensive 2nd-year college-level Modern Standard Chinese designed for students who are highly motivated and have successfully completed at least 1st-year college-level Modern Standard Chinese language course or equivalent. Reviews and reinforces 1st-year Chinese grammatical patterns and introduces new ones in order to further develop students' communicative competence in listening, speaking, reading and writing in modern Chinese. Introduces over 500 new characters and presents and expands an equal number of spoken vocabulary items. Students increase their vocabulary, consolidate their grammar, describe objects and express ideas more accurately and fluently.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): CHI 102 with B or better or CHI 110 with C or better; Students who have credit for CHI 201 or CHI 202 may not enroll in CHI 210
CHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	301	Third-Year Chinese I	Expansion of proficiency in listening comprehension, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student
CHI	302	Third-Year Chinese II	Continuation of CHI 301.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 301 with C or better OR Visiting University Student
CHI	307	Intro to Literary Chinese I	Reading in various genres of pre-20th century literature (wen-yen), with analysis of the structure of the classical writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 202, CHI 210, JPN 202, or KOR 202 with C or better OR Visiting University Student
CHI	308	Intro to Literary Chinese II	Continuation of CHI 307.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 307 with C or better
CHI	321	Chinese Literature	Masterworks of the tradition from the 7th century BCE through the 13th century. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
CHI	322	Chinese Literature	Masterpieces from the later tradition and its transition to modern times. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
CHI	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
CHI	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
CHI	338	Daode Jing: Way to the West	At 5,000 words, the Daode Jing [Tao-te ching, "the Scripture of the Way and its Powers," attributed to the Sage Laozi] is perhaps the shortest religious book in the world. It is also the most widely misinterpreted. In China, Daoists, Buddhists and Confucians have each taken its short, pithy statements as warrant for their very different belief systems. In the West, missionaries, new-age pundits, hippies, rock-stars, mystics and LSD advocates each claim to understand the "true meaning" of Laozi's mystical words. But "the farther one travels, the less one knows..." Students read representative samples of these explanations to understand why this brief book of wisdom has endured for over 2000 years. Requires no knowledge of Chinese. Presents all Chinese texts in the translations of the instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338 or REL 338 OR Visiting University Student
CHI	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
CHI	345	Chinese Film and Civilization	Screening and discussion of recent films from China, Taiwan, and Hong Kong in the context of modern Chinese civilization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346

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CHI	348	Pathways into Chinese Culture	Introduces some important aspects of China's cultural history and traditions. Provides an overview of Chinese history and culture and reviews major developments in science and technology. Incorporates current social and cultural topics and reviews through the lens of historical context. Classroom activities enable students to gain a better understanding of traditional Chinese culture with respect to both elite and popular culture. Conducted in Mandarin and is designed for the students who are currently enrolled in CHI 301 and CHI 401 or whose Chinese proficiency level in all four skills (speaking, listening, reading and writing) are at the intermediate mid to intermediate high level according to ACTFL guidelines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student
CHI	380	The Chinese Language	Introduces the Chinese languages from linguistic perspectives. Topics include the linguistic structure and characteristics (phonetics, phonology, morphology and syntax) of the Chinese language; linguistic history and dialects of Chinese; and its relationship with culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	401	Fourth-Year Chinese I	Focuses on solidifying and improving students' knowledge of modern Mandarin. Emphasizes learning strategies to increase reading and listening comprehension, as well as further strengthening oral fluency and written skills. Surveys a wide variety of original text and media materials, in both full-form and simplified characters. Conducted in Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 302 with C or better OR Visiting University Student
CHI	402	Fourth-Year Chinese II	Continuation of CHI 401.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 401 with C or better OR Visiting University Student
CHI	407	Chinese Acad & Prof Prps I	Part of the Chinese Flagship program; course has a three-fold objective: (1) to improve language proficiency in all four language skills; (2) to support other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; and (3) to develop the use of explicit language learning strategies that support professional-level literacy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 402 with C or better OR Visiting University Student
CHI	408	Chinese Acad & Prof Prps II	Part of the Chinese Flagship Program. Improves language proficiency in all four language skills; supports other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; develops the use of explicit language learning strategies that supports professional level literacy. All course work in Mandarin Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 407 with C or better
CHI	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
CHI	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
CHI	470	Modern Chinese Lit & Culture	Readings in modern Chinese literary texts, including prose, fiction, and poetry. Course content changes with instructor.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302 with C or better
CHI	482	History of Chinese Language	Introduces the history of the Chinese language. Graduate/advanced undergraduate-level introductory course on the historical changes of the sounds, writing system, grammar, and other aspects of the Chinese language. Topics include the historical phonology of Chinese, development of graphs (Hanzi), some topics of syntactic changes in texts, morphology, lexicography, cultural implication of language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302; CHI 308 OR Visiting University Student
CHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
CHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
CHI	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHI	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501
CHI	502	Academic Writing	Trains graduate students in research methodology and conventions in academic writing. Centers on fine tuning students' command of the various components in English expository essays within the academic field of East Asian studies. Also addresses various contexts in academic writing, such conferences and proposals targeting audiences beyond the disciplinary boundaries of East Asian studies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 502 or JPN 502
CHI	514	Advanced Classical Chinese	Close readings in selected premodern texts, with focus on special grammatical features, and increased vocabulary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	561	Readings Traditional Xiaoshuo	Introduces major issues, texts, and resource materials for the study of narrative forms, including short stories and longer works of fiction. Focuses on the period from 1400 to 1900. One year of university-level classical Chinese or equivalent proficiency; three years of university-level modern Chinese recommended.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stndt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596

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CHI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
CHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	101	Introductory Chemistry	Elements of general chemistry. Adapted to the needs of students in nursing and kinesiology and those preparing for general chemistry. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	
CHM	107	Chemistry and Society	General chemical principles and concepts presented in context of social and technological issues, e.g., energy, pollution, global warming, and others. This lecture course may be combined with the laboratory CHM 108 for those interested in lab course credit. Cannot be used for major credit in chemical or biochemical sciences. Both CHM 107 and CHM 108 must be taken to secure SQ credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	
CHM	108	Chemistry and Society Lab	Experiments in chemical principles presented in chemistry and society lectures (CHM 107). Students must complete both CHM 107 and CHM 108 to receive an SQ (General Studies).	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or Corequisite(s): CHM 107 OR Visiting University Student
CHM	111	Gen Chem Lab for Majors I	Laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 117 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Suitable for students who have completed introductory chemistry at the high school level. Both CHM 117 and CHM 111 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 117 with C or better OR Visiting University Student

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CHM	112	Gen Chem Lab for Majors II	Continuation of CHM 111 laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 118 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N		LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	;Prerequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 111 with C or better; Pre- or corequisite(s): CHM 118 with C or better
CHM	113	General Chemistry I	Principles of chemistry. Adapted to the needs of students in the physical, biological, and earth sciences.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better or ALEKS score of 61 or higher OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265 or 270 with C or better if completed OR Visiting University Student
CHM	114	General Chemistry for Engrs	Chemical principles with emphasis toward engineering. Students without high school chemistry or are chemical engineering majors must enroll in the CHM 113, 116 sequence instead of CHM 114.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better or ALEKS score of 61 or higher OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
CHM	116	General Chemistry II	Continuation of CHM 113. Equilibrium theory, thermodynamics, kinetics, electrochemistry, nuclear chemistry, descriptive chemistry.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 113, 114, or 117 with C or better OR Visiting University Student
CHM	117	General Chemistry for Majors I	Lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the CHM 111 laboratory course. Covers electronic structure of atoms and molecules, intermolecular forces, bonding models, molecular geometry, physical states of matter, gas laws, and chemistry of condensed matter and modern materials. Highlights chemical reactivity, periodic trends and descriptive chemistry. Both CHM 111 and CHM 117 must be taken to secure SQ General Studies credit.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prereq(s): Biochemistry, Biophysics or Chemistry major; CHM 101 w/ C or better or ALEKS score of >=61 or Pre- or coreq(s): MAT 170, 171, 210, 251, 265, or 270 w/ C or better if completed OR Visiting University Student
CHM	118	Gen Chemistry for Majors II	Continuation of CHM 117 lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the major's CHM 112 laboratory course. Topics include thermodynamics, properties of solutions, chemical equilibrium, aqueous chemistry, acids and bases, electrochemistry, chemical kinetics, nuclear chemistry, coordination chemistry. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): Biochemistry, Biophysics, or Chemistry major; CHM 117 with C or better
CHM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		Pre-requisites: Biochemistry or Chemistry major; Maximum 45 hours
CHM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	231	Elementary Organic Chemistry	Surveys organic chemistry, with emphasis on the reactivity of basic functional groups. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): CHM 101, 114, 116, or 118 with C or better OR Visiting University Student
CHM	233	General Organic Chemistry I	Chemistry of organic compounds.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	234	General Organic Chemistry II	Continuation of CHM 233.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 233 or 333 with a C or better; Credit is allowed for only CHM 234 or CHM 334 OR Visiting University Student
CHM	235	Elementary Organic Chem Lab	Organic chemistry experiments in synthesis, purification, analysis, and identification. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N		REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): CHM 231 with C or better if completed OR Visiting University Student
CHM	237	Gen Organic Chemistry Lab I	Microscale organic chemical experiments in separation techniques, synthesis, analysis and identification, and relative reactivity.	N		REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 233 with C or better if completed; Credit is allowed for only CHM 237 or CHM 337 OR Visiting University Student
CHM	238	Gen Organic Chemistry Lab II	Continuation of CHM 237.	N		REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 237 or 337 with C or better; Pre- or corequisite(s): CHM 234 with C or better if completed; Credit is allowed for only CHM 238 or 338 OR Visiting University Student

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CHM	240	Math Methods in Chemistry	Introduces mathematical/computational methods in chemical kinetics, thermodynamics, quantum chemistry. Mathematical-based computer lab.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	CS	Prerequisite(s): CHM 116 or 118 with C or better; Pre- or corequisite(s): MAT 272 or 267 with C or better if completed
CHM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	302	Environmental Chemistry	Explores major environmental issues, problems, and solutions from analytical and chemistry perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better OR Visiting University Student
CHM	303	Environmental Chemistry Lab	Lab in environmental chemistry to complement CHM 302. First-hand experience with sampling methods, analytical techniques, and environmental lab methods. Both CHM 303 and CHM 348 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 302 with C or better if completed OR Visiting University Student
CHM	325	Analytical Chemistry	Advanced principles and theory of quantitative analysis, including stoichiometry, equilibria, photometric methods, electrochemistry, separation processes, statistical data analysis, and applications to advanced topics in analytical chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	326	Advanced Analytical Chem Lab	Practical methods of quantitative analysis for chemistry majors, including titrimetric, gravimetric, and photometric analysis, and analytical separation processes, statistical data analysis, and applications to advanced topics in chemical analysis.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 325 with C or better if completed OR Visiting University Student
CHM	327	Instrumental Analysis	Principles of instrumental methods in chemical analysis. Electroanalytical and optical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 325 with C or better; CHM 326 with C or better; Pre- or corequisite(s): CHM 346 with C or better if completed
CHM	328	Instrumental Analysis Lab	Experiments in chemical analysis by electroanalytical and optical techniques.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2		Pre- or corequisite(s): CHM 327 with C or better if completed
CHM	341	Elementary Physical Chemistry	Thermodynamics, equilibrium, states of matter, solutions, and chemical kinetics. For students in premedical, biological, and educational curricula.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better; MAT 251, 265, or 270 with C or better; PHY 101, 112, or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student
CHM	343	Elementary Physical Chem Lab	Physical chemistry experiments.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 341 or CHM 341 with C or better if completed; Credit is allowed for only CHM 343 or CHM 348 and CHM 349 OR Visiting University Student
CHM	345	Physical Chemistry I	Introduces quantum chemistry with application to electronic structure and dynamics of atoms and molecules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better; CHM 240 OR PHY 201 OR both MAT 274 or 275; MAT 242, 342 or 343 with C or better; MAT 267 or 272 with C or better; PHY 131 or 151 with C or better OR Visiting University Student
CHM	346	Physical Chemistry II	Introduces equilibrium and statistical thermodynamics. Laws of thermodynamics, equations of state, multicomponent chemical and phase equilibria, and electrochemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 345 with C or better
CHM	348	Physical Chemistry Lab I	Lab experiments in spectroscopy and computational chemistry. To secure L General Studies credit the following must be taken: CHM 303 & CHM 348 or CHM 348 & CHM 349 & CHM 452.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 345 with a C or better if completed OR Visiting University Student
CHM	349	Physical Chemistry Lab II	Lab experiments in thermodynamics, electrochemistry, and computational chemistry. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 346 with C or better if completed OR Visiting University Student
CHM	385	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student

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CHM	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	433	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, and Woodward-Hoffmann rules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better; CHM 234 or CHM 334 with C or better; Credit is allowed for only CHM 433 or CHM 531 OR Visiting University Student
CHM	435	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 361 or BCH 461 or CHM 460; CHM 234 or CHM 334; Credit is allowed for only CHM 435 or CHM 535 OR Visiting University Student
CHM	442	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 101, 114, 116, or 118 with C or better; Credit is allowed for only CHM 442 or CHM 494 (Practical Nuclear Magnetic Resonance Spectroscopy) or CHM 542
CHM	452	Inorganic Chemistry Laboratory	Preparation and characterization of typical inorganic substances, emphasizing methods and techniques. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 453 with C or better if completed OR Visiting University Student
CHM	453	Inorganic Chemistry	Principles and applications of inorganic chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better OR Visiting University Student
CHM	460	Biological Chemistry	Structure and function of macromolecules and their involvement in the processing of energy and information by living cells.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; CHM 346 with C or better
CHM	471	Solid-State Chemistry	Crystal chemistry, thermodynamics and electrochemistry of solids, nonstoichiometric compounds, diffusion and solid-state reactions, crystal growth, and selected topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre- or corequisite(s): CHM 346 with C or better if completed; Credit is allowed for only CHM 471 or CHM 571
CHM	480	Methods of Teaching Chemistry	Organization and presentation of appropriate content of chemistry; preparation of reagents, experiments, and demonstrations; organization of stock rooms and laboratories; experience in problem solving.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		
CHM	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
CHM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
CHM	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Prerequisite(s): CHM 302, GLG 321, or GLG 481 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CHM 489 or GLG 489 OR Visiting University Student
CHM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
CHM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	501	Current Topics in Chemistry	-	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHM	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate students (degree and non-degree); Credit is allowed for only BCH 520 or CHM 520
CHM	524	Separation Science	Addresses principles and applications for all areas of chemical separations. Emphasizes separations principles in microfluidics and its interface with nanotechnology and traditional electronic materials.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	531	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, molecular orbital theory, and Woodward-Hoffmann rules.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: degree- or nondegree-seeking graduate. Credit is allowed for only CHM 433 or CHM 531
CHM	535	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate degree or non-degree seeking students; Credit is allowed for only CHM 435 or 535
CHM	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
CHM	541	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 541 or MSE 524
CHM	542	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 442 or CHM 542 or CHM 598 (Practical Nuclear Magnetic Resonance Spectroscopy)
CHM	543	Computational Chemistry	Provides basic concepts and practical experience in computational chemistry as applied to molecules and solids. Systematically covers theoretical background and applied aspects of electronic structure methods/simulation, and related visualization techniques. Provides weekly laboratory session will provide hands-on experience with state-of-the-art molecular and solid-state simulation/visualization packages, with an emphasis on their reliability, predictive capability and practical limitations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	546	Molecr Spectroscopy/Group Thry	Applies quantum mechanics to the general problem of the interaction of light with molecular systems. Angular momentum and group theory. Symmetry classifications. Overview of the formalism and experimental techniques in different resonant-based spectroscopies.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	553	Advanced Inorganic Chemistry	Principles of modern inorganic chemistry applied over the entire periodic system. Bonding theory, chemical reactivity, spectroscopic and magnetic properties.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560
CHM	571	Struct, Bond, Symmetry in Mtls	Principles of structural and materials chemistry, emphasizing crystal chemistry. Symmetry of periodic structures (space groups), factors determining bond lengths and coordination geometries, and the role of structure in determining physical properties.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 471 or 571
CHM	581	Structure of Matter/Properties	Models of matter and its properties.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581
CHM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	100	Optimizing Health&Performance	Explores concepts, attitudes, research and practices associated with the optimization of health and performance. Students gain practical and foundational knowledge regarding evidence-based practice, nutrition, physical activity, executive function, strategies and cognition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): College of Health Solutions undergraduate student OR Visiting University Student
CHS	101	The ASU Experience	Required, one-hour course designed to introduce all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university. Covers several core topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions student
CHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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CHS	201	Intl Indigenous Health	This course aims to develop student's understanding of core concepts in the health and well-being of Indigenous peoples worldwide, with particular focus on the Aboriginal and Torres Strait Islander peoples in Australia and Indigenous peoples in United States (or the Americas more broadly). The course highlights the differences in distribution of disease and health disparities between Indigenous and non-Indigenous peoples and develops an understanding of underlying interrelated physical, psycho-social, cultural and other determinants of Indigenous peoples' health. Students will be provided with examples of evidence-based research and health practice to learn about the ways in which Indigenous health and well-being can be supported.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	260	Health Professions Terminology	Prepares students for a field in the health care field and covers medical terms related to all the major body systems including: muscular system, skeletal system, respiratory system, circulatory system, digestive system, reproductive system and urinary system.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only CHS 260 or KIN 294 (Health Professions Terminology)
CHS	280	Exptl Comm Hlth & Research	Provides experiential learning in community health and/or research. Gives students the opportunity to develop professionally; enhance their health education; take ideas and concepts beyond the classroom; and gain experiences and real-world perspectives in research, clinical or community-based settings. Students interact with faculty, researchers and/or professionals in the field across a range of observations and activities.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): College of Health Solutions student or Edson College of Nursing and Health Innovation student OR Visiting University Student
CHS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	300	An Exploration of Well-Being	An engaging, multidisciplinary, scientific and practical exploration into factors influencing the well-being of individuals and society. Students experiment with mindsets, habits, strategies and skills to develop greater awareness and curiosity about lifelong well-being and success.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student
CHS	301	Epidemiology Intl Pub Health	Epidemiology and its use in public health research and practice. This course introduces students to epidemiological principles and methods. It aims to enable students to apply an epidemiological approach to the study of disease and illness, to interpret and assess the quality of evidence of a range of study designs and report on epidemiological research.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	303	Health Promotion	Health Promotion is a fundamental component of any approach to public health and population health, whether it be research, policy or practice. The World Health Organization defines health promotion as the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions. (http://www.who.int/topics/health_promotion/en/). This course provides an overview of health promotion including examination of the social determinants of health, health literacy and foundations in health promotion. During the course students will explore the role of health promotion in addressing a range of current global health issues and their relevance to the field of public health. Students will examine contemporary perspectives on health and health promotion contributions to public health and population health responses. The course enables students to gain an understanding of how health can be defined from different perspectives, and develop core knowledge of health promotion including its foundation theories, principles and concepts. The course will equip students with the capacity to engage in public health and population health through the essential health promotion skills and understandings.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	304	Communicable Disease	This course will introduce students to the burden of infectious or communicable disease worldwide. Students will learn about the theory of transmission modes, surveillance, outbreak investigation, current disease prevention, control and management strategies, and emerging and re-emerging infections. Key case studies covering different types of communicable diseases will be used to illustrate these important concepts. Current and future challenges in communicable disease control will be highlighted.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major

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CHS	305	Princ Prvent & Pub Hlth Surv	Disease surveillance and population health monitoring represents one of the most important tools for public health, for early disease detection and prevention, and the monitoring and evaluation. Early detection of and rapid response to a public health threat has huge potential to save lives and costs from preventing hospitalizations and deaths. This course provides an overview of different types of surveillance systems and the sources of data that are used in such systems. Students learn to assess challenges and limitations associated with different types of public health surveillance systems and develop the skills to examine the tools and approaches that can be used to improve the effectiveness of public health surveillance systems. The course looks at principles of disease prevention more broadly. Public health prevention measures are discussed including immunization and screening, using case studies for both communicable and non-communicable diseases. The role of epidemiological and social factors is also considered.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major; Pre- or corequisite(s): CHS 301; CHS 304; HCD 300
CHS	306	Public Hlth Policy & Programs	The overall aim of this course is to enable students to develop their understanding of both public health policy and programs as a part of public health practice. Students will learn about the concept and role of policy and the key concepts, models and approaches to designing and evaluating public health programs. Case studies from multiple countries and contexts will be used as teaching material.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	307	Health Leadership	The course aims to develop students understanding of different approaches to leading and managing at different levels in health services in local and international contexts to improve individual, community and population level outcomes. Students will be introduced to the common and overlapping skills and features of effective health leadership within public health agency settings requiring coordinated system-wide action through to health care management in more clinically focused patient delivery settings. Topics include management and leadership theories and models; systems perspectives and strategic thinking; influence, power and leading change; managing interprofessional teams and motivating staff; conflict management and improving health worker performance.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	308	Comparative Health Systems	Principles and practice of health system analysis, the sources and utilization of information relating to health services, and frameworks for assessing health systems performance. Examines the constitutional, legal, economic, social and political environments within which health care systems operate. Compares different models of health system funding and operation. Reviews different health services organization and management, health service financing arrangements and the health workforce.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
CHS	309	Globl Chron Disease Prvnt&Ctrl	This course aims to enhance students' understanding of the major non-communicable diseases-specifically so-called "lifestyle diseases" including cardiovascular disease, cancer, type II diabetes, chronic lung disease- and the interaction between their associated lifestyle behaviors such as unhealthy diet, physical inactivity, tobacco use and alcohol use. Students will examine the concept of the epidemiological transition to provide insights into trends in the burden of lifestyle diseases and injuries globally and in developing countries. This course will help students to evaluate prevention and control approaches to lifestyle diseases, and to critique the modern social environment and lifestyle behaviors with respect to global health. Topics include: the global burden of disease, the epidemiological transition, injury prevention, health systems, global tobacco control, obesity, and global action plan on non-communicable diseases.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major

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CHS	340	Health Theory	Health theories help to frame health and health outcomes in our society. Applies health theories to medical problems in order to explore the different levels of influence on behavior: individual, social network, community, health system and policies. Helps students take a deeper look at the intersections between people and their environment as well as understand how influence on our health is constructed all around us.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 OR Visiting University Student
CHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	1-4		
CHS	401	Ethics in Public Health	This course provides an overview of ethical considerations and issues pertinent to public health and health care. Students will examine ethical theories and principles, and key legal concepts, and their application to health care and public health contexts. The course enables students to identify and analyse the ethical challenges of balancing the interests of individuals and communities within a health care context which is costly, complex and increasingly globalized. While the focus is on public health ethics which includes health policy and promotion, clinical and research ethics will also be examined as integral components of contemporary, cutting-edge health care service and delivery.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 45 hours; minimum 2.00 GPA
CHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
CHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		Prerequisite(s): minimum 45 hours
CHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): minimum 45 hours
CHS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	105	Computer Appls&Info Technology	Introduces business information systems from a business intelligence perspective and the uses of application software with emphasis on database and spreadsheet packages for efficient and effective problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	
CIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		
CIS	235	Intro to Information Systems	Survey course introducing the competitive and strategic uses of information systems, how information systems are transforming organizations and their management, and the issues, difficulties, and opportunities facing the technology professional and business manager today.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105, 200 or 220 with C or better; MAT 210, 270, 211 or 271 with C or better; Credit allowed for only CIS 235 or CIS 236 OR Visiting University Student
CIS	236	Honors Information Systems	Introduces strategic leveraging of IS solutions and surveys different facets of IS in order to gain an understanding of how business problems are addressed and opportunities realized.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	Prerequisite(s): Barrett Honors student
CIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	300	Web Design and Development	Focuses on Web site development, including target audience, image presentation, page/content topic organization, site navigational functionality, implementation needs, and future needs. Web site design and development practice using business software products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR post-baccalaureate undergraduate student, OR non-degree student; minimum 2.00 GPA, OR graduate student OR Visiting University Student

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CIS	308	Advanced Excel in Business	Covers advanced Excel skills using an applied focus on different types of decisions one may analyze using spreadsheet capabilities; graphs and charts to communicate complex analytics; pivot tables to slice and dice data for reporting.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	309	Business Process Management	Flow charting, swimlane diagramming, process simulation using modern tool suites. Teaches the types of process evaluation decision analytics most commonly used and covers applied process analysis in a variety of contexts.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	310	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of temporal, geospatial, topical and network business data while also making it easier to digest and utilize for business users.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	311	Business Agile Project Mgmt	Overview of project management emphasizing the fundamentals, analytics and value that support project decision making. Covers how and why projects are selected within organizations, the purpose of projects, and the way that they should be properly managed using industry best practices and frameworks. Includes classical (Waterfall), modern (Agile), and hybrid project management techniques.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	312	Bus Mobile Commerce & Monetize	Teaches students the entire mobile commerce process starting with recognizing what it is, what it does, how to build it and the business value of it. Familiarizes students with software development platforms and ecosystems, strategies for development and deployment, and monetization strategies.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better; Credit is allowed for only CIS 312 or CIS 294 (Business Mobile App Development and Monetization) OR Visiting University Student
CIS	315	Intro Business Data Analytics	Overview of analytics in the business context; concepts of strategic and operational analytics; overview of concepts like dimensional modeling, the Model Lifecycle, data mining, big data, KPIs and metrics, ERP and analytics, in-database/memory analytics; real-time analytics and data stream analysis.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	325	Programming for Bus Analytics	Manipulating, processing, cleaning and crunching data with a focus on utilizing scripting and programming tools toward business applications. Also a practical, modern introduction to extraction, transformation and loading of enterprise data for business applications.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major or Comp Info Systems BS major or Business (Info Security) major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	340	Bus Info Systems Development I	Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to plan and analyze the needs of modern business information system development.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Computer Information Systems BS major; ACC 241, 242 or 271 with C or better; CIS 235 or 236 with C or better; ECN 221 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
CIS	345	Bus Info Systems Development II	Provides a clear understanding of the Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to design, implement, and support modern business information systems development.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Computer Information Systems BS major; CIS 340 with C or better OR Visiting University Student
CIS	355	Bus DataWarehouse Data Modelin	SQL, stored procedures and data warehouse architectures; data warehouse requirements definition, design and analysis; overview of the steps in building information-enabled business models; role of data warehousing in data mining and analytics.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS or Data Science BS major; CIS 365 with C or better OR Visiting University Student
CIS	360	Business Database Concepts	Database theory, design, and application, including the entity-relationship model; the relational, hierarchical, and network database models; and query languages.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Accountancy BS or Business (Information Security) BA major; ACC 231, 232 or 261 with C or better; ACC 241, 242 or 271 with C or better; CIS 105 or 236 with C or better OR Visiting University Student
CIS	365	Business Database Systems	Focuses on business database and data warehousing systems, development and management. Topics include capturing business requirements using data modeling, SQL, data security, operational and analytical data stores and data integrity.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS, Computer Information Systems BS, or Data Science BS major; CIS 235 or 236 with C or better OR Visiting University Student

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CIS	375	Business Data Mining	Building predictive analytics (e.g., SEMMA, KDD); exposure to logistic regression, machine learning and decision tree methods; Understanding lift factors, ROC curves; hands-on use of mining software; business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; WPC 300 with C or better OR Data Science BS major; CIS 235 with C or better; DAT 300 with C or better OR Visiting University Student
CIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
CIS	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
CIS	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student
CIS	405	Business Intelligence	Business intelligence (BI) is a term describing a broad category of applications, technologies, architectures and processes for gathering, storing, accessing and analyzing data to provide business users with timely information to enable better insights into project and process management and evidence-based decision making. BI is based on techniques for data decision capture, cleansing, validation, warehousing and analytics to help decision makers improve decision outcomes. Provides a capstone understanding of the concepts of managing data resources and the development of business intelligence capabilities using data visualization, data warehousing, data mining, online analytical processing decision support systems and other advanced BI topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s) CIS 105 or 236 with C or better OR Visiting University Student
CIS	415	Big Data Analytics in Business	Applications of machine learning, data and text mining for big data, Hadoop, cloud-based solutions, fundamentals of big data programming, social media and big data, NoSQL, GIS, business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; CIS 325 with C or better OR Data Science BS major; CIS 235 with C or better; DAT 301 with C or better OR Visiting University Student
CIS	425	Enterprise Web Technologies	Modern Web application technologies for the enterprise. Covers development of Web applications for handling business transactions and strategies including the use of cloud-based applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 340 with C or better; CIS 360 or 365 with C or better OR Visiting University Student
CIS	430	Mobile Platforms for Business	Mobile application development for the enterprise to address mobile transactions and consumer engagement. Covers business frameworks, app development; and management of devices, applications and services in today's multi-platform environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 345 with C or better; CIS 425 with C or better OR Visiting University Student
CIS	440	Capstone in Information System	Offers a capstone experience integrating concepts from the business as well as the technology curricula. Students analyze, propose and develop a full technology solution for a business enterprise.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3	L	Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 401 with C or better; CIS 425 with C or better; ENG 101, 105, or 107 with C or better
CIS	450	Enterprise Analytics	Model lifecycle analysis, analytics governance, aligning governance, aligning firm and analytics strategy, big data security issues, enterprise search, applied projects.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 355 with C or better, CIS 375 with C or better, CIS 415 with C or better OR Visiting University Student
CIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey CIS BS student

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CIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-6		Prerequisite(s): Barrett Honors student
CIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Information Systems	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-3		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	502	Info Systems & Innovations	Organizational, strategic, and technical issues of the management of information. Evaluation, design, and use information systems as competitive advantage.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey MBA degree program student
CIS	503	DecisionMaking w/DataAnalytics	Presents frameworks and approaches to equip students to recognize patterns in data and models, recommend actions and implement organizational changes. Students learn multiple concepts to improve decision making in organizations including the curation of data repositories for cross-functional analytics, recognition of decision biases, recommendation and communication of business process changes, and the establishment of iterative processes for decision analytics. Readings address decision-making dilemmas and challenges facing managers in analytics-rich business environments. Students get an immersive experience in analyzing the individual biases inherent in decision making, the informational requirements and the data analytics governance requirements to ensure effective deployment and continuous renewal of analytics culture at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	2.5-3		Prerequisite(s): W. P. Carey MBA student; WPC 501 with C or better
CIS	505	Intro to Enterprise Analytics	Ensuring the foundational understanding of contextualized analytics within the business enterprise continuum by covering how data flows and is managed across the landscape of enterprise business processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	506	Information Management	Addresses central issues in managing information to achieve competitive advantage and support innovation. Specific topics covered include data quality, data modeling using both entity relationship models and star schemas, data governance, document management, document search, enterprise performance management and visualization techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): graduate W. P. Carey major
CIS	508	Data Mining I	Charting a roadmap for data-driven decision making and getting a practical understanding of how IT tools and techniques can allow managers to extract predictive analytics and patterns from primarily numeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	509	Data Mining II	Uses tools and techniques to analyze unstructured data that are applied to business problems to support informed decision making and the extraction of predictive analytics and patterns from primarily nonnumeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Pre-req for CIS 509
CIS	510	Bus Process & Workflw Analysis	Builds foundations for process analysis by focusing on information, documents, people, roles and business rules. Provides an introduction to various techniques and tools of process analysis, including an understanding of organizational issues in rolling out change initiatives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 510 or CIS 591 (Business Process Workflow Analysis)
CIS	512	Business Intelligence	Understanding how organizations make use of Business Intelligence (BI) to gain a sustainable competitive advantage. Builds the foundations for evidence-based managerial decision making. Covers technologies for data warehousing and data mining from a managerial perspective. Covers contemporary topics such as real-time BI, business analytics, and business performance management with the help of case studies, audio-video content, guest speakers, online forums to generate creative thinking and discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey graduate major
CIS	515	Business Analytics Strategy	Evaluating, strategically aligning, planning for and directing investments in and governance of processes for continuous renewal of analytics deployments in business.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Pre-requisite: W.P. Carey graduate major
CIS	525	Strategic Value of IT	Instills balanced and disciplined view of IT and business with their interplay. Assigns cases and assignments involving the symbiotic relationship of IT and business to provide real-world exposure for critical thinking and engaging discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 525 or CIS 591 (Strategic Value of Information Technology)

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CIS	540	Information Security & Control	Provides a broad survey of information security and controls, utilizing the COBIT framework to illustrate how information security and controls contribute to effective IT governance. Develops an understanding of the issues associated with information security and effective IT governance, with particular emphasis on how management contributes to the effectiveness of an organization's information security program.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 540 or CIS 591 (Information Security & Controls)
CIS	541	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of large data sets including temporal, geospatial, topical and business data while also making it easier to digest, present and utilize for business needs and users.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	545	Managing Enterprise Systems	Investigates major categories of enterprise systems, factors driving software adoption and keys for successful implementation. Pays special attention to evaluating the potential impact of emerging technologies on business environments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 545 or CIS 591 (Enterprise Systems)
CIS	560	IT Services & Project Mngmt	Provides an overview of the project management process groups and knowledge areas (defined by the PMBOK) and focuses on the application of key concepts, tools and techniques for delivering on-time, on-budget IT project and services that meet end-user needs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 560 or CIS 591 (IT Services and Project Management)
CIS	565	AI and Business	Explores modern artificial intelligence (AI) technology, applications, techniques and their implications for business. People, process and technology factors related to the innovation and adoption of AI in the commercial enterprise and how it shapes the competition and society in the future. Also covers implications for information systems professionals as it pertains to managing the AI infrastructure (robots, algorithms, platforms).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	575	Emerging Technologies	Explores decision models and frameworks applied to assess, evaluate and implement emerging technologies. Explains the principles of sustaining and disruptive technological innovation on the adoption and diffusion of emerging technologies. Discusses the technical, industrial and legal parameters that enable convergence and commoditization of technologies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 575 or CIS 591 (Emerging Technologies in IT)
CIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student
CIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student
CIS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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CIS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Pre-requisite: Specific W.P. Carey Graduate student
CIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey Info Systems PhD student
CIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	502	Theory/Pract/Commun/Persuasion	Theoretical exploration of communicative and persuasive practices as applied in various contexts. Surveys classical, modern, and contemporary theories of persuasion.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	505	Methods/Appl Commun Research	Examines the intellectual, practical, and ethical dimensions of engaging in applied research. Emphasizes empirical and quantitative methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	506	Humanistic Inq/Field Rsrch/Com	Examines interpretive, critical, and rhetorical approaches to communication and advocacy, including hermeneutics, ethnography, and cultural studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	515	Ethical Issues/Commun Advocacy	Examines the ethical issues or concerns related to communication advocacy. Variable topics; examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	516	Mediation and Dispute Resoluti	Examines advocacy's role in fair negotiation and effective and successful dispute resolution. Examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	520	Communication Campaigns	Explores public communication strategies aimed at advocating for general or specific audiences and/or for particular issues and causes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student; CMN 502 or 522 with C or better
CMN	522	Argumentation and Advocacy	Introduces various models of argumentation and their applications to various spheres of advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts students
CMN	531	Communication and Social Chang	Examines human communication and technologies of communication as agents of social change within groups, communities, organizations, and/or cultures.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	532	Advocacy/Interpersonal Setting	Examines particular relational contexts in which advocacy plays a pronounced role (e.g., personal, family, and service provider relationships).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	550	Advocacy in Orgnional Settings	Examines issues of upward influence, the expression of dissent, and grievance systems within organizational contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	551	Democracy & Power in Orgs	Examines structural, historical, relational, and symbolic dimensions of organizational communication and discourses that foster or impede communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies Master of Arts student
CMN	557	Communication and Technology	Assesses technology's role in the social dynamics of human interaction. Emphasizes the impact of technology with regard to communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	565	Globalization and Advocacy	Explores the forces leading to increased intergroup contact and their impact on social, economic, and political dynamics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	570	Comm/Advocacy Social Context	Variable topics course exploring the intersection of communication and advocacy in specific contexts not addressed in other elective courses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student

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CMN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisite: Communication Studies Master of Arts student
CMN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Communication Studies MA student
CMN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CNE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; PHY 122 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CNE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student
CNE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CNE	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CNE	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Credit is allowed for only CON 243 or CNE 243
CNE	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student

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CNE	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N		PRA	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296
CNE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212, CNE 212, or MAE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CNE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engr BSE, Construction Engr BSE, or Environmental Engr BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student
CNE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CNE	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engrg BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CNE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	(L or HU) & H	Prerequisite(s): Civil Engr BSE major; CEE 300 with C or better; ENG 101, 105, or 107 with C or better OR non-CEE junior or senior; ENG 101, 105, or 107 with C or better; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CNE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CNE	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student
CNE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CNE	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engr major; senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student

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CNE	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student
CNE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Construction Engineering	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CNE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4	L	Prereq(s): ENG 101, 105, 107 w/C or better; CivEng; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR ConEng; CEE 321, CNE 321; CEE 351, CNE 351 OR EnvEng; CEE 341; EVE 302; EVE 303; Crdt only for CEE 486 or CNE 486 OR Visiting University Student
CNE	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students
CNE	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	L	Prerequisite(s): Constr Mgmt BS major, Constr Engr BSE major, BIS major w/ Constr Mgmt emphasis, or Constr Mgmt minor; CNE 453 or CON 453; ENG 101, 105, or 107 w/ C or better; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
COE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
COE	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
COE	503	Intro to Qualitative Research	Terminology, historical development, approaches (including ethnography, ethnomethodology, critical theory, grounded theory, and hermeneutics), and qualitative versus quantitative social sciences; methods of inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
COE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
COM	100	Intro to Human Communication	Topics-oriented introduction to basic theories, dimensions, and concepts of human communicative interaction and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	
COM	110	Elements Interpersonal Comm	Demonstration and practice of communicative techniques in establishing and maintaining interpersonal relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	124	Media and Culture	Introduces contemporary intercultural issues as expressed through various media in American society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	C	
COM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Pre-requisite: Maximum 24 earned hours
COM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	207	Intro to Communication Inquiry	Bases of inquiry into human communication, including introduction to notions of theory, philosophy, problems, and approaches to the study of communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	222	Argumentation	Philosophical and theoretical foundations of argumentation, including a comparison of models of advocacy and evidence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student

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COM	225	Public Speaking	Verbal and nonverbal communication in platform speaking. Discussion and practice in vocal and physical delivery and in purposeful organization and development of public communication.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
COM	230	Small Group Communication	Principles and processes of small group communication, attitudes, and skills for effective participation and leadership in small groups, small group problem solving, and decision making.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	
COM	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
COM	241	Intro to Oral Interpretation	Communication of literary materials through the mode of performance. Verbal and nonverbal behavior, interface of interpreter with literature and audience, and rhetorical and dramatic analysis of literary modes.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	250	Communication & the Workplace	Introduces the study of communication in the workplace, including topics such as successful organizational communication strategies, supervisor and peer relationships, workplace conflict, new media and technology, professionalism, organizational morale, work-life well-being and employee socialization.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	259	Comm Bus & the Professions	Interpersonal, group, and public communication in business and professional organizations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): non-Communication student; minimum 25 hours OR Visiting University Student
COM	263	Elements Intercultural Comm	Basic concepts, principles, and skills for improving communication among persons from different minority, racial, ethnic, and cultural backgrounds.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	277	Sport Communication	Explores, synthesizes and evaluates the connection between communication and sport by examining the role and place of sport in community building, identity formation and media representations.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Credit is allowed for COM 277 or COM 294 (Examination of communication in the sport context) or COM 294 (Sport Communication)
COM	281	Communication Activities	Participation in forensics or interpretation cocurricular activities.	N		PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		
COM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N		PRA	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	300	Comm in Interdiscipl Studies	Examines and analyzes communication in the context of other academic disciplines. Open to BIS majors only.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): BIS student; ; minimum sophomore standing; minimum 2.00 GPA; COM 100 with C or better; COM 225 with C or better OR COM 259 with C or better OR Visiting University Student
COM	302	Representations of Veterans	What is a hero? At what cost do we create them and how do they make a total homecoming after trauma? What do we mean when we use words like sacrifice, warrior queens, war crimes, and just war? Using sources from the Bhagavad Gita through Homer and Shakespeare, course surveys the foundations of history, war, politics and economics as well as the mythology of religious practices of Greeks and Romans to see the change and consistency with contemporary visual arts, theater, fiction, social media, poetry and film.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
COM	308	Adv Research Methods in Comm	Advanced communication research methods, including quantitative, qualitative, and critical approaches.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 207 with C or better; ENG 101, 105, or 107 with C or better; MAT 117 or an MA general studies course with C or better; minimum 2.00 GPA OR Visiting University Student
COM	309	Rhet/Interp/Methods-Commun	Examines humanistic and qualitative approaches to communication. Introduces textual, interactional and ethnographic methods.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better; minimum 2.0 GPA OR Visiting University Student
COM	310	Relational Communication	Explores communication issues in the development of personal relationships. Current topics concerning communication in friendship, romantic, and work relationships.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	312	Comm, Conflict & Negotiation	Theories and strategies of communication relevant to the management of conflicts and the conduct of negotiations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student

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COM	314	Inner-City Families	Examines issues and concerns that confront inner-city families. Blends theory and application. From a theoretical perspective, examines issues that affect families who live in the inner city (e.g., race and poverty), as well as specific skills and programmatic elements that are needed to work with families in an urban setting. In terms of application, provides an intensive service-learning-based experience. Engages students in specific service to an embedded inner-city organization for a minimum of 3 hours per week. Students work with the professor to determine appropriate service placements.	N		PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100
COM	316	Gender and Communication	Introduces gender-related communication. Examines verbal, nonverbal, and paralinguistic differences and similarities within social, psychological, and historic perspectives.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	317	Nonverbal Communication	Study of communication using space, time, movement, facial expression, touch, appearance, smell, environment, objects, voice, and gender/cultural variables.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
COM	319	Persuasion/Social Influence	Variables that influence and modify attitudes and behaviors of message senders and receivers, including analysis of theories, research, and current problems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	320	Communication and Consumerism	Critical evaluation of messages designed for public consumption. Perceiving, evaluating, and responding to political, social, and commercial communication.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	321	Rhetorical Theory and Research	Historical development of rhetorical theory and research in communication, from classical antiquity to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & H	Prerequisite(s): COM 100 with C or better; ENG 101, 105, 107, or 111 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	323	Comm Approach Popular Culture	Critical analysis of popular culture within social and political contexts; emphasizes multicultural influences and representations in everyday life.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	324	Rhetoric and Media Criticism	Critical examination of media arts, including cinema, television, and video. Applies rhetorical, textual, and interpretive methods of criticism.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Pre-requisite: Minimum 2.0 GPA
COM	325	Adv Public Spk & Presentations	Social and pragmatic aspects of public speaking as a communicative system; strategies of rhetorical theory and the presentation of forms of public communication.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 225 with C or better; ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	326	Court Room Oratory	Increases knowledge and appreciation of the role of communication in the development of legal and public policies.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		
COM	327	Civil Communication	Offers a theoretical understanding of civil communication and methods for applying civil communication practices in a variety of contexts.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	328	Communicating Science:Publ Spk	Applies the fundamentals of public speaking and communication theory to technical and scientific presentations. Prepares students to communicate science and technology subject matter through presentations to the general public. Students adapt complex messages for a variety of audiences through traditional and multimodal presentations.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only COM 328 or COM 394 (Communicating Science) or LSC 394 (Communicating Science)
COM	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Drm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Drm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Drm Wrk:Pg to Stg&Scrn) OR Visiting University Student
COM	341	Social Contexts Performance	Adaptation and performance of literature for the community outside the university. Research into the practical uses of performed literature.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA
COM	342	Oral History and Storytelling	Examines the formation of culture and history through research, presentations, the collection of oral history, and the telling of stories.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 101 or 102; Credit is allowed for only COM 342 or CMN 394 (Storytelling and Oral History) or COM 394 (Storytelling and Oral History) OR Visiting University Student
COM	353	Professional Communication	Introduces both verbal and written professional communication styles and technologies in preparation for communication-related internships and careers.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
COM	363	Latinxs and the Media	The rapid growth of Latinx-media within the U.S., and transnational/regional media in the Americas, is unprecedented. Local and global organizations serving Latinx communities are increasingly acknowledging the importance of preparing professionals and academics with an understanding not only of Latino communities, but also of media industries and communication issues that impact those communities. Examines the production, distribution, and consumption of Latinx Media and images in the United States (U.S.). Focuses on a wide range of mediated cultural production with an emphasis on visual media such as television, film, advertising and digital/social media. Pays special attention to the influence of the so-called Latinx market, the configuration of national, racial and ethnic identities, politics, cultural production and the ways it challenges and/or reproduces competing cultural ideologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 363 or COM 394 (Latinos and Media) or TCL 394 (Latinos and Media) OR Visiting University Student
COM	364	Cultural Communicology	Basic introduction to cultural communicology, focusing on its relationship to general systems theory and semiotics (the study of signs and sign systems). Focuses on lived-experience as a semiotic interrelation between culture and communication. General systems theory and semiotic theory are used to study culture as a living condition of communicative relations among humans and within their environment. Emphasizes practical applications to real-world problems. Examines communication as a confluence of intrapersonal, interpersonal, group and transcultural networks of codes and messages. Uses comparative cultural contexts as a basis for applied analysis.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): COM 100; Credit is allowed for only COM 364 or COM 394 (Cultural Communicology) OR Visiting University Student
COM	371	Language, Culture, &Comm	Cultural influences of language on communication, including social functions of language, bilingualism, biculturalism, and bidialectism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): COM 263 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	377	Comm, Terrorism, & Nat'l Sec	Surveys strategic communication and its relationship to terrorism challenges facing the United States and the rest of the world. Begins with a look at language and definitions, how strategic communication functions are traditionally conceptualized, and the scope and extent of the terrorism problem. Focuses on the contemporary problems of terrorism, including its extent, tactics, and strategies and strategies that aim to combat it. Concludes with a look at new frontiers in the terrorism struggle, including new media and communication approaches.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA
COM	382	Classroom Apprenticeship	Nongraded credit for students extending their experience with a content area by assisting with classroom supervision in other COM courses.	N	PRA	N	YGB	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	383	Communication and Mentoring	Explores the role of communication in face-to-face and online mentoring relationships with an emphasis on message shaping, nonverbal communication, professionalism and audience analysis. Applies practice and theory from a variety of lower-division communication courses (public speaking, professional and business, small group, intercultural and interpersonal) to prepare students for mentoring roles in the Communication Assessment Learning Lab (CALL) on ASU's west campus. During the semester, students (individually and as a member of a group) are engaged in creating and delivering both online and in-person public speaking tutorials.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100 or 110 or 230 or 259 or 263 with B or better; COM 225 with B or better; Credit is allowed for only COM 383 or COM 498 (Call Lab Mentorship) OR Visiting University Student
COM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	400	Communication in Professions	Specialized study of communication processes in professional and organizational settings.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU & C	Prerequisite(s): Interdisciplinary Studies or Business Communication student; COM 259 or COM 100 and 225 with C or better; minimum 2.00 GPA; minimum sophomore standing OR Visiting University Student
COM	407	Adv Critical Methods in Comm	Examines critical approaches relevant to communication, including textuality, social theory, cultural studies, and ethnography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 407 or COM 507 OR Visiting University Student
COM	408	Quant Research Meth in Comm	Advanced designs, measurement techniques, and methods of data analysis of communication research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 408 or COM 508 OR Visiting University Student

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COM	410	Intrprsnl Com Thry & Resrch	Survey and analysis of major research topics, paradigms, and theories dealing with message exchanges between and among social peers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 308 with C or better; COM 110 or 310 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	411	Communication in the Family	Broad overview of communication issues found in marriage and family life, focusing on current topics concerning communication in the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 411 or CMN 598 (Communication in the Family) OR Visiting University Student
COM	413	Resilient Rels & Communities	Explores resilience in individuals, relationships and communities, placing specific emphasis on the psychological, social and cultural factors that determine how people cope, recover and even thrive after experiencing major adversity or disruption and how resilience is defined, enacted and sustained through communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): min junior standing; min 2.00 GPA; Credit is allowed for COM 413 or COM 494 (Resilient Comm & Relationships) or CMN 598 (Resilient Comm & Relationships) or PSY 598 (Resilient Comm & Relationships) OR Visiting University Student
COM	414	Crisis Communication	Role of communication in crisis development and intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	415	Risk Communication	Understanding how risk is constructed and assessed across social spheres, developing familiarity with dominant approaches to framing risk and the principles and professional practices of risk communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA; minimum junior standing; Credit is allowed for only COM 415 or COM 494 (Risk Communication) OR Visiting University Student
COM	416	Gender and Race in the Media	Explores how the mass media constructs gender and race and perpetuates views of minorities and varied nationalities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	417	Communication and Aging	Critical study of changes in human communicative patterns through the later adult years, with attention on intergenerational relationships and self-concept functions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	420	Rhetoric & Community Advocacy	Critical rhetorical study of local communities and advocacy, including fieldwork guided by rhetorical theory; the intersection of media, rhetoric and advocacy; and reflexivity in rhetorical fieldwork. Examines rhetoric in the context of community advocacy and through participant observation within social controversies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 308 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 420 or COM 494 (Rhetoric and Community Advocacy)
COM	421	Rhetoric of Social Issues	Critical rhetorical study of significant speakers and speeches on social issues of the past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 308 or 309 with C or better; COM 321 or 323 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	422	Advanced Argumentation	Advanced study of argumentation theories and research as applied to public forums including: political, business, and legal contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	L	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	423	Facilitating Collab & Dialogue	Explores processes of collaboration, dialogue, deliberation and participative decision making. Examination of both philosophical and scientific perspectives on these processes as they relate to communication in various settings (community relations, dispute resolution, social work, policing and politics) and in personal relationships and family life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only CMN 598 (Facilitating Collaboration and Dialogue) or COM 423 or COM 494 (Facilitating Collaboration and Dialogue) OR Visiting University Student
COM	424	Television Studies & Criticism	Surveys critical and historical approaches to television as a medium; to television research; and to television's effects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.00 GPA
COM	426	Political Communication	Theories and criticism of political communication; including campaigns, mass persuasion, propaganda, and speeches. Emphasizes rhetorical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	427	Crime and Media	Examines the relationships among crime and discourse, media representations of crime and criminals, and the structural deficiencies in society that perpetuate relations of domination and oppression based on class, race, gender and sexuality.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 427 or CRJ 427 or COM 494 (Crime, Communication and Media) or CMN 598 (Crime, Communication and Media) OR Visiting University Student
COM	428	Graphic Novels	Rhetorical analysis, with a focus on the graphic novel as both persuasive product and practice. Explores the communicative, persuasive and cultural effects of this medium and specifically offers vocabulary and tools for critically viewing its influence on popular culture.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only COM 428 or COM 494 (Graphic Novels and Popular Culture) OR Visiting University Student

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COM	429	Semiotics/Visual Communication	Semiotic analysis of mediated forms of communication, including film, television, and photography. Includes the political and aesthetic dimensions of images.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student
COM	430	Leadership Group Communication	Theory and process of leadership in group communication, emphasizing philosophical foundations, contemporary research, and applications to group situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	432	Forgiveness and Reconciliation	Examines various communication processes related to forgiveness and reconciliation with a focus on constructive, prosocial responses to interpersonal relationship hurt and disappointment.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only COM 432 or COM 494 (Forgiveness and Reconciliation) or COM 494 (Forgiveness, Mindfulness, and the Healthy Self) or CMN 598 (Forgiveness and Reconciliation) OR Visiting University Student
COM	441	Performance Studies	Theory, practice, and criticism of texts in performance. Emphasizes the interaction among performer, text, audience, and context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; COM 308 with C or better; minimum 2.00 GPA
COM	442	Identity, Perf, Human Comm	Explores communication dimensions of self and others as performance. Examines topics that include gender, race, sexuality, age, and ethnicity through performance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 225 with C or better; COM 241 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	445	Narrative Performance	Theory and practice of performing narrative texts (e.g., prose fiction, oral histories, diaries, essays, letters). Includes scripting, directing, and the rhetorical analysis of storytelling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; minimum 2.00 GPA
COM	446	Perform Lit Written by Women	Explores, through performance and critical writing, literature written by women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	450	Organizational Communication	Offers advanced exploration of organizational communication principles through analyses of scholarship and contemporary case studies. Topics include workplace culture, networking, leadership, management, nonprofits, virtual organizing, work-life balance, organizational change, power, control and ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 250 with C or better; COM 308 or 309 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	451	Comm and Work Relationships	Communication principles and practices associated with supervisory, peer, and client relationships.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
COM	452	Communication of Happiness	Examines how communication behaviors relate to constructing happiness and wellbeing. Topics include gratitude, forgiveness, social support, appreciation, social networks and communicative contagion of mood intersecting with issues of dyadic, group and organizational communication. Auxiliary readings come from a variety of disciplines, including psychology, management, sociology, positive organizational scholarship and appreciative inquiry. Course activities include reading, field exercises, journal writing, exams, project presentation(s) and paper(s).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA; minimum junior standing OR Visiting University Student
COM	453	Communication Training/Develop	Examines the procedures and types of communication training and development in business, industry, and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	454	Rhetorical/Critical Approaches	An historical and contemporary account of how public relations messages build corporate identities and persuade audiences by shaping public values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA; Credit is allowed for only COM 454 or CMN 598 (Rhetorical&Critical Approaches to Public Relations)
COM	455	Surveillance & Popular Culture	Surveys representations of surveillance in popular culture.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CMN 598 (Surveillance, Film and Culture) or COM 455 or COM 494 (Surveillance, Film and Culture) or STC 598 (Surveillance, Film, and Culture)
COM	456	Political Comm Campaigns	Theory and research related to political campaign communication. The persuasive process of political campaigning, the role of the media, the candidate and image creation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA
COM	457	New Media	Explores how new communication and information technologies affect communication and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student

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COM	458	Media and Everyday Life	Considers media in the routine, habitual and somewhat unconscious aspects of our lives, particularly mobile media transported in and out of public and private spaces.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 458 or COM 494 (Media and Everyday Life) Visiting University Student
COM	459	Social Media Networks	A network-based perspective plays an increasingly important role in our understanding of contemporary communication process of which much has shifted from a hierarchical, densely bounded group basis to a personalized, lateral network. Especially, along with the popularity of social media, social networking has become a key term that characterizes our everyday life. Discusses the role of new media technologies in evolving networked society, and how online networks are intertwined with our offline life. Covers theories and computerized methods that help understand online network structure. Includes lectures and discussions on theoretical issues with hands-on exercises of analytic methods.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.50 GPA; MAT 142 or higher with C or better; Credit is allowed for only COM 459 or COM 494 (Social Networks)
COM	463	Intercultural Comm Globl Cntxt	Survey and analysis of major theories and research dealing with communication between people of different cultural backgrounds, primarily in international settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & G	Prerequisite(s): COM 263 with C or better; COM 308 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	464	Communicative Sexualities	Grounded in the discipline of communication, provides an introduction to the qualitative research practice of semiotic phenomenology. Examines sexuality as a personal, social, historical, and cultural phenomenon, wherein communication is studied as the mediating force through which meanings are ascribed to sexuality and sexual experience. Sexuality is studied as it manifests among a wide variety of people, practices, and contexts. U.S. American culture provides the primary cultural context. Addresses basic questions including: How do we understand sexuality? How have we come to know what we know about sexuality? How do we understand the relationship between sexuality as personal desire, and sexuality as social norm in specific cultural contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): minimum junior standing; minimum 2.50 GPA OR Visiting University Student
COM	465	Intercultural Comm Workshop	Experientially based study of communication between members of different cultures designed to help students improve their intercultural communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	467	Digital Rhetoric	Critical rhetorical study of intersection of public advocacy, deliberation, argumentation and digital media. Examines a variety of digital media as they intersect with theories of rhetoric. Explores digital technology through a blending of criticism upon and creation of digital artifacts.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 207 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 467 or COM 494 (Digital Rhetoric)
COM	471	Global Media&Cultural Identity	Explores theory and practices of global media production, dissemination and consumption. Surveys the ways in which local, regional and global sociocultural and political forces interplay to shape cultural identities and media consumption.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 2.50 GPA; junior standing OR Visiting University Student
COM	477	Sport, Culture, and Discourses	Introduces sport as a global economic and cultural force, and as a foundational discourse experienced largely through media. Facilitates the understanding of sport as a major cultural and socializing institution and, thus, as a key site for the construction of knowledge, understandings, ideologies, and identities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA
COM	482	Communication Instr and Train	Explores instructional communication practices applied to professional training settings. Considers verbal, nonverbal and technological aspects of instructional communication with an emphasis on training professional and community audiences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA OR Visiting University Student
COM	483	Advanced Com & Mentoring	Students serve as peer mentors in the Communication Assessment Learning Lab (CALL) with instructional emphasis on speaker apprehension, listening, the dynamics of group communication and leadership. Through experiential learning, mentors employ ethical peer tutoring practices by coaching undergraduates in managing public speaking apprehension, speech development and organization. Further, mentors provide on-the-spot feedback to undergraduates relating to delivery techniques, style, nonverbal communication, persuasive strategies and the use of presentational material.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 383 with C or better OR Visiting University Student

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COM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): COM 225 with C or better; COM 308 with C or better; minimum 56 hours; minimum 2.00 GPA or New College communication student with minimum 2.80 GPA
COM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
COM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-7		
COM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	501	Research Methods in Comm	Critical analysis of systems of inquiry in communication, focusing on the identification of variables and approaches to conducting research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student
COM	504	Theories and Models in Comm	Theory construction, metatheoretical concerns, models, construct definition, and comparative analysis of current theories in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student
COM	507	Qual Rsrch Methods in Comm	Qualitative research methods, including interviewing, field methods, and other nonquantitative techniques for analyzing communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications Graduate student; Credit is allowed for only COM 407 or 507
COM	508	Quant Rsrch Methods in Comm	Empirical research designs, measurements, and statistical strategies and techniques in analyzing and evaluating experimental and descriptive research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Pre-requisites: Communications Graduate student. Credit is allowed for only COM 408 or COM 508
COM	510	Transmedia Narratives	Explores the history, production, distribution and consumption of transmedia narratives as an emergent multiple-platform dynamic of storytelling. Focuses on digital storytelling, the dynamics of nonlinear narrative and immersive audience experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	530	Training and Development	Provides an in-depth review of the core concepts relevant to training and development informed by adult learning theories and situated within contexts relevant to the human communication discipline. Purposefully designed to advance students' understanding of the role of communication and human interaction in training and development especially in workplace contexts. Throughout the coursework, students learn and discuss key scholarly perspectives, which enable them to (a) more deeply appreciate and understand the training and development cycle components, (b) reflect on and analyze their own experiences as participants in training and development sessions, and (c) create and implement learner-centered training and development plans grounded by theoretical frameworks.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communication MA student; COM 501 with B or better; COM 504 with B or better; Credit is allowed for only COM 530 or COM 598 (Training and Development)
COM	540	Conducting Comm Research	Develops the skills necessary to conduct communication research in the workplace. Students develop a research proposal for a project that they could conduct at their current jobs or a job they would like to have. They may choose to develop a proposal for their capstone project or a project that they would like to conduct in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; minimum four completions of COM 598; minimum 3.00 GPA
COM	550	Capstone	Culminating experience of the Master of Arts in Communication. The capstone course allows each student to develop a project that answers a question or solves a problem tailored to his or her interests, needs and goals. Develops final products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; COM 540; minimum four completions of COM 598; minimum 3.00 GPA
COM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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COM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Pre-requisite: Communications Graduate student
COM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	604	Theory Construction in Comm	Review and analysis of philosophical problems inherent in communicative research and of metatheories designed to deal with these problems.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	607	Contemporary Rhetorical Method	Analysis of issues in the practice of rhetorical communication research, including criticism and scholarship.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	608	Multivar Stat Anlys Data Comm	Statistical analysis of communication research data. Multivariate procedures used in communication research and methods of causal analysis.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	609	Adv Qual Research Meth Comm	Analysis of issues in the practice of qualitative communication research, including data gathering, fieldwork issues, analysis strategies, and reporting results.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): Communications Graduate student
COM	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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CON	100	Introduction to Construction	Introduces construction industry sectors and professionals. Additional content includes developing personal competencies required of construction professionals.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	101	Const/Culture: a Built Environ	Analyzes the cultural context of construction, emphasizing its centrality in the evolution and expansion of built environments as expressions of ethical and historical value systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	HU & H	
CON	106	Intro to Con Mat for Built Env	Effects of concrete-making materials (aggregates, cements, admixtures, etc.) on the properties of fresh and hardened concrete. Discusses concrete mixture proportioning along with the calculations and statistical analysis of strength testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4	SQ	
CON	221	Applied Statics	Vectors, forces and moments, force systems, equilibrium, analysis of basic structures and structural components, friction, centroids, and moments of inertia.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): MAT 170 or higher with C or better; PHY 111 with C or better; PHY 113 with C or better OR Visiting University Student
CON	223	Strength of Materials	Analyzes strength and rigidity of structural members in resisting applied forces. Stress, strain, shear, moment, deflections, combined stresses, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): CON 221 with C or better; CON 252 with C or better OR Visiting University Student
CON	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CON	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Credit is allowed for only CNE 243 or CON 243
CON	244	Working Drawing Analysis	Provides the ability to read and understand architectural plans; to understand drawing symbols, dimensions, abbreviations, and terms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	251	Microcomputer Appls for Constr	Applies the microcomputer as a problem-solving tool for the constructor. Uses spreadsheets, information management, and multimedia software.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better OR Visiting University Student
CON	252	Bldg Constr Meth, Matl, Equip	Emphasizes Vertical construction. Methods, materials, codes, and equipment used in building construction corresponding to the division of the CSI Master Format.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		
CON	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student
CON	273	Electrc Constrcn & Proj Mgmt	Electrical construction, design, estimating, scheduling and project management. Electrical safety, blueprints and symbols, theory, sequence of installation. National Electrical Code (NEC).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		
CON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296
CON	310	Testing of Material for Constr	Structural and behavioral characteristics, engineering properties, measurements, and application of construction materials. Not open to engineering students.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Construction Management BS major; CON 221 with C or better; Pre- or corequisite(s): CON 223 with C or better if completed OR Visiting University Student
CON	343	Adv Hvy Equip Operations	Reviews the principles of horizontal construction. Emphasizes fleet operations, maintenance programs, methods and procedures to construct tunnels, roads, dams and the excavation of buildings.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 252; minimum junior standing; Credit is allowed for only CON 343 or CON 394 (Advanced Heavy Equipment Operations) OR Visiting University Student
CON	345	Mechanical Systems	Design parameters and equipment related to heating and cooling systems for mechanical construction. Biorelated aspects of mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 221 with C or better; CON 252 with C or better; PHY 111 or 121 with C or better; PHY 113 or 122 with C or better OR Visiting University Student

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CON	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engrng BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CON	384	Env Aspects of Heavy Const	Methods, measures and analysis related to control of erosion, dust generation and storm water discharge during projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): BS Construction Management major. Pre- or corequisite(s): CON 243. Credit is allowed for only CON 384 or CON 394 (Environmental Aspects of Heavy Construction)
CON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Pre-requisite: Engineering BS or BSE student
CON	424	Structural Design	Economic use of concrete, steel, and wood in building and engineered structures. Design of beams, columns, concrete formwork, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; Pre- or corequisite(s): CON 310 OR Visiting University Student
CON	441	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prereq(s): Con Engrn BS or Con Mngmt BSE major; min junior standing; Credit is for only CON 441 or CON 541 or CEE 494(Pub Wrks Cap Con) or CON 494(Pub Wrks Cap Con) or CEE 598(Pub Wrks Cap Con) or CON 598(Pub Wrks Cap Con) OR Visiting University Student
CON	446	Marketing for Construction	Provides key marketing practices to include strategic planning, marketing collateral, networking, business development, and interview preparation for project pursuits. Covers all aspects of service-based marketing topics and practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): COM 225; CON 221 with C or better OR Visiting University Student
CON	448	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS or Civil (Sustainable Engineering) BSE major; min senior standing; Credit is for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustainability in Construction) OR Visiting University Student
CON	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student
CON	451	Innovative Project Delivery	Studies design and construction interaction; the RFP (request for proposal) and RFQ (request for quote) process; risk allocation issues; developing successful project proposals, procurement and selection.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management, Construction Engineering, Civil Engineering, or Architectural Studies major; senior standing; Credit is allowed for only CON 451 or CON 494 (Alt Project Delivery Mthds) or CON 551
CON	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engrn major; senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student
CON	454	Trenchless Construction Methods	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods and materials required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 243 or CON 243; Credit is allowed for only CON 454 or CON 554 OR Visiting University Student

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CON	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student
CON	457	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 457 or CON 557 OR Visiting University Student
CON	465	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing and efficient practices.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 465 or CON 565
CON	467	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 467 or CON 567 or CON 494 (Advanced Procurement Systems)
CON	483	Advanced Building Estimating	Concepts of pricing and markup, development of historic costs, life cycle costing, change order and conceptual estimating.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Visiting University Student
CON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CON	486	Heavy Construction Estimating	Methods analysis and cost estimation for construction of highways, bridges, tunnels, dams, and other engineering works.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Construction Engineering BSE major OR Visiting University Student
CON	487	Project Controls	Project staff roles and responsibilities, project documentation process and control, project control processes to manage quality, schedule and budget, quantity tracking and earned value management, and financial management of a construction project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre- or corequisite(s): CON 495 OR Visiting University Student
CON	488	Heavy Con Earthworks	Geotechnical issues with respect to foundation grading, forming and location for various types of infrastructure and transportation projects. Also includes streets, highway and embankment developments, retaining wall system, mechanically stabilized earth walls, and required quality control methods for these activities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 488 or CON 494 (Heavy Construction Earthworks)
CON	491	Construction Project Capstone	Develops understanding and knowledge of topics and concepts required to be a construction manager. A construction project is the basis for applying cost estimating, scheduling, safety, communications and other construction management skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 383; CON 495; Pre- or corequisite(s): CON 455; Credit is allowed for only CON 491 or CON 494 (Construction Project Capstone)
CON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6		Prerequisite(s): Barrett Honors student
CON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students

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CON	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	L	Prerequisite(s): Constr Mgmt BS major, Constr Engr BSE major, BIS major w/ Constr Mgmt emphasis, or Constr Mgmt minor; CNE 453 or CON 453; ENG 101, 105, or 107 w/ C or better; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
CON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-3		
CON	501	Construction Research Methods	Data collection methodologies, applied parametric and nonparametric statistics, data analysis techniques, technical writing, and data presentation.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Construction Graduate student
CON	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Civil Engineering or Construction or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)
CON	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511
CON	530	Facil Operations & Maintenance	Operations, maintenance and energy management requirements of various types of facilities and built environments. Ethical practices	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 430, 494 (Facilities Management/Operations & Maintenance), 530 or 598 (Facilities Management/Operations & Maintenance)
CON	531	FM Building Energy Mgt	Understand and learn energy management techniques in facilities management. Identifying and performing efficiency evaluations on various types of heating, ventilation and air conditioning systems in typical buildings. Concepts and methods of managing, adjusting and balancing equipment and systems for maximum facility performance. Facilities organizations best practices to maximize energy savings and performance, such as insulation usage, lighting optimization, energy management systems and commissioning procedures. Identification of ancillary benefits to energy-efficient building systems such as indoor air quality, sustainability and energy audits.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CON 531 or CON 598 (Facility Management Building)
CON	532	Facilities Project Management	Understand and learn project management techniques in facilities management. Stakeholder analysis, including roles, responsibilities and risk considerations. Asset owner and manager considerations within project components and deliverables. Development of project scope, requirements, schedules, budgets and communication plans from a facility manager's perspective. Best practices of facilities organizations for managing contract types, contract governance and performance management.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only CON 532 or CON 598 (Facility Project Management)
CON	534	Retrofit Construction	Focuses on energy efficiency retrofits in existing commercial buildings. Defines retrofit and why we retrofit. Examines current industry practices, impacts of retrofit construction on finances and the environment, and independent student investigation.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed only for CON 534 or CON 598 (Retrofit Construction)
CON	540	Construction Productivity	Productivity concepts. Data collection. Analysis of productivity data and factors affecting productivity. Means for improving production and study of productivity improvement programs.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction MS or Construction Engineering MSE major
CON	541	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Construction Engineering or Construction Management student; Credit is allowed for only CON 441 or CON 541 or CEE 494/CON 494 (Public Works Capital Construction) or CEE 598/CON 598 (Public Works Capital Construction)
CON	545	Construction Project Mgmt	Theory and practice of construction project management. Roles of designer, owner, general contractor, and construction manager.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction or Construction Engineering graduate student

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CON	548	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Civil, Environmental & Sustainable Engineering or Construction Engineering or Construction Management graduate student; Credit is allowed for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustain in Constrn)
CON	551	Alternative Proj Delivery Meth	Design/construction interaction; conceptual estimation and scheduling; the RFQ/RFP process; legal, insurance, risk allocation issues; procurement and selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 451 or CON 494 (Alt Project Delivery Mthds) or CON 551
CON	554	Trenchless Construction Methods	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues, and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods, and materials required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Engineering OR Construction Management graduate student
CON	557	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 457 or CON 494 (Prin Lead & Management) or CON 557 or CON 598 (Prin Lead and Mgmt)
CON	565	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing, and efficient practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only CON 465 or CON 565
CON	567	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 467, 567 or 494 (Advanced Procurement Systems)
CON	570	Intro to Adv Tech Facilities	Introduces advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. The constructor's viewpoint, including: planning, structures, mechanical, and tool installation. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	571	Const Adv Tech Facilities	Construction issues for advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. Issues include scheduling, cost estimating, project management, mechanical, safety, commissioning and tool hookup. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 570 with C or better
CON	575	Info Technology in Constructn	Uses virtual construction methodologies to improve the construction enterprise using communications, facility modeling, and decision making. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	589	Construction Co Financ Control	Financial accounting and cost control at the company level in construction companies. Accounting systems. Construction project profit calculations. Financial analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Engineering MS, MSE or PHD student
CON	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CON	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Prerequisite(s): Construction Engineering OR Construction Management graduate student
CON	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	700	Research Methods	Course on research methods in a specific discipline.	N	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student
CON	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student
CPI	101	Introduction to Informatics	Concepts, tools, techniques, and applications of informatics. Includes overview of programming, data management, visualization, modeling, and social implications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	111	Game Development I	Introduces video game design, art theory, and concepts as they apply to video game development. Basic art principles used in game development. Covers the fundamental video game art principles of 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets. Also includes game design, game production, asset production, and game programming. Hands-on experience by creating 2-D game prototypes belonging to different video game genres and evaluating the techniques.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	200	Math Foundation of Informatics	Practical introduction to the mathematics necessary for studies in informatics. Topics include discrete math, analytic geometry, calculus, and linear algebra.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	MA	Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 243 with C or better OR Visiting University Student
CPI	211	Game Development II	Introduces the basics of 3D game development by using a game engine. Focuses on the pipeline of 3D game development including environment and contents creation, scripting to control components, and graphics user interfaces development. Develops several 3D games for multi platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 111 with C or better OR Visiting University Student
CPI	220	App Data Struct and Algorithms	Thorough grounding in applied knowledge and skills related to algorithms and data structures used in the development of software designed to solve complex problems. Overview of computational and critical thinking skills that can be called upon to analyze and solve complex problems in multiple domains.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	221	Advan Obj Orient Prin w/Java	Advanced object-oriented programming using the Java language. Design concepts and problem solving.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 220 with C or better

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CPI	310	Web Information Mgt System	Relational database design, entity-relationship modeling, relational algebra, SQL, database access through Web, Web data management, introduction to XML, fundamentals of Web application development, Web server architectures, lecture, in-class lab activities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	311	Game Engine Development	State-of-the-art techniques for computer game design and programming with an emphasis on 3-D graphics and interaction. Focuses on a practical, example-driven approach to learning the unique art of 3-D game development. Topics include graphics game engines, textures, shader programming, artificial intelligence, physics, modeling, sound effects, and techniques for user interfaces.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better OR Visiting University Student
CPI	321	Fundamentals of Game Art	Introduces art theory and concepts as they apply to video game development. Covers 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	350	Eval of Informatics Systems	Methods for evaluation of informatics systems, including design of computational and human experiments, ethnography, and analytic techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): GIS 270, GIS 470, IEE 380, STP 226, STP 231, or STP 420 with C or better OR Visiting University Student
CPI	360	Decision Making & Problem Solv	Practical use of database systems, computer graphics, and modeling to inform decision making.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		
CPI	411	Graphics for Games	Examines real-time rendering of high-quality interactive graphics. Studies advances in graphics hardware and algorithms that make this possible. Examples of techniques and topics include nonphotorealistic rendering, occlusion culling, level of detail, terrain rendering, shadow generation, image-based rendering, and physical simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	421	3-D Modeling and Texturing	Provides working knowledge of 3-D modeling, texture mapping, and paint concepts for the creation of 3-D video games art assets. Students work on concepts such as 3-D lighting, high polygon mesh rendering, and various third-party software and how to integrate them into the asset production pipeline.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better OR Visiting University Student
CPI	441	Gaming Capstone	Industry-oriented course emphasizing the video game development process, technical skills, teamwork and communication among the students enrolled in the gaming certificate. Students partner with local industry involved in game development, visual art, and educational gaming and solve real-world problems by working in a team comprised of students from the three tracks available within the certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): BS Informatics or BIS (Computer Gaming) or Computer Gaming certificate; senior standing
CPI	460	Intelligent Interact Inst Sys	Intelligent interactive instructional systems serve as tutors, as learning companions or both. Covers their design, the technology that powers them, the learning theories that motivate them and results from experimental evaluations. Emphasizes intelligent tutoring systems, as they are a more mature technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CPI 460 or CSE 494 (Intelligent Instr Sys)
CPI	462	Dsgn for Lrning in Virtual Wrld	Focuses on issues of design for learning in virtual worlds by exploring: the history and evolution of virtual worlds, the theories behind the use of virtual worlds for learning, the design of curricula in virtual worlds, design guidelines for elements experienced in virtual worlds to support learning, design guidelines for learning quests and activities in virtual worlds. Also introduces virtual world building using Unity 3D.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 221, CSE 220, or CSE 240 with C or better; Credit is allowed for only CPI 494 (Design for Learning in Virtual Worlds) or CSE 494 (Design for Learning in Virtual Worlds) or CPI 462
CPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-12		
CPI	485	Informatics Capstone I	Team-based design of an informatics system; working with clients; development of requirements, use cases, class/object diagrams, and plans for quality assurance and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	L	Prerequisite(s): Informatics BS major; CPI 350 with C or better; CSE 463 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CPI 485 or CSE 423 or CSE 485
CPI	486	Informatics Capstone II	Implementation of the informatics system designed during CPI 485; work processes; keeping designs consistent with implementations; conducting QA and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	4	L	Prerequisite(s): Informatics BS major; CPI 485 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CPI 486 or CSE 423 or CSE 486

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CPI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6		Prerequisite(s): Barrett Honors student
CPI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		
CPI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-3		
CPI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	101	Cross Sector Leadership	Prepares NGSC track members for success in their four-year journey while also sparking opportunities to develop as a leader throughout their Sun Devil careers. Provides a baseline for ethical decision making which is the cornerstone of effective leadership. This is accomplished through the lens of the public, private and nonprofit sectors. Also explores complex challenges we face and examples of successful cross-sector collaboration that have led to sustainable solutions. Additionally, students develop teamwork, time management, professionalism and respect for fellow NGSC team members.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1		Credit is allowed for only CPP 101 or CPP 194 (Next Generation Service Corps) or CPP 194 (Foundations of Cross Sector Leadership) OR Visiting University Student
CPP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	201	NGSC Community Impact Lab	Behind every challenge is an opportunity to innovate. Course offers hands-on, service learning opportunities for students within the ASU Public Service Academy--Next Generation Service Corp (NGSC). Using a problem-solving method called human-centered design, student teams work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization that is based in research and empathy for the organization and their stakeholders. Beyond learning and applying the design thinking process, students also develop skills in team management, conflict management and reflection.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	2		Prerequisite(s): CPP 101; Credit is allowed for only CPP 201 or CPP 294 (NGSC Community Impact Lab) OR Visiting University Student
CPP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	301	Cross-Sector Collaboration	Examines how public, private and nonprofit organizations seek to address social challenges and explores how the three sectors work together and in isolation to tackle social problems. Students learn about the motivation of employees in the public, private and nonprofit sectors and the ways in which organizational structure, environment and legal contexts differently constrain or facilitate action within and across these organizations. Explores effective strategies for collaboration among the public, private and nonprofit sectors and identifies organizational similarities and points of contrast that could enhance or create barriers to such collaboration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 101; Pre- or corequisite(s): Public Service Academy student; minimum 45 hours; Credit is allowed for only CPP 301 or CPP 294 (Cross-Sector Collaboration)
CPP	350	Community Works	In the first part of the course, students apply the five concepts of interpersonal empathy while completing a 30-hour service project. After completing the service project, students apply the two concepts of social empathy to a social issue in their community. At the conclusion of the course, students know how interpersonal and social empathy can be developed as a skill to help their community within their public service career.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 350 or CPP 494 (Community Works) OR Visiting University Student
CPP	353	Community Impact Lab	Offers hands-on, service learning opportunities for upper-division students from the College of Public Service and Community Solutions. Using a problem-solving method called design thinking, student teams have the opportunity to work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 353 or CPP 494 (Community Impact Lab)

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CPP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student
CPP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-4		
CPP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
CPP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		
CPP	510	Hazards Governance	Examines how hazards are managed by both community- and national-level policymaking and administrative systems, with a particular focus on understanding how policies and management practices are related to risk reduction and resilience capacity promotion. Explores what governance means in practice and presents existing research, including policy reports, cases studies and quantitative analyses of community-level and national-level hazards management programs and related public policies--and how their integration is relevant to hazards governance. Emphasizes understanding the nature of public goods production processes, including how inter-sector integration (i.e. between, public, private and nonprofit organizations) and extant community vulnerability profiles matter to the specific risk reduction efforts, and what those same efforts yield in terms of aggregate community resilience outcomes.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 510 or CPP 591 (Hazards Governance)
CPP	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511
CPP	512	Exercises for EMHS	Comprehensively explains the processes of emergency planning exercises in the domains of natural and technological hazards and homeland security, as well as other related domains such as public health or emergency medical services. Explores processes of emergency exercises within the Homeland Security Exercise & Evaluation Program (HSEEP) context and its standard guidelines that shape appropriate exercise practices.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	513	Pub Priv Partnerships for EMHS	Focuses on how public private partnerships (P3s) offer alternative mechanisms for supporting community emergency preparedness efforts, hazard and risk management practices, and community resilience promotion. The traditional form of a P3 model is typically a build-operate-maintain arrangement (with various permutations of those element combinations) around physical infrastructure. However, more complex public-private relationships related to emergency and disaster management issues, public health issues and other social welfare concerns have emerged over the past several decades. Investigating how these arrangements might affect emergency management, homeland security and the management of hazards and risk in general is critical to understanding how public sector operations are likely to function in the future in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	514	Intersector Coord for EMHS	Examines the nature of intersector and interagency coordination and collaboration efforts in the domain of emergency management and homeland security. Three core substantive area of focus: (1) covers the nature of inter-sector, inter-agency coordination and collaboration activities as a chief feature of the general emergency management function any community must address; (2) focuses on issues related to the required interaction between the local, county, state and federal government emergency management functions and the private sector; (3) focuses on the functional roles and the specific types of contributions made by public, private and nonprofit sector organizations in community preparedness for emergencies and disasters.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	520	Program Evaluation for EMHS	Examines core concepts and techniques of program evaluation and policy analysis and applies them to specific challenges in the domains of emergency management and homeland security. Develops knowledge and expertise in the practice of evaluating public sector programs, policies and other agency actions related to hazards issues--both natural and human-made. Develops students' knowledge, skill and ability in identifying appropriate research designs for particular evaluation and policy analysis problems; in managing data and focusing reports based on project objectives; and in appropriately characterizing and presenting empirical those data gathered for program evaluation and policy research projects. Provides an opportunity to learn about conducting evaluation and policy research in a way that is relevant to solving policy and management challenges germane to emergency management and homeland security agencies.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CRJ 511; Credit is allowed for only CPP 520 or CPP 591 (Program Evaluation in EMHS)
CPP	521	Finance & Management for EMHS	Focuses on the related topics of how state and local governments utilize use budgeting and financing techniques in the emergency services domain as well as how emergency/disaster services projects are managed. Specifically, the first part of the course covers budgeting and finance mechanisms and processes in the public sector generally and how those mechanisms and processes relate to emergency response, general hazards management and disaster recovery. The second part of the course covers core principles of project management and then applies those principles to process related to grant application and grant award management in the areas of preparedness, hazard mitigation and disaster recovery.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	523	Found Prog Eval I: Mult Reg	Regression serves as the foundation for modern quantitative program evaluation techniques. Regression analysis is not a single thing--it is a powerful set of tools used to examine relationships in data and test hypotheses concerning the significance of these relationships. Regression can be used to analyze observational data, in which case it can be used to identify important correlations that help us predict when events will occur together. In the program evaluation context we are specifically interested in causal analysis, which allows us to determine whether a management practice, a nonprofit or government program, or a specific public policy has a positive impact. When certain conditions are met we can use regression analysis to estimate the impact of a policy or program. This course builds a foundational understanding of the mechanics of multiple regression, the proper interpretation of regression models, and the circumstances in which we can use regression results for causal reasoning.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	524	Found Prog Eval II: Res Design	Covers important concepts in research design and common quasi-experimental tools for causal analysis.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523
CPP	525	Found Prog Eval III: Adv Reg	Extends previous course by translating each specific form of the counterfactual--pre-post with comparisons, reflexive design, and the post-test only design--into specific regression models that leverage each counterfactual. Helps expand program evaluation toolkit by demonstrating how to estimate several common regression models that leverage unique data and counterfactual specifications and teaches how to estimate program effects using a given research design.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 524

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CPP	526	Found Data Sci I: Data Prog R	Data is an essential ingredient of any program evaluation or performance management system. Organizations that want to embrace an evidence-based approach to management need to develop processes for gathering data; linking multiple datasets; running analysis; and sharing results with stakeholders through reports, dashboards or Web applications. The ability to collect, organize and analyze data is a desirable skill set for professional knowledge workers, high-level management and evaluators. Introduces the R data programming language, an open source platform that has become an industry standard because of its flexibility and power.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	527	Found Data Sci II: Data Wrang	The data preparation cycle: gather, clean, tidy and wrangle the data to produce a custom research database.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 526
CPP	528	Found Data Sci III: Proj Mgt	The main tools and practices of managing large or complex data projects, typically involving teams. Students learn about project management tools used by open source software developers, useful tools for creating client reports, important considerations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 527
CPP	529	Community Analytics	Applies knowledge and tools from previous courses in program evaluation and data analytics in order to get practice building and analyzing custom research databases. Students are given a collection of raw data that needs to be linked together in order to conduct analysis, and guidance on how to implement a specific research question. Students merge the data, wrangle it into the proper format for analysis, apply the prescribed regression techniques, interpret results, and create a report with key findings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523; CPP 526
CPP	530	Ldrshp Innov Public Fire Svcs	Provides current and future fire service leaders with an understanding and the skills necessary to manage creativity and foster a culture of innovation in public fire and emergency services. The approach is to treat the fire officer as an entrepreneur who identifies ideas and opportunities, then builds a business case for innovation.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	540	Found Emergency Med Services	Examines the operational structure of emergency medical services in the United States, including the current organization, delivery and financing of these systems. Discusses strengths, weaknesses and future challenges of EMS with consideration for creating systems better integrated with the overall health care delivery system.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	550	Community Paramedicine: MIH	Explores mobile integrated health care and community paramedic programs and how health care professionals and community partners can work together to identify community health needs, foster partnerships and overcome hurdles in MIH/CP program development. Discusses examples of successful MIH/CP programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	560	Emerg Svcs Ops Analysis/Plng	Applies common data analysis tools and techniques appropriate to risk assessment, deployment analysis and performance measurement to evaluate an organization's abilities to respond to community risk.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	570	GIS for Hazards Analysis	Provides a basic level of familiarity with several aspects of geographic information science such as key geographic concepts and techniques related to the theory and application of geographic information systems (GIS). Covers topics such as data models, geographic coordinate system and map projections, data entry and editing, and various types of spatial analysis in both conceptual terms as well as practical application. Additionally, outlines a range of GIS-related activities in emergency management and homeland security. Exposes students to the current and potential roles of GIS in support of emergency management activities in each of the four stages of the emergency management cycle. Gives students a basic understanding of GIS and its possibilities along with the capabilities as they apply to emergency management and homeland security.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 570 or CPP 591 (GIS for Hazards Analysis)

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CPP	575	U.S. Cyber & Info Sec Policy	Prepares students to understand and manage human and technical resources within the increasingly important cyber and information security domains. As high-profile data breaches and cyberattacks--that result in physical losses, disruptions and disasters--impose greater risks and costs on our public and private sector--as well as military and intelligence--networks, the policy and management aspects of these challenges have come to the fore. Compounding the technical and operational challenges arising from the protection of operating systems, networking and systems administration, managers and Chief Technology/Risk/Security/Data/Information Officers face a multidimensional set of political risks, including how to effectively manage data content and evaluation, information veracity and information sharing and distribution.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	576	Info Assurance Principles	The aim of this course is to provide insights into on modern cyber security threats and defensive controls and explore effective computer security and risk management strategies, Information Assurance (IA) practices and techniques. The course provides a graduate level foundation in IA for a diverse audience, from middle level managers to executives with non-technical and technical backgrounds and from variety of government, commercial and non-for-profit organisations. This course will explore concepts such as layered defense mechanisms, using different technologies and multiples thereof (true defense in depth), threat/risk identification and mitigation and incident response techniques. It will enable executive level managers to properly understand the real world challenges faced by their Cyber Security teams today. It will also assist in developing the frameworks, policies and the evidence-based decisions required to allow teams to protect their environments efficiently and to understand the resulting costs and benefits.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	577	Cybersec & Crit Infra Protect	Critical Infrastructure (CI) refers to the diverse, complex, inter-dependent delivery and support systems as well as the distributed networks for all large-scale services that are essential to a nation. These services include emergency response, law enforcement databases, supervisory control and data acquisition (SCADA) systems, power control networks, military support services, financial applications and mobile communications. Some national services are provided directly by government, but most are provided by commercial organisations and groups such as Internet service providers, airlines and banks. Systems that operate in national critical infrastructure run everything from electricity power plants to gas pipelines, hospitals and highways.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	578	Cyber Defense	Designed to provide students with knowledge on how to defend organisations and their systems. It is designed to provide a deep understanding of cyber defense within organisations and the necessary skills to examine the operational aspects of cyberspace, information assurance and cybersecurity. The emphasis of this course is to provide a contextual link between the management and governance of an organisation and its rapidly evolving cybersecurity and cyber-defense requirements. This course also provides insight into cyber governance in the Defense context, focusing on the management and acquisition of mission-critical systems and ensuring that these systems are resilient to internal faults and external cyber disruptions.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	581	Bioterrorism & Health Intel	This course is for professionals involved in any aspect of bioterrorism preparedness and response, who wish to be intellectually challenged, to think outside the square, to gain insight into quantum changes in science which pose a biosecurity risk, to understand the different perspectives of sectors involved in response, and to gain new critical skills which can be applied in their professional practice.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	582	Infectious Disease Intel	This course aims to give you the skills to critically evaluate, analyse and interpret important information and issues in infectious diseases intelligence as it applies to human health.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student

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CPP	583	Hlth Aspcts Crises/Emerg/Dis	The aim of the course is to build learners' capacity to operate as public health professionals and managers within the context of local or international crises, emergencies and disasters. It will develop their knowledge of the healthcare aspects of these events, prepare them to assess and respond to such events from the perspective of healthcare services and providers, and assist them to develop the skills required to work within disaster and complex emergency settings.	N	LEC	Y	NSW	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		
CPP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	Watts College of Public Service & Community Solut	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	568	Group Intervention	Provides advanced MC or PhD students with supervisory experience serving as Group Leaders or Co-Leaders to students currently enrolled in the prerequisite course. Time dedicated to group leadership or supervision accumulates as "Direct Contact" or "Group Supervision" hours and fulfills the "maladaptive/intervention" requirements or may be applied as an elective for MC students and PhD students. Students are selected for enrollment in this course with required instructor or departmental approval.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; CED 567; Credit is allowed for only CPY 568 or CPY 691 (Group Intervention)
CPY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	622	Child Counseling-Play Therapy	The use of play and expressive arts in counseling. Major areas of focus include: theoretical orientations to play therapy and child counseling, foundations of counseling, practice of play therapy and child counseling skills, and assessment/treatment planning. Integrates play media such as guided imagery, puppets and dolls, art, creative dramatics, music and movement, games, and sand play. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of play counseling. Includes both directive and nondirective play counseling experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; Credit is allowed for only CPY 622 or CPY 691 (Child Counseling and Play Therapy)
CPY	623	Counseling At-Risk Youth	Examines the behaviors that place adolescents at risk for not achieving career goals and interventions to address these behaviors.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	635	Professional Development	A series of presentations designed to expose beginning doctoral students to the multidimensional facets and competencies for being a counseling psychologist.	N	SEM	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Counseling Psychology PhD student; Credit is allowed for only CPY 635 or CPY 691 (Professional Development)
CPY	644	Psychology of Careers	Advanced career counseling, including theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate OR undergraduate postbaccalaureate student
CPY	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CPY	650	Counseling Latinos	Survey course addressing mental health concerns and perspectives for individuals and families of Latino, Spanish-speaking origin.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	651	Personality Assessment	Training in the use of major objective personality instruments to assess psychological symptoms; emphasizes MMPI-2 and MCMI-III.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: CED 523

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CPY	652	Indiv Intel Assessment	Examines the nature of human intellectual/cognitive abilities, their standardized measurement, and related issues in interpretation and practice. Provides preliminary training and experience in the administration and interpretation of two of the most widely used tests in this area: the Wechsler Adult Intelligence Scale, 4th ed. & the Wechsler Intelligence Scale for Children, 5th ed. Introduces other instruments at a topical level. Emphasizes theoretical foundations, practice skills, cultural considerations and ethical issues in intellectual/cognitive assessment. Operates under the broad principles of a cooperative learning approach. By researching and presenting on key course concepts, students practice incorporating a scholarly and empirical basis into their clinical work to develop specialized expertise in clinical assessment. Class format includes instructor- and student-led didactics, discussion and practice labs.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 652 or CPY 691 (Individual Intellect Assessment)
CPY	653	Neuropsychology	Assumes students have knowledge of basic topics in physiological psychology and/or in brain and behavior-type courses. Concentrates on human neuropsychology; the main topics are related to functional brain organization and hemispheric specialization, with a particular emphasis on functional assessment. Includes several other topics related to late-breaking empirical developments in the field. Read and discuss articles and studies, employing a large variety of methodologies, ranging from the 1950s to the latest publications, with both normal and pathological subject populations. Much of the course is spent discussing brain assessment techniques to study cognitive function and dysfunction. Emphasizes commonly used approaches in the assessment and measurement of human behavior and how the human brain is responsible for cognition, language, memory, spatial processing, emotion and personality.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 653 or CPY 691 (Neuropsychology)
CPY	654	Biobases of Behavior	Fulfills the APA requirement for a three-semester-hour course devoted to the broad and general biological bases that underlie behavior, and surveys a variety of fundamental physiological principles. Designed for students enrolled in an APA-accredited professional psychology training program; it does not focus on application of physiological principles to psychological practice. Capitalizes on most students' prior familiarity with psychopathology to help enable acquisition of general information about important brain structures and functions. Includes information about basic nervous system-related biochemistry, cellular structure and physiology, and anatomy and physiology. Students participate in classroom problem solving activities during which an array of principles is covered based on reading assignments. Challenges students to consider the role of biological, evolutionary and genetic factors in the expression of an array of typical and atypical behavior.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 654 or CPY 691 (Biobases of Behavior)
CPY	660	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CPY	668	Grant Writing	Develops successful proposals for educational research projects. Students gain experience writing for federal agencies, reviewing, and being evaluated on grant proposals.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	670	Individual Differences	Focuses on definitions and assessment of ways humans vary on psychological constructs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671

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CPY	673	Trauma in Counseling	Addresses the impact of crisis, disasters, sexual assault and other trauma-causing events on individuals and communities, as well as the treatment of trauma-related disorders. Examines trauma through the impact on the brain regions, impact on memory, variations of emotional regulation and somatic responses. Also addresses operations of emergency management systems within clinical mental health agencies and in the community. Also gives attention to vicarious trauma and caring for the caregiver. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of working with trauma. Includes both directive and nondirective experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPY 673 or CPY 691 (Working with Trauma in Counseling)
CPY	674	Counseling Women	Explores women's development and its implications for counseling. Sexism in mental health, sex differences in diagnosis and psychopathology, and women's particular treatment needs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	675	Health and Wellness Counseling	Theory, research, and practice in health and wellness counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	676	Social Bases of Behavior	In-depth examination of contemporary research and theory in selected areas of social psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	677	Advanced Counseling	Advanced topics in counseling theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CPY	678	Supervision Theory	Models of therapist development and clinical supervision.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	679	History/Systems of Psychology	Examines the development and differentiation of the discipline of psychology from its origins in philosophy to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	694	Substance Use, Disorders	Develops knowledge and skills for conducting psychotherapeutic and educational interventions to address substance use disorders and associated concerns.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	701	Science/Practice Counsel Psych	Directed experiences involving the integration of theory, research, and practice in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	702	Research Methods in Counseling	Applies experimental and/or quasi-experimental methods to theory construction and treatment evaluation in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate

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CPY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CRD	100	Intro to Community Development	Focuses on communities and draws on an interdisciplinary lens to orient students to the foundations of community development. Presents a holistic approach to communities as complex systems with the goal of addressing ecological, economic, social, cultural and political dimensions that play a vital role in decision making. Provides effective tools with which to engage various stakeholders (e.g., government, private, nonprofit, community). Framed within the theoretical context of social justice and community well-being.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		Prerequisite(s): maximum 25 hours; Credit is allowed for only CRD 191, PRM 191 or TDM 191
CRD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	200	Foundations Community Devel	Focuses on development within the context of communities and draws on a holistic approach that encompasses social, economic and ecological dimensions of development. Orients students to municipal, state, national and international examples of development. Critical analyses of the application of development-related practices and policies implemented locally and internationally equip students with key assessment tools for complex systems. Presentations from key stakeholders grant students with first-hand information regarding issues, challenges and solutions that have been applied to various community development contexts.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100
CRD	210	Community Services&Professions	Introduces the system of public, nonprofit and private sector resources and services comprising contemporary communities. Organized into three modular units with emphasis on the delivery of services in the community sports, parks and recreation, tourism, and nonprofit professions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 200, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235

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CRD	300	Rsrch Methods & Applied Skills	Orients students to the main methodological approaches utilized within the practice and study of community development. Discussion on research design and data collection complements the concepts employed in quantitative and qualitative approaches to development. Presents computer software applications. The goal is not mastery of research methods, but ability to critically consume research outputs as well as to design research-related documents.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200
CRD	301	Sustainable Communities	Analyzes community as concept and as an organizing system for promoting sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 210, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	302	Inclusive Community Developmnt	Examines the characteristics of diverse populations across the lifespan to effectively develop inclusive community programs and services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Pre- or corequisite(s): CRD 210 or PRM 210 with C or better if completed OR Visiting University Student
CRD	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CRD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	400	Capstone: Ldrshp, App Skills	Integrates and synthesizes knowledge disseminated throughout the entire community development degree program. Students purposefully revisit applications and principles of community development as well as community engagement skills and research tools necessary in collaborating with various groups of stakeholders. Introduces and applies concepts of conduct and ethics to discussions of careers in community development. Students apply acquired knowledge through culminating groups projects and group presentations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200; CRD 300
CRD	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student
CRD	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CRD	403	Ldrshp & Prof Devlpmt	Examines leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s) with C or better: CRD 210, NLM 210, PRM 210, or TDM 210; CRD 301, CRD 302, NLM 301, PRM 301, or TDM 301; senior standing; min 2.50 GPA; Credit is allowed for only CRD 403 or NLM 403 or PRM 403 or TDM 403 OR Visiting University Student
CRD	435	Service Learning/Community Dev	Establishes a "hands-on" service learning application with a selected agency related to student's career interest. Entails strong examination of service-based learning literature, community development strategies and community engagement applied project.	N	REC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
CRD	471	Interprof Ed & Comm Hlth	Community-engaged service learning exposes students to community health and interprofessional education through the delivery of team-based services with vulnerable populations. Students build on their professional practice skills as they develop interprofessional competencies.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prereq(s): ENG 101, 105, or 107 w/ C or btr; min 15 hrs; Crdt for only CRD 471 or HCR 471 or CRD 494 (IntroEdu & ComHlth), CRD 598 (IntroEdu & ComHlth), HCR 494 (IntroEdu & ComHlth), or PRM 494 (IntroEdu & ComHlth) OR Visiting University Student

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CRD	472	Interprof Ed & Complex Hlth	Complex health community-based experiential learning with immersive "real-world" learning opportunities. Students dedicate hours at pre-approved placement sites serving a community; apply new (and advance prior) complex health knowledge and skills; benefit from an expanded scope of supervised practice experience while providing targeted complex health interventions that address health and health care disparity needs, improve care quality, and reduce care costs for individuals, families, communities, and/or populations with complex health needs. Students practice values and ethics, communication, roles and responsibilities, teams and teamwork, and leadership competencies essential for interprofessional collaborative practice and team-based care. Online and in-person collaborative learning includes: seminars, course readings, discussions, and reflection assignments to facilitate critical thinking and a deeper understanding of the delivery of complex health interprofessional team-based care in the community.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prereq(s) w/ C or btr: Hlth Care Coord mjr; HCR 210; HCR 220; HCR 230; OR CRD 471 or HCR 471; Crdt for only CRD472 or HCR472 or CRD494(Intrprf Ed&Cmplx Hlth) or HCR494(Intrprf Ed&Cmplx Hlth) or CRD598(Intrprf Ed&Cmplx Hlth) OR Visiting University Student
CRD	473	Interprof Ed & Com Sys Hlth	Community-engaged experiential learning integrates students into comprehensive systems health and interprofessional education through the creation of team-based community impact projects with vulnerable populations. Students refine their professional practice and leadership skills as they integrate interprofessional competencies.	N	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		Prerequisite(s) with C or better: Community Health, Health Care Coordination, or Integrative Health BS major; HCR 210; HCR 220; HCR 230 OR CRD 471, CRD 472, HCR 471, or HCR 472; Credit is allowed for only CRD 473 or HCR 473 OR Visiting University Student
CRD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours
CRD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
CRD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
CRD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
CRD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	502	Statistical and Data Analysis	Introduces descriptive and inferential methods used in community development, with an emphasis on nonprofit, tourism, and recreation sciences. Students gain experience using statistical software.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	530	Community Services Management	Examines and applies organizational behavior, leadership, human resources, development, planning, and risk management to profession.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	552	Critical Issues	Examines critical research issues in the leisure, recreation and tourism fields.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	555	Theoretical Persp in Comm Dev	Reviews theoretical and empirical literature in community development with an emphasis on nonprofit, tourism, and recreation sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
CRD	563	Advocacy in Rec Therapy	Explores trends and issues facing therapeutic recreation professionals and advocacy practices integral to therapeutic recreation service delivery. Investigates a variety of topics; community-engaged experiences facilitate the development of competencies needed to effectively lead therapeutic recreation programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 563 or PRM 440
CRD	569	Adv Tourism&Recreation Studies	Advanced study of tourism with an emphasis on relevant practices, theories, and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	570	Foundations of Community Dev	Compare and contrast leading theories of community development in the historical context of the United States.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CRD	571	Community Development Process	Develops an understanding of the overall process of pursuing intentional community change and builds education, mobilization, and facilitation skills for engaging in the community development process.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 572 or NLM 572
CRD	573	Local and Regional Development	Builds core knowledge and analytical skills for the methods and sustainable outcomes of local and regional environmental and economic development.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	574	Applied Research Skills	Develops skills in common qualitative and quantitative data collection and analysis methods used by community development practitioners.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	577	Community Building Practice	Builds core knowledge and analytical skills for the ethics and practice of building equitable communities, focusing on the development of self-efficacy, agency and solidarity.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		
CRD	596	Community Development Capstone	Capstone application of core values, knowledge and skills in an applied project. The final product is a deliverable to a community partner, and serves as a culminating experience for the Master of Professional Studies in Community Development Practice.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571; CRD 572; CRD 573; CRD 574
CRD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
CRD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CRD	610	Sustainable Communities	Analyzes community as concept and as an organizing system for promoting sustainability. Considers issues at different scales, ranging from urban to rural, local to global, historical to contemporary. Critically examines the role of public, private, and nonprofit institutions in promoting quality of life.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	620	Community Research Methods	Introduces community research methods, with emphasis on methodological questions and techniques relevant to contemporary community-based research.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	640	Seminar I	A seminar designed to explore issues related to advancing a career as a researcher in the fields associated with community resources and development (i.e., non-profit, recreation and parks, tourism). Critical to this study is an understanding of the conduct of high quality research, an understanding of issues that arise in professional settings (e.g., expediency vs. effectiveness), and ethical principles and processes that undergird research.	N		SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development

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CRD	650	Research Seminar II	Helps prepare doctoral students to become productive and successful social scientists in community resources and development. Covers a wide range of topics under the broader conceptual umbrella of research, teaching, and service.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development
CRD	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	100	Intro to Criminal Justice	History and current practice of the criminal justice system. Roles of law enforcement agencies, courts and correctional agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	
CRJ	201	Crime Control Policies	Dimensions and causes of crime. Criminal justice system responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	203	Courts and Sentencing	Structure and operation of criminal court system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	204	Juvenile Justice	History and development of the juvenile court and the juvenile justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	210	Intro to Crim Investigations	Studies the basic principles of criminal investigation including the analysis of investigative techniques, criminal patterns and modus operandi, interviewing and interrogation strategies, collection and management of evidence, surveillance, and crime scene investigation. Covers theories, philosophies and concepts related to suppression of crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	211	Documenting the Crime Scene	Practical approach to evidence identification; documentation of the location of evidence; crime scene sketching; and the collection and handling of evidence from the crime scene, to the crime laboratory, and to presentation in court. Includes lab exercises designed to reinforce important investigative skills.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	230	Introduction to Policing	History of police. Contemporary police work. Problems in policing.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	240	Introduction to Corrections	Structure and operation of corrections system.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	260	Intro Substantive Criminal Law	In-depth study of the historical development, foundational principles and public policy implications of criminal law, focusing on theories of criminal liability and the elements of select crimes against the person.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		
CRJ	270	Community Justice	Collaborative and evidence-based approach to reducing crime, incorporating offenders, victims, the community and criminal justice agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	
CRJ	284	Professional Growth in CJ	Targeted field practice with criminal justice agencies. Prerequisite for internship.	N	LEC	N	YGB	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better
CRJ	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		

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CRJ	300	Oral & Written Com for CCJ	Develops critical oral and written communication skills with emphasis on locating, analyzing, properly citing, and persuasively using primary and secondary sources in criminology and criminal justice.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better
CRJ	302	Research Methods	Validity and reliability of research designs and data collection.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; ENG 101, 105, or 107 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	303	Statistical Analysis	Fundamentals and application of descriptive and inferential statistics.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	CS	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	305	Gender, Crime & Criminal Justice	Women as offenders, victims and professionals in the criminal justice system.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	306	Race, Ethnicity, Crime	Minority issues in the criminal justice system.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	309	Criminology	Theoretical explanations for criminal behavior.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prereq(s) w/ C or better: Crim & Crim Just or Pub Serv & Pub Policy (Crim) major; CRJ 100; CRJ 201; min 56 hrs OR Psych (Forensic Psych) BA or BS major; Credit allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308) OR Visiting University Student
CRJ	315	Police Organization and Mgmt	Structure, processes and behavior of police organizations.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100, JUS 105, or JUS 305 with C or better; CRJ 230 with C or better
CRJ	317	Inside-Out Prison Excg Program	Pairs university students and correctional students inside a prison to examine the criminal justice system through a combination of theoretical knowledge and practical experience, paying special attention to race, gender, socioeconomic status, age, and ethnicity.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRJ 317 or CRJ 494 (Inside-Out Prison Exchange)
CRJ	321	Evidence: Imperatives of Proof	Problems and means of establishing identity and fact in relation to arrest, detention, adjudication, sentencing, and correctional case management.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	350	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		
CRJ	403	Victims and the Criminal Jus	Victimization theories. Nature and extent of victimization. Interactions among victims, the criminal justice system and society. Victim rights and services.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Crimnlgly & Crim Just mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimnlgly or Emer Mgt & Hmnd Sec or Law & Pol) mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	404	Juvenile Delinquency	Causes, correlations and strategies to reduce juvenile delinquency.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student

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CRJ	405	Neighborhoods and Crime	Variation in crime across neighborhoods from ecology of crime and urban sociology perspectives. Influence of social institutions on community crime patterns.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301 with C or better; PAF 302 with C or better
CRJ	406	Sex Crimes	Prevalence, nature and etiology of sex crimes. Response of criminal justice system to victims and perpetrators of sex crimes.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/C or btr: Crim&Crim Just BS: CRJ 302; CRJ 303 OR Lw&Hmn Bhv crt: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Psy(ForPsy)BA/BS: PSY 230; PSY 290 OR PubSer&PubPol(Crim, Emer Mgt&Hm Sec, or Lw&Pol)BS: PAF 301; PAF 302 OR Visiting University Student
CRJ	407	Police Use of Force	Explores the use of force options available to police officers. After analyzing the legal foundations of use of force, examines the community context. Also studies future technology and examines current research on the topic. Uses case studies to demonstrate the historical and current issues in police use of force.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s): w/ C or better: Crim & Crim Just mjr; CRJ 302; CRJ 303 OR Pub Serv & Pub Pol (Crimnlgy, Emerg Mgmt & Hmlnd Sec, or Law & Pol) mjr; PAF 301; PAF 302; Credit for only CRJ 407 or CRJ 494 (Police Use of Force or Force in Law Enfrmnt)
CRJ	408	Drugs and Crime	Patterns of illegal drug use. Problems, practices and policies associated with drugs, crime and drug policy.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	409	Police Accountability	Command and control systems. Managing police culture. Community policing and accountability to the community. Police training.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	410	Crim Proc I: Law of Investigat	In-depth exploration of U.S. Constitutional law governing criminal investigative procedures.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereqs w/min C: Crimnlgy&Crim Just BS, Law&Hmn Behav cert, Legal Issues cert; CRJ 302; CRJ 303 OR Law&Hmn Behav cert; PSY 230; PSY 290 OR Pub Serv&Pub Pol (Crimnlgy, Emer Mgt & Hmlnd Sec, or Law & Pol) BS; PAF 301; PAF 302 OR Visiting University Student
CRJ	411	Legal Issues in Corrections	Explores the constitutional and statutory law concerning prisoners in the United States. Places special emphasis on the First, Fourth, Fifth, Sixth, Eighth and Fourteenth Amendment rights of persons under the jurisdiction of correctional agencies, as well as their rights under relevant statutes and case law, including those affecting habeas corpus right.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Correctional Studies cert; CRJ 100 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302
CRJ	412	International Terrorism	Structural, organizational, political and legal characteristics of international terrorism.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereqs w/C or better: Crimnlgy & Crim Just major; CRJ 302; CRJ 303 OR Publ Serv & Publ Pol (Crimnlgy or Emer Mgt & Homeland Sec or Law & Pol) major; PAF 301; PAF 302; Credit allowed for CRJ 412 or CRJ 494 (Intl Terrorism) OR Visiting University Student

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CRJ	414	Advanced Criminological Theory	Critical assessment of criminological thought using original readings.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology & Crim Jus major; CRJ 302 w/ C or better; CRJ 303 with a C or better OR Law & Humn Behavr Cert Students: CRJ 100 with a C or better; min junior standing; Credit is allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308)
CRJ	416	Crim Procedure II:Adjudication	In-depth study of the constitutional rights attendant to the processing and adjudication of criminal cases in court, from initial court appearances through appeals and collateral attacks.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 203; CRJ 410 OR Visiting University Student
CRJ	417	Cyber Terrorism	Terrorism perpetuated online. Terrorism and technology.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	419	Domestic Terrorism	Evolution of domestic terrorism in the United States. History and future of domestic security. Public policy responses. Internal and external political implications.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	422	Violence in America	Theories, patterns, prevention and policy responses to violence in the United States. Varieties of violence including domestic, gang-related, hate crimes, school violence and sex crimes.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	423	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
CRJ	425	Life-Course Criminology	Theories, methods and controversies of the life-course perspective as it applies to crime.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or btr: Crim&Crim Just BS mjr; min jr standing; CRJ 302; CRJ 303 OR Juvenile Just or Law & Human Behavior cert stud; min jr standing; CRJ 100; Credit is allowed for only CRJ 425 or CRJ 494 (Life-Course Crim) OR Visiting University Student
CRJ	427	Crime and Media	Examines the relationships among crime and discourse, media representations of crime and criminals, and the structural deficiencies in society that perpetuate relations of domination and oppression based on class, race, gender and sexuality.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 427 or CRJ 427 or COM 494 (Crime, Communication and Media) or CMN 598 (Crime, Communication and Media) OR Visiting University Student
CRJ	433	Death Investigations	Medico-legal investigation of death via postmortem examinations. Identification, thanatology, thanato-etiology of unexpected natural deaths, accidental deaths, suicides and homicides. Forensic examination of living people following sexual assault, traffic offenses, child abuse and drug crimes.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301; PAF 302

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CRJ	434	Drugs of Abuse	Pharmacological and toxicological characteristics of commonly abused drugs such as alcohol, barbiturates, amphetamines, narcotics, stimulants and hallucinogens. Forensic toxicology. Acute and long-term effects of drug abuse.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s): w/ min C: Crmnlg & Crim Just mjr: CRJ 302; CRJ 303 OR Lw & Hman Bhvior crt: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pblc Serv & Pblc Pol (Crmnlg or Emerg Mgt & Hmnd Sec or Lw & Pol) mjr: PAF 301; PAF 302 OR Visiting University Student
CRJ	435	Crime & Forensic Mental Health	Clinical assessment of people under court jurisdiction. Topics include psychological paradigms, nomenclature of mental disorders, forensic clinical assessment, mental disorders and crime, legal standards governing mentally disordered criminal offenders.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	SB	Prereq(s) w/C or better: Crmnlg&Crim Just BS: CRJ 302; CRJ 303 OR Law&Hmn Behv cert: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Psych (Forens Psych) BA/BS: PSY 230; PSY 290 OR Pub Serv&Pub Pol (Crimnlg, Emer Mgt&Hmnd Sec, or Law&Pol) BS: PAF 301; PAF 302
CRJ	443	Community Corrections	Probation and parole. Types of community corrections programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law and Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	444	Institutional Corrections	Provides an overview of secure correctional facilities in the U.S. with a focus on prisons and jails.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology or Emergency Management and Homeland Security or Law and Policy) BS major; PAF 301; PAF 302
CRJ	445	Engaging Correctional Pops	Provides an overview to risk and needs assessment with correctional populations, with a particular focus on introducing tools to engage with and rehabilitate individuals.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	450	Crime Analysis	Tactical, strategic and administrative aspects of crime analysis and crime mapping as practiced in everyday policing. Environmental criminology.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	455	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism, and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 455 or CRJ 555 or CRJ 494 (Police and Int'l Terrorism-Israel)
CRJ	456	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 456 or CRJ 556 or CRJ 494 (Etiology of Martyrdom)
CRJ	460	Adv Substantive Criminal Law	In-depth study of the historical development, foundational principles, and public policy implications of criminal law focusing on parties to crime, inchoate liability, select crimes against the person; crimes against property, public order and the state; and defenses to crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 260 OR Visiting University Student
CRJ	461	Domestic Violence	Legal, historical, theoretical, and treatment aspects of domestic violence, including child abuse, woman battering, incest, and marital rape.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student

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CRJ	462	Gangs	History and development of gangs. Criminal justice system responses. Nature of gangs and gang members.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	463	White Collar Crime	Business, professional and official lawbreaking including consumer fraud, securities violations, unethical behavior and political corruption.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	464	Organized Crime	Nature and history of organized crime. Theories of containment. Criminal justice agency responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	470	Discretionary Justice	Use and abuse of discretion in the criminal justice system. Theoretical and empirical links between discretion and discrimination based on race, ethnicity and gender.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3	L or SB	Prerequisite(s) w/ C or better: Criminology & Crim Just major; CRJ 302; CRJ 303; ENG 101, 105, 107 OR Public Serv & Pub Policy (Criminology, Emerg Mgmt & Homeland Sec or Law & Pol) major; ENG 101, 105, 107; PAF 301; PAF 302 OR Visiting University Student
CRJ	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
CRJ	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): minimum 45 hours
CRJ	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-6		Prerequisite(s) with C or better: Barrett Honors stdnt; Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Barrett Honors stdnt; Public Serv & Public Policy (Criminology, Emergncy Mgt & Homeland Sec, or Law & Policy) BS major; PAF 301; PAF 302
CRJ	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-6	L	Prereq(s) w/ C or btr: Barrett Hons stdnt; Crimlgy&Crim Just BS mjr; ENG 101, 105, or 107; CRJ 302; CRJ 303 OR Barrett Hons stdnt; Pub Serv&Pub Policy (Criminlgy, Emergncy Mgt&Homeland Sec, or Law & Policy) BS mjr; ENG 101, 105, or 107; PAF 301; PAF 302
CRJ	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		Prerqs w/ C or better: Crim & Crim Just BS mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimlgy, Emergncy Mgt & Homeland Sec, or Law & Pol) BS mjr; PAF 301; PAF 302 OR Visiting University Student

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CRJ	496	Directed Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to contribute to a specific project such as a report or publication. Tasks may include data collection and coding, data analysis, literature reviews and producing research reports. Neither a substitute for a catalog course nor a means of taking a catalog course on an individual basis. Requires application well in advance of regular registration with the student's advisor, the advisor's signature, and approval by both the faculty member with whom the student will work and the director of the school offering the course.	N	RSC	Y	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-3		Prerequisite(s) with C or better: Criminology & Criminal Justice BS major; CRJ 302; minimum junior standing OR Public Service & Public Policy (Criminology, Emergency Mgmt & Homeland Security, or Law & Policy) BS major; PAF 302; minimum junior standing
CRJ	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-3		Prerequisite(s): minimum 45 hours
CRJ	501	Seminar in Criminal Justice	Overview of the American criminal justice system, with emphasis on policy issues in police, courts, sentencing, corrections.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	502	Seminar in Criminology	Theory and research on the nature, causes, and prediction of criminal careers and events.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA major OR Criminology and Criminal Justice MS or PhD major OR Forensic Psychology MS OR Law and Psychology PhD major
CRJ	503	Research Methods	Introduces data analysis; overview of research methods used in social science research, including experimental design, survey research, field research, and evaluation research.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	504	Statistical Tools/Criminal Jus	Focuses on essential statistical analysis that can be used in criminal justice and related agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	505	Thry & Prac Criminal Justice	Capstone course for School of Criminology and Criminal Justice master's students. Students complete a project that requires the application of knowledge from program coursework.	N	RSC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student; CRJ 501; CRJ 502; CRJ 510; CRJ 511
CRJ	506	Seminar in Crime Analysis	Examines theory and practice of crime analysis in the field of criminal justice. Focuses on data collection, management and dissemination methods; related technology and software; and analytical techniques to examine crime trends, the spatial distribution of crime, and temporal trends in crime for the purpose of understanding and responding to crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	507	Social Network Analysis	Examines the theory and practice of social network analysis in the field of criminal justice. Focuses on the major theoretical assumptions of social network analysis, how to collect social network data, how to use social network analysis software, and how to analyze and interpret social network data for the purpose of understanding and responding to crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	508	Adv Seminar in Crime Analysis	Examines advanced topics in the practice of crime analysis in the field of criminal justice. Students learn the terminology, principles and techniques crime analysts use in everyday practice. Provides an exploration of the various approaches to analyzing and reducing crime as well as the theories that inform those approaches. Examines situational analysis and its approach to managing the occurrence of crime; also explores crime prevention through community-based approaches to crime prevention.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 506

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CRJ	509	Data Management	Core concepts and practices used for the organization and management of data.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student; CRJ 511
CRJ	510	CJ Planning&Program Evaluation	Examines the application of alternative models of strategic planning to the criminal justice system. Covers methods of evaluating criminal justice policies and practices.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	511	Applied Data Analysis in Crim	Examines a variety of tools used in the analysis of criminal justice data, including GIS mapping.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Emergency Management and Homeland Security MA student (all concentrations) OR Law and Psychology PhD student
CRJ	512	Seminar in Policing	Graduate-level review of policing and police organizations. Seminar examines research on police strategies and practices designed to address crime.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	513	Seminar in Courts & Sentencing	Overview of the nature, proposed principles, and theoretical doctrine of the courts and sentencing policies in criminal justice.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	514	Seminar in Corrections	Theory, research, and policy issues regarding community-based and institutional correction programs.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	515	Seminar in Women and Crime	Introduces students to issues regarding women and the criminal justice system, focusing on their roles as offenders, victims and professionals.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	516	Seminar in Crim Jus Org & Mgmt	How external and internal variables shape criminal justice systems' organizational behaviors. Emphasizes strategic hiring, professional socialization, effective leadership, progressive discipline, interagency collaboration and organizational change.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	517	Juvenile Delinquency & Justice	Examines patterns and correlates of delinquency within the context of theories of delinquency. Reviews the response of the juvenile justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	518	Race/Ethnicity,Crime & Justice	Theoretical perspectives and research on the overrepresentation of racial minorities as victims, offenders, and defendants in the criminal justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	519	Seminar on Victimization	Examines theory and research concerning victimization and consequences for victims, society, and the justice system. Also examines effective responses to victims' post-crime needs.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	520	Seminar on Violent Crime	Examines patterns and correlates of violent crime, as well as prevention strategies and policy implications.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	521	Topics in Psych Criminology	Topical courses relating to the intersection of various specializations in psychology with criminology and criminal justice.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student

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CRJ	522	Seminar on Gangs and Crime	Theoretical perspectives and research on gangs and crime, and on the role of the community and the criminal justice system in causes and control.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	523	Seminar in Network Criminology	Explores the theoretical foundations for applying the concepts and methods of network science to problems in criminology and criminal justice.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, Forensic Psychology MS or Law and Psychology PhD student
CRJ	524	Theories of Punishment	Examines the fundamental philosophical principles of justice and punishment. Includes a comparative and historical perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	525	Life-Course Criminology	Provides an intensive examination of life-course explanations of crime, the life-course perspective and a theoretical orientation, and research methods used in life-course research.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	527	Police Accountability	Examines the great authority of police, the various and most common ways that police abuse that authority, the consequences of those abuses, and accountability mechanisms that can prevent those abuses from occurring.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	529	Community Corrections	Provides a review of theory, research and policy focusing primarily on correctional strategies and programs that take place within the community setting, as well as the function of community corrections within the larger correctional system. Gives particular attention to the purpose and goals of community-based corrections; the historical development of probation and parole practices; and contemporary community corrections programs and strategies such as evidence-based practices, risk assessment, offender reentry, sex offender management, diversion, restitution, community service programs and other emerging alternatives to traditional incarceration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	530	Seminar in Forensics	Explores recent and sometimes controversial developments in forensic science. Includes topics such as quality assurance, the CSI effect and the National Academy of Sciences' report entitled "Strengthening Forensic Science in the United States: A Path Forward."	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	531	Crime Mapping	Examines the applied research methodology and conceptual framework used to conduct spatial analysis within the crime analysis profession.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	532	Sex Crimes	Not only discusses the distinctions among types of offenders, but also applies theory, analyzes public policy, examines the effect of sex offenses on victims, and discusses how we've legislated sexual behavior over human history.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	533	Seminar in White Collar Crime	Provides a general overview of white collar crimes including forms, contexts and response by the criminal justice system toward offenders and victims. Also addresses theoretical perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student; Credit is allowed for only CRJ 533 or CRJ 598 (Seminar in White-Collar Crime)
CRJ	535	Crime & Forensic Mental Health	This interdisciplinary course, which draws from the fields of criminology, psychology, sociology and law, focuses on the clinical assessment of people under the jurisdiction of a court of law.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student; Credit is allowed for only CRJ 535 or CRJ 598 (Crime and Forensic Mental Health)
CRJ	537	Criminal Procedure	Explores the criminal procedures mandated by the U.S. Constitution as applied to criminal investigations with emphases on pretrial rights under the Fourth, Fifth and Sixth Amendments.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Science PSM student OR Law and Psychology PhD student

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CRJ	538	Criminal Law & Social Control	Examines practical, legal and constitutional limitations of criminal laws and procedures as means of securing social order. Focuses on the formal social control of justice system actors and the limits placed on government when seeking to control crime.	N		SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	539	Criminal Justice, Law & Society	Topical courses relating to the intersection of law with criminology, criminal justice, public policy and the social sciences.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	540	Qualitative Methods	Provides students with an examination of the design, execution, and write-up of qualitative research. Discusses methods of data collection, including participant-observation, ethnography, and interviewing.	N		SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	553	Terrorism/Weapons of Mass Des	Historical evolution of terrorism and weapons of mass destruction. Analyzes current theories and mitigation, preparedness, and response tactics.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Emergency Management and Homeland Security MA student (all concentrations) OR Law and Psychology PhD student
CRJ	554	Homeland Security	Presents skills necessary to develop policies, strategies, programs, and organizational structure of an all hazards/all risk homeland security program.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student (all concentrations) OR Law & Psychology PhD student; Credit is allowed for only CRJ 554 or PAF 461
CRJ	555	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 445 or CRJ 555 or CRJ 598 (Police and Int'l Terrorism-Israel)
CRJ	556	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law & Psychology PhD student
CRJ	557	Seminar in Domestic Terrorism	Develops a foundation of theoretical approaches to understanding domestic terrorism in the United States of America.	N		SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law & Psychology PhD student; Credit is allowed for only CRJ 557 or CRJ 598 (Seminar in Domestic Terrorism)
CRJ	558	International Terrorism	Reviews the various definitions of terrorism and how to apply these to terrorism issues and instances globally.	N		SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law and Psychology PhD student; Credit is allowed for only CRJ 558 or CRJ 598 (International Terrorism)
CRJ	560	Topics in Research Methods	In-depth exploration of either a specific social scientific research method or a narrow range of related methods relevant to criminological and criminal justice research.	Y		LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, Forensic Science PSM, or Law and Psychology PhD student
CRJ	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student

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CRJ	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-4		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	601	Seminar, Criminological Theory	Examines historical and contemporary criminological theories.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	602	Seminar, CJ Policy & Practice	Analyzes responses to crime and the operation of criminal justice system, with emphasis on theory and research on effectiveness of policies and practices of the system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	604	Regression Models	With SWG 643, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student or Law and Society PhD student
CRJ	605	Quantitative Methods	Explores advanced techniques of statistical analysis within the field of criminal justice.	N	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	606	Adv Topics-Theoretical Crimin	Focuses on criminological theory construction, historical and contemporary theoretical debates within criminology, theory testing, empirical support for theories, and theoretical integration.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	614	Professional Dev Workshop I	A structured series of four workshop sessions to help doctoral students adjust to graduate school and begin to chart a path toward success as a scholar and colleague.	N	LEC	N	YGB	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	615	Professional Dev Workshop II	A structured series of four workshop sessions to help doctoral students develop teaching skills.	N	LEC	N	YGB	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	616	Professional Dev Workshop III	A structured series of four workshop sessions to help doctoral students navigate the academic job market.	N	LEC	N	YGB	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-15		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student

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CRJ	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Watts College of Public Service & Community Solutions	School of Criminology and Criminal Justice	1-15		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CSE	100	Prin of Programming with C++	Principles of problem solving using C++, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	110	Principles of Programming	Concepts of problem solving using an object-oriented programming language, algorithm design, structured programming, fundamental algorithms and techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): degree-seeking student; minimum 12 hours; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
CSE	180	Computer Literacy	Students gain fluency in integrating technology to efficiently and effectively solve problems using computational thinking.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
CSE	205	Object-Oriented Program & Data	Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	Prerequisite(s): CSE 110 with C or better OR Data Science, Analytics and Engineering PhD, Industrial Engineering MS, or Industrial Engineering PhD student; Credit is allowed for only ACO 102 or CSE 205 OR Visiting University Student
CSE	220	Programming for Computer Engr	Introduction to C/C++, systems programming, and concurrency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CSE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs: degree-seeking stdnt w/min C; CSE 100/110; CSE 120/EEE 120 OR Sftwr Engr or Engr Mgt maj w/min C; CSE 110; SER 232 OR Elec Engr maj; CSE 100/110; CSE 120/EEE 120 OR Cmp Sci & Engr grad; Credit for CSE 230/EEE 230 OR Visiting University Student
CSE	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240 OR Visiting University Student
CSE	259	Logic in Computer Science	Logic has been called the calculus of computer science. The argument is that logic plays a fundamental role in computer science, similar to that played by calculus in physical sciences and other engineering disciplines. Indeed, logic plays an important role in computer architecture (Boolean logic, digital gates, hardware verification); software engineering (specification, verification); programming languages (semantics, type theory, logic programming); databases (relational algebra, database query language); artificial intelligence (automated theorem proving, knowledge representation); algorithms and theory of computation (complexity, computability, expressiveness). This course is a mathematically solid introduction to propositional logic, first order logic, logic programming, and their applications in computer science.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CSE 259 or CSE 294 (Logic in Computer Science) OR Visiting University Student
CSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		

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CSE	301	Computing Ethics	Ethics for computing majors: history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 205 with C or better; FSE 100 with C or better OR Informatics BS major; CPI 101 with C or better; CSE 205 with C or better OR Visiting University Student
CSE	310	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/min C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cult(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
CSE	320	Design/Syn Digital Hardware	Design and synthesis of digital hardware with hardware description language, computer-aided design tools, and programmable devices.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 220 or 240 with C or better; CSE 230 or EEE 230 with C or better OR Visiting University Student
CSE	325	Embedded Microprocessor System	System-level programming and analysis of embedded microprocessors systems. Fundamental concepts of digital system design for embedded system applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 220 or CSE 240 with C or better; CSE 230 or EEE 230 with C or better OR Visiting University Student
CSE	330	Operating Systems	Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, and file systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better OR CSE graduate student; Credit is allowed for only ACO 350 or CSE 330 OR Visiting University Student
CSE	335	Princ of Mobile App Dev	Covers topics pertaining to fundamental concepts of mobile application development principles including design patterns; data persistence; interfacing with services and devices; location and incorporation of existing frameworks; user interface and experience; context awareness; utilization of built-in tools for software profiling, testing, and version control; and security/privacy issues.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Informatics BS or Computer Systems Engineering BSE major; CSE 220 or 240 with C or better; Credit is allowed for only BMI 310 or CSE 335 OR Visiting University Student
CSE	340	Principles of Programming Lang	Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineer BSE or Computer Science BS major; CSE 310 with C or better; CSE 230 or EEE 230 with C or better OR CSE graduate student OR Visiting University Student
CSE	355	Intro Theoretical Computer Sci	Introduces formal language theory and automata, Turing machines, decidability/undecidability, recursive function theory, and complexity theory.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR CSE graduate student OR Visiting University Student
CSE	360	Intro to Software Engineering	Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Biomed Informat BS or Comp Sci BS or Dig Cult (Media Process) BA/BS or Geog Informat Sci BS or Comp Systems BSE or Engr Mgmt BSE major; CSE 220 or 240 w/ C or better OR Comp Sci or Software Engr grad stndt OR Visiting University Student
CSE	365	Information Assurance	Concepts of information assurance (IA); basic IA techniques, policies, risk management, administration, legal and ethics issues.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 240, CIS 235, CIS 236, CSE 220, or CSE 240 with C or better OR Visiting University Student
CSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		

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CSE	408	Multimedia Information Systems	Design, use, and applications of multimedia systems. Introduces acquisition, compression, storage, retrieval, and presentation of data from different media such as images, text, voice, and alphanumeric.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Software Engineering BS major; SER 222 with a C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	412	Database Management	Introduces DBMS concepts. Data models and languages. Relational database theory. Database security/integrity and concurrency.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s): Biomed Informs BS, Comp Syst Engr BSE mjr; CSE 310 w/ C or better OR Comp Sci & Engr or Software Engr grad stdnt; Credit is for only ACO 220 or ACO 320 or CSE 412 or IFT 300(or IFT 433) or SER 322 OR Visiting University Student
CSE	414	Advanced Database Concepts	Object-oriented data modeling, advanced relational features, JDBC and Web access to databases, XML and databases, object-oriented databases, and object-relational databases.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 412 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	420	Computer Architecture I	Computer architecture. Performance versus cost tradeoffs. Instruction set design. Basic processor implementation and pipelining.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better; Credit is allowed for only CSE 420 or CSE 520 OR Visiting University Student
CSE	423	Systems Capstone Project I	Development process: specification, design, implementation, evaluation, and testing with economic, social, and safety considerations. Technical communication and team skills enrichment.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prereq(s) w/ min C: Comp Sys Engr BSE major; CSE 301; CSE 320; CSE 325; CSE 330; CSE 360; ENG 101, 105 or 107; senior standing or postbacc student; Credit is allowed for only CPI 485, CPI 486, CSE 423, CSE 485 or CSE 486
CSE	424	Systems Capstone Project II	Continuation of capstone project started in CSE 423.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Systems Engineering BSE major; ENG 101, 105, or 107 with C or better; CSE 423 with C or better; senior standing or postbaccalaureate
CSE	434	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Sci BS or Comp Syst Engr BSE major; CSE 230 or EEE 230 w/ C or better; CSE 310 w/ C or better OR Computer Science & Engr or Software Engr graduate student; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
CSE	438	Embedded Systems Programming	Development of embedded system software, I/O handlers, and multiple threaded programs. Scheduling algorithms. Embedded software structures. Real-time operating system.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; ENG 101, 105, or 107 with C or better; CSE 325 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	440	Compiler Construction I	Introduces programming language implementation. Implementation strategies such as compilation, interpretation, and translation. Major compilation phases such as lexical analysis, semantic analysis, optimization, and code generation.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	445	Distributed Software Developmt	Distributed system architectures and design, service-oriented computing, and frameworks for development of distributed applications and software components.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 360 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student

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CSE	446	Software Integration and Engr	Software development using architecture design, composition, workflow, services, data resources, data representations, data management, and development tools.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre- or corequisite(s): Computer Science BS or Computer Systems Engr BSE major; CSE 445 with C or better if completed OR Computer Science and Engr or Software Engr grad student; Credit allowed for only CSE 446 or 598 (Software Integration & Engineering)
CSE	450	Design&Analysis of Algorithms	Design and analysis of computer algorithms using analytical and empirical methods; complexity measures, design methodologies, and survey of important algorithms.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Engineering graduate student; Credit is allowed for only CSE 450 or CSE 551 OR Visiting University Student
CSE	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stndt; Credit allowed for CSE 460/SER 460 OR Visiting University Student
CSE	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Cltr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grad st; Crdt only CSE 463 or SER 463 OR Visiting University Student
CSE	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/ C or better: Comp Sci or Comp Sys Engr mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stndt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsm&Tstng) or SER 464 OR Visiting University Student
CSE	466	Computer Systems Security	Countermeasures to attacks to computer systems from miscreants (or hackers) and basic topics of cryptography and network security.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s)w/ C or better: Computer Sci BS or Computer Sys Engr BSE major; CSE 310; CSE 365 with C or better OR Software Engr BS major; CSE 365; SER 222 OR Computer Sci & Engr or Software Engr graduate student OR Visiting University Student
CSE	467	Data & Information Security	Basic concepts of security and privacy, data and database security, access controls, trust models, watermarking, and private information retrieval.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better; CSE 365 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	468	Computer Network Security	Practical network security exposure and hands-on experience about basic security concepts, case studies and useful tools.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) w/ C or better: Computer Science BS, Computer Systems Engineering BSE, or Software Engineering BS major; CSE 365; CSE 434 OR Computer Science, Computer Engineering, or Software Engineering graduate student OR Visiting University Student
CSE	469	Computer and Network Forensics	Identification, extraction, documentation, interpretation, and preservation of computer media for evidentiary purposes, file system forensics, and network forensics.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Sci BS or Computer Systems Engr BSE major; CSE 310 with C or better; CSE 365 with C or better OR Software Engr BS major; CSE 365 with C or better; SER 222 with C or better OR Computer Sci & Engr or Software Engr graduate student

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CSE	470	Computer Graphics	Introduces basic concepts of interactive computer graphics, realistic rendering, and 3-D viewing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Digital Culture (Media Processing) BA/BS, Comp Sci BS, Geog Info Science BS, Comp Sys Engr BSE, or Software Engr BS major; CSE 310 or SER 222 with C or better; MAT 342 or 343 OR Comp Sci and Engr or Software Engr graduate student
CSE	471	Intro Artificial Intelligence	State space search, heuristic search, games, knowledge representation techniques, expert systems, and automated reasoning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS, Geographic Information Science BS, or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	472	Social Media Mining	Network measures, social network analysis, network models, random graphs, small-world model, power laws, data mining, influence and homophily, information diffusion, epidemics, behavioral analysis, recommendation in social media, community detection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) with a C or better: Comp Sci BS or Comp Syst Engr BSE major; CSE 310; IEE 380; MAT 343 OR Comp Sci & Engr or Software Engr grad student; Credit is allowed for only CSE 472 or CSE 494 (Social Media Mining) OR Visiting University Student
CSE	474	Mobile Robotics	Aims to make accessible to undergraduate students a principled and mathematically sound approach to the design of algorithms for robots. Students acquire the mathematical foundations that are required for the implementation and analysis of algorithms for robotic applications through homework problems and a final project. Among course goals is the development of the vocabulary and mathematical background so that the students can follow the current research and development trends in the robotics industry.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Sci BS or Computer System Engineering BSE major; CSE 310 with C or better; IEE 380 with C or better; MAT 343 with C or better; Credit is allowed for only CSE 474 or CSE 494 (Intro to Robotics) OR Visiting University Student
CSE	475	Found of Machine Learning	Machine learning techniques: supervised learning, unsupervised learning, and neural networks and deep learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/min C: Comp Sci BS, Comp Sys Engr BSE, Data Sci BS, or Informatics BS maj; CSE 310; DAT 300 or IEE 380; MAT 342 or 343 OR Comp Sci or Software Engr grad stdt; Credit for only CSE 475 or 494 (Intro Machine Lrng) OR Visiting University Student
CSE	476	Intro Natural Language Process	Principles of computational linguistics, formal syntax, and semantics, as applied to the design of software with natural (human) language I/O.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	477	Intro Computer-Aided Geom Desg	Introduces basic concepts of 3-D computer geometry, including curves, surfaces, meshes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; MAT 342 or 343 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): junior or senior standing
CSE	485	Computer Sci Capstone Proj I	First course in capstone sequence for computer science and informatics majors emphasizing development process, technical skills, teamwork, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prereqs w/min C: Comp Sci BS; CSE 301; CSE 330; CSE 340; CSE 355; CSE 360; ENG 101, 105 or 107; senior or postbacc OR Informatics BS; CPI 350; CSE 463; ENG 101, 105 or 107; Credit allowed for CPI 485 or CSE 423 or CSE 485

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CSE	486	Computer Sci Capstone Proj II	Second course in capstone sequence for computer science and informatics majors continuing the development process, technical skills, teamwork and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Informatics BS major; CPI 485 or CSE 485 with C or better; ENG 101, 105, or 107 with C or better; senior standing or postbaccalaureate student; Credit is allowed for only CPI 486 or CSE 423 or CSE 486
CSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): CSE 310 with C or better OR Visiting University Student
CSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-3		
CSE	509	Digital Video Processing	Concepts of digital video compression, video analysis, video indexing, browsing and retrieval, video transmission over networks, video processors, and relevant industry standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	510	Database Mgmt Sys Implementn	Implementation of database systems. Data storage, indexing, querying, and retrieval. Query optimization and execution, concurrency control, and transaction management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	511	Data Processing at Scale	Delves into new frameworks for generating, processing and managing large-scale data-sets. More specifically, covers the following topics: core database concepts, distributed and parallel data systems, deploying and operating data systems in the cloud, NoSQL database systems, and big data tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engr or Computer Sci grad student or Data Sci, Analytics & Engr PhD or Global Management (Data Sci) MGM or Software Engr MS OR Online Computer Sci nondegree-seeking grad student; Credit is allowed for only CSE 511 or CSE 512
CSE	512	Distributed Database Systems	Distributed database design, query processing, and transaction processing. Distributed database architectures and interoperability. Emerging technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM or Software Engineering MS student; Credit is allowed for only CSE 511 or CSE 512
CSE	515	Multimedia and Web Databases	Data models for multimedia and Web data; query processing and optimization for inexact retrieval; advanced indexing, clustering, and search techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	520	Computer Architecture II	Computer architecture description languages, computer arithmetic, memory-hierarchy design, parallel, vector, multiprocessors, and input/output.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Electrical Engineering, or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	522	Real-Time Embedded Systems	Development of real-time embedded systems, scheduling algorithms, embedded software structures, real-time operating system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, Master of Engineering, Engineering Science (Software Engineering) or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	530	Embed Operating Sys Internals	Investigating Linux source including: memory management, kernel synchronization and driver design topics. Designing, coding, testing, and evaluating embedded operating system software in a Linux environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student

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CSE	531	Distrib/Multiprocess Oper Sys	Distributed systems architecture, remote file access, message-based systems, object-based systems, client/server paradigms, distributed algorithms, replication and consistency, and multiprocessor operating systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	534	Advanced Computer Networks	Advanced network protocols and infrastructure, applications of high-performance networks to distributed systems, high-performance computing and multimedia domains, special features of networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	535	Mobile Computing	Mobile networking, mobile information access, adaptive applications, energy-aware systems, location-aware computing, mobile security and privacy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Robotics and Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR online Computer Science nondegree-seeking graduate student
CSE	536	Advanced Operating Systems	Protection and file systems. Communication, processes, synchronization, naming, fault tolerance, security, data replication, and coherence in distributed systems. Real-time systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	539	Applied Cryptography	Uses cryptography for secure protocols over networked systems, including signatures, certificates, timestamps, electrons, digital cash, and other multiparty coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	543	Info Assurance & Security	Comprehensive understanding of information assurance and security problems with the solutions as well as hands-on experiences about applying these solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student or Software Engineering MS student or online Computer Science nondegree-seeking graduate student
CSE	545	Software Security	Theories and tools for software security, including secure design, threat analysis and modeling, security testing and coding.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	546	Cloud Computing	Virtualization, cloud computing, programmable networking, performance evaluation, information assurance, distributed and parallel computing, and cloud computing-based applications. Students must have a solid background in computer architecture, operating system and computer networking to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM or Software Engineering MS student
CSE	548	Adv Computer Network Security	Comprehensive understanding of network security and corresponding solutions, including cryptography, access control, secure Web transactions, e-mail security, and viruses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	550	Combinatorial Algorithms/Intrt	Combinatorial algorithms, nondeterministic algorithms, classes P and NP, NP-hard and NP-complete problems, and intractability. Design techniques for fast combinatorial algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	551	Foundations of Algorithms	Advanced topics in formal algorithm design and analysis, including advanced shortest-paths algorithms, amortized analysis, network flows, NP-completeness and selected topics in computational geometry, distributed/parallel, randomized, and approximation algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engr, Computer Sci, or Industrial Engr grad student or Data Sci, Analytics & Engr PhD or Robotics & Autonomous Systems (AI) MS OR Online Computer Sci nondegree-seeking grad student; Credit is allowed for only CSE 450 or CSE 551

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CSE	552	Random&Approximation Algorithm	Introduces two important areas of algorithm design for graduate students. A randomized algorithm is allowed to rely on the outcome of a random experiment in deciding on its next step. In many applications, randomized algorithms are simpler than any deterministic algorithms known, but in several cases, they are in fact more powerful or more efficient than any deterministic algorithms. Covers basic paradigms for randomized algorithm design and analysis, as well as for derandomization.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student; CSE 550 or 551 or 555 with B or better
CSE	555	Theory of Computation	Rigorous treatment of regular languages, context-free languages, Turing machines and decidability, reducibility, and other advanced topics in computability theory.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	556	Game Theory with Applications	Strategic conflict as matrix games, notions of equilibrium, definition and existence of Nash equilibrium, zero-sum games, extensive-form games, Bayes Nash equilibrium, potential games, routing games, algorithmic game theory, computation of Nash equilibrium, incentives and pricing in communication networks, application of game theory in wireless networks. Knowledge of calculus, discrete mathematics, probability theory and algorithms is necessary to be successful in this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	561	Modeling/Simulation Theory/App	Modeling theories, simulation protocols, object-oriented modeling, model design, simulation analysis, network-based systems, discrete-event modeling, continuous modeling, hybrid modeling.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student or Data Science, Analytics and Engineering PhD student or Online Computer Science nondegree-seeking graduate student
CSE	563	Software Requirements and Spec	Examines the definitional stage of software development; analysis of specification representations, formal methods, and techniques emphasizing important application issues.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student
CSE	564	Software Design	Examines software design issues and techniques. Includes a survey of design representations and a comparison of design methods.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student
CSE	565	Software Verif/Validation/Test	Test planning, requirements-based and code-based testing techniques, tools, reliability models, and statistical testing.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student or Online CS nondegree-seeking graduate student
CSE	566	Software Proj/Process/Qual Mgt	Project management, risk management, configuration management, quality management, and simulated project management experiences.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	569	Fundamentals of Stat. Learning	Concepts of statistical pattern recognition, Bayesian decision theory, parameter estimation, discriminant analysis, basics of artificial neural networks, basics of data clustering. Knowledge of college-level calculus, linear algebra, basic probability theory and proficiency in computer programming is necessary to be successful in this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, or Industrial Engineering graduate student or Data Science, Analytics and Engineering PhD student
CSE	570	Advanced Computer Graphics I	3D shape analysis techniques: half-edge data structure, polygon mesh processing, fast marching method, iterative closest point algorithms, heat kernel and spectral analysis, isometric embedding.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	571	Artificial Intelligence	Definitions of intelligence, computer problem solving, game playing, pattern recognition, theorem proving, and semantic information processing; evolutionary systems; heuristic programming.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student

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CSE	572	Data Mining	Advanced data mining techniques: classification, clustering, association, preprocessing; performance evaluation; information assurance, Web mining, security and privacy issues, and other applications. Students must have a solid background in database management systems, search, learning, and statistics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Sci or Industrial Engineering grad student or Data Science, Analytics & Engineering PhD or Global Management (Data Sci) MGM or Software Engineering MS OR Online Computer Sci nondegree-seeking grad student
CSE	573	Semantic Web Mining	Data mining techniques for structuring and organizing unstructured sources such as text and Web data into meaningful machine-processable information; computational aspects of information extraction and data linkage; discovery and prediction tasks where text serves as data such as detecting events, measuring public opinion and making recommendations. A background in databases, algorithms and theory of computation is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	574	Planning/Learning Methods AI	Reasoning about time and action, plan synthesis and execution, improving planning performance, applications to manufacturing intelligent agents.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (Artificial Intelligence) MS student
CSE	575	Statistical Machine Learning	Spectral clustering, regression, classification, semi-supervised learning, feature reduction, manifold learning, ranking, kernel learning and multitask learning.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	576	Topics/Natural Language Proc	Comparative parsing strategies, scoping and reference problems, nonfirst-order logical semantic representations, and discourse structure.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Robotics and Autonomous Systems (Artificial Intelligence) MS or Software Engineering MS student
CSE	577	Advanced Geometric Modeling I	Advanced concepts of geometric modeling: rectangular and triangular surfaces, triangle meshes, Voronoi diagrams, discrete and continuous shape measures, volumes and volume visualization. Students must have a solid background in linear algebra, calculus, and basic 3D graphics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	578	Data Visualization	Amidst the information flood in which we are currently immersed, visualizations can be a well-placed treetop. The rise of big data has the potential to inform decisions, and visual representations can play a crucial intermediate role in our daily information consumption. Covers techniques and algorithms for creating effective visualizations based on principles from graphic design, visual art, perceptual psychology and cognitive science to enhance the understanding of complex data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Engr or Comp Sci or Industrial Engr grad student or Data Sci, Analytics & Engr PhD or Global Mgmt (Data Sci) MGM or Robotics & Autonomous Systems (AI) MS or Software Engr MS OR Online Comp Sci nondegree-seeking graduate student
CSE	579	Knowledge Representation	Covers knowledge representation and reasoning algorithms in artificial intelligence, shows how they can be used in practice, and provides an overview of current research trends.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Software Engineering MS OR Online CS nondegree-seeking graduate student
CSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS OR Online CS nondegree-seeking graduate student
CSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Engineering (Comp Systems) PhD, Computer Engineering (Electrical Engr) PhD, Computer Sci PhD, Computer Sci (AME) PhD, Computer Sci (Cybersecurity) PhD, Data Sci, Analytics & Engineering PhD, or Industrial Engineering PhD student
CSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CSM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
CSM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
CSM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		

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CSM	305	Sports Fac Operations & Mgmt	Overview of the management and operations of sports facilities.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210 with C or better; MAT 142 or higher; minimum 2.50 cumulative GPA; minimum 45 hours
CSM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
CSM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
CSM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CSM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student
CSM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CSM	407	Ethics/Legal Issues in Sports	Comprehensive look at ethical decision making from many perspectives in the sports environment. Presents legal issues as they relate to history, present society and future trends.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 201 OR Visiting University Student
CSM	453	Inclusive and Adaptive Sports	Provides an overview of adaptive community recreation, the importance of inclusion in the recreational field and how to facilitate programs in this growing field.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or CSM 494 (Inclusive and Adaptive Sports and Recreation) or PRM 453 or PRM 494 (Inclusive and Adaptive Sports and Recreation) OR Visiting University Student
CSM	463	Senior Internship	Supervised guided experience in selected agencies.	N		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s) with C or better: CRD 403 or PRM 413; CSM 402 or NLM 402 or PRM 402 or TDM 402. Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
CSM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student
CSM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
CSM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
CSM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		

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DAT	250	Data Science and Society	Examines quantitative literacy from a data and evidence driven perspective. Looks at the literature behind vaccines, climate, and other contentious topics where there is a wealth of scientific literature and yet these areas are still hotly debated. Investigates ways in which data science is abused; how to mislead with statistics, and how these problems have created a lack of trust in science. Through class discussions, case studies and exercises, students learn the basics of ethical thinking in science, understand the history of ethical dilemmas in scientific work, and study the distinct challenges associated with ethics in modern data science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 117, 119, 142, 170, 171, 265, or 270 with C or better OR Visiting University Student
DAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	300	Math Tools for Data Science	Covers the core mathematical topics that underpin data science as well as the key algorithms used for modern data analysis and how to implement them in Python.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 300 or STP 494 (Mathematical Tools for Data Science) OR Visiting University Student
DAT	301	Exploring Data in R and Python	Focuses on the exploration of the types of data typically encountered in modern data science, such as text data, spatial data, and time series data. Uses various statistical techniques to gain insight into the structure of the data, including graphical visualization, linear regression, trees and clustering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 301 or STP (Exploring Data in R and Python) OR Visiting University Student
DAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	401	Stat Model Inference Data Sci	Covers the basic statistical concepts underlying data science as well as some of the major methods. Includes fundamental ideas such as the key idea in predictive modeling is the bias-variance tradeoff, and cross validation is the basic approach for dealing with the bias-variance tradeoff. Statistical inference underlies much of data science methodology. Includes Bayesian and frequentist approaches to inference and how they are used in some of key ideas and methods in data science such as causal inference with observational data. Covers some key methods such as K nearest neighbors, naive Bayes classification, A/B testing, linear models, Gaussian processes and data reduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): DAT 301 with C or better; Credit is allowed for DAT 401 or STP 494 (Statistical Modeling and Inference for Data Sci) OR Visiting University Student
DAT	402	Statistical Learning	Concerns the key modern approaches for uncovering high-dimensional complex structure in data. Topics include regularized regression, ensemble methods with trees, deep neural nets, clustering and dimension reduction and state space modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): DAT 401 with C or better; Credit is allowed for only DAT 402 or STP 494 (Machine Learning / Statistical Learning) or STP 598 (Machine Learning / Statistical Learning) OR Visiting University Student
DAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
DAT	490	Data Science Capstone	Capstone allows students to build a culminating experience that reflects the breadth and depth of their data science experience and allows each student to explore a research area, interest, theme or question within the realm of data science. Develops final written projects in small groups based on consultation either directly within data science or within their concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2-4	L	Prerequisite(s): DAT 401 with C or better; ENG 101, 105, or 107 with C or better
DAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		

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DBA	701	MacroECN Policy in Global Envi	Provides the framework for policy makers when facing macroeconomic situations, the tools in analyzing the costs and benefits of alternative policy options, and the knowledge necessary for making recommendations to policy makers and business leaders. Students learn knowledge and skills about global economy and risks that help facilitate dissertation research.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	702	Glob FIN Sys Mkt & Institution	Examines the overall architecture of the global financial system, its major components, and their functions in the macro economy.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	703	Glob FIN Sys Institute Invest	A large fraction of investors around the world invest in securities markets indirectly, viz. through mutual funds or separate accounts established with investment managers, whether they be endowments, foundations, pension plans or sovereign funds. Exposes students to the global marketplace for such portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	704	Des KBs Org Performance & Inno	Covers various issues on executive compensation and management pay structure with a particular emphasis on aligning business strategy, organization design to the choice of performance standards and pay structure for managers.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	705	Global Corporate Strategy	Demonstrates that decisions affecting the international expansion of a firm are neither obvious nor totally determined by the technological or economic forces generally associated with globalization. Addresses the most transcendental decisions that multinational firms face in the course of conducting business across borders.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	706	Strategic Visioning Leadership	Addresses the interrelationship among organizational culture, leadership, and the management of change in order to promote continuous improvement of the organization's market position. Addresses the role of strategy, how strategy explicates vision, and how effective strategies are created.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	707	Risk Management	Provides an understanding of the broad set of risks an enterprise faces; their origin, characteristics and potential impact on business; and how they can be efficiently managed at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	708	Corporate FIN and Governance	Helps students understand the link between finance and corporate strategies, as well as examine ways to establish and reform the practices of corporate governance in China.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	709	Finance and Law	Helps students learn about the philosophy of law, various legal systems, the relationships among law and economics and finance, the practice of law in a global context.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	710	Financial Decision Making	Provides a framework of conceptual knowledge and enables students to understand what the literature on financial theory is trying to do and how it all fits together. Also provides an in-depth experience with the subject of finance and equips students for their future development as a practicing executive.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	711	Financial Innovations	Focuses on how financial innovations influence the evolution of finance. Discusses many of the major financial innovations in recent history, the forces driving these innovations, their impact on the financial system and the real economy and the risks they bring.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	712	Econ & Finance Domestic Module	Addresses many critical topics facing China today on its quest of globalization, the need for transforming its economic structure, capital markets and corporate control, and its monetary policies.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	713	Adv Topics in Strategy Mgt Dom	Reexamines many popular best practices through panel discussion and speaker series on why some of those practices failed to work in China, and how firms have creatively modified their strategic undertakings to fit its environment.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	714	Current Trends U.S. Module	Provides first-hand experiences on the world class practices by the multinationals and interactions with the leading experts on the emerging topics of interest on globalization, financial regulations, and managerial innovations.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	715	Current Trends Europe Module	Provides direct exposure to European markets, firms, and institutions, their history, current status, and future directions.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student

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DBA	721	Seminar: Research in Action I	Provides needed skills for research and thesis work. 1. Focuses mainly on research design and fundamental statistical/survey and field study methods. The key objective is to provide students with the needed required skills and concepts of the scientific method, the philosophy of science, and research design with an emphasis to solve specific problems. This course is spread out during the first year of the program.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	722	Seminar: Research in Action II	Focuses on the process of research "in actions" through faculty presentation and research workshops. Faculty with diverse research interest and methodologies present up-to-date research works. Through interaction, students gain first-hand experience on learning the process of how faculty, with diverse research interests, are able to identify specific research topic, choosing the right research methodology to address their research questions. The presentation and research workshop are scheduled at the beginning of the second year and throughout the entire year, allowing the program to leverage faculty availability during their course delivery while enabling students to seek out their faculty mentors for future dissertation engagement.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	723	Seminar: Research in Action III	Provides students with opportunities to present their own research proposal/ thesis ideas while allowing the participating faculty and fellow students to offer constructive comments.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DBA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	100	Introduction to Dance	Introduces 21st-century dance through a lens of creativity that acknowledges dance as a vital art where leadership, context, humanity and reflection provide centers of dynamic engagement for bodily movement where new meanings for dance are possible.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	110	Argentine Tango I	Introduces basic movement elements, explores various contexts shaping Argentine Tango, and emphasizes social tango with exposure to vals and milonga timing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	111	Belly Dance I	Familiarizes students with the art and practice of belly dance. Covers posture, styling, basic body isolations, rhythm patterns, footwork, as well as the social significance and history of the dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	112	Capoeira I	Introduces the Afro-Brazilian martial art and movement form capoeira. Molds elements of self-defense, dance, music, song, language, culture and philosophy into the course.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	113	Dances of Africa I	Introduces basic elements of West and Central African dance styles, including the traditional rhythms and cultural context.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	114	Dances of India I	Introduces Indian folk dances with an emphasis on the history and various movement elements of an ancient South Indian classical dance form, known as Bharata Natyam.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	115	Yoga I	Introduces a basic physical and philosophical understanding of yoga. Designed by a certified Yoga instructor.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	116	Tai Chi Chuan I	Introduces an ancient Chinese internal martial art form. The structure includes the beginner level of Tai Chi Chuan theory and movement practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	117	Feldenkrais I	The Feldenkrais method is an approach to enhance awareness of the body, improve functional actions, and expand one's repertoire of movements.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	118	Yoga/Pilates	Provides a basic physical and philosophical understanding of yoga and Pilates mat practices.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	120	Contemporary/Modern I	Beginning level of contemporary modern dance for nonmajor students. Emphasizes a range of movement styles, fusing contemporary and traditional forms. Places a special focus on somatic principles, body placement, strength and range of movement. Provides opportunities to explore the history of contemporary modern dance, as well as engage in creative activities.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	121	Ballet I	Introduces basic concepts of ballet technique, including dynamic alignment, musicality and classical movement vocabulary. Instructors use a somatic approach to this traditional art form. Students also learn about the history and context of ballet.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		

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DCE	122	Jazz I	Explores the basics of jazz dance techniques and various styles. Focuses on alignment, technique, jazz rhythms and performance skills.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	123	Nonmajors Hip Hop I	Introduces various styles of dance within the hip hop genre. Covers the fundamentals of dance through embodied learning of hip hop styles based on instructor's area of expertise. No previous dance experience necessary. Expects students to engage in both weekly movement classes as well as at least one cultural event beyond the studio to better understand their dance practice within the cultural context of which they exist.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	124	Latin/Swing/Ballroom I	Introduces major Latin and ballroom dances and focuses on a system of elements that are found in all partnership dances, including movement components, rhythmic patterns, dance positions, and unique characteristics used to better define each dance.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	125	Afro-Latin Salsa I	Beginner level Afro-Latin social dances. Designed and structured for students with no previous dance history with movement, historical context, culture and rhythms that are associated with Latin social dance. Students learn fundamental technique and partnering frameworks, while engaging in the structures of community and participatory engaged practices in social dance.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	126	Country-Western	Initiates the student into the rhythm two-step, progressive two-step, night club two-step, country cha-cha, country waltz, triple swing and a multitude of line dances.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	130	First-Year Movement Pract I	Introduces diverse somatic movement principles and practices through exploration of movement, context, theory, and personal reflection.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major OR Visiting University Student
DCE	131	First-Year Movement Practi II	Modular structure enables a series of short intensive studies including movement, context, theory, and personal reflection.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 130 with C or better
DCE	132	Dance Techniques	Introduces the movement vocabularies or steps, aesthetics and practices of the dance styles currently offered in the Bachelor of Fine Arts dance degree programs. Includes equal emphasis on the dance styles presented in class, which may include contemporary ballet, postmodern contemporary dance, salsa, urban movement practices and others. Emphasizes physical practice; expects students to engage creatively, reflect on their learning and demonstrate critical thinking in all class sessions.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance or Dance Education BFA major
DCE	133	Hip Hop I	Focusing on a strong foundation, encourages students to engage in studio classes and community cultural events throughout the semester. Exposes students to several hip hop foundational dance forms under and related to breaking, popping and locking. Develops and connects culturally relevant content to inform students' movement in these styles and, more importantly, find their own identity within these forms.	N		LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major, Performance & Movement BA, BIS Dance concentration or Dance minor OR Visiting University Student
DCE	134	Postmodern Contemporary I	Studies contemporary modern dance rooted in postmodern traditions. Includes diverse movement styles that build foundational knowledge and integrates somatic principles with physically challenging material. Enhances the student's artistry as a performer and creator. Also introduces the history and theory of the postmodern contemporary dance form.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student
DCE	135	Contemporary Ballet I	Begins the study of ballet from a contemporary lens. Content includes classical ballet vocabulary, dynamic alignment, whole body integration and experiential anatomy. Enhances a student's foundational knowledge of the ballet vernacular; also considers the social and historical contexts of ballet artists and techniques.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student
DCE	136	Somatic Practices I	Survey course offers a practical and theoretical introduction to some of the major somatic practices evolving during the 20th century in the West; also offers exposure to some traditional Eastern disciplines and philosophies influencing those developments. Focuses upon self care, resilience, well-being of spirit, body and mind; explores movement and the integration of the whole person through a variety of somatic lenses.	N		LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student

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DCE	137	African&Diaspora Mvt Pract I	Foundational course in the African and the Diaspora movement practices curriculum.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Dance BFA, BIS-Dance concentration or Dance minor; Credit is allowed for only DCE 137, 194 (Mvt Practice: Africa/Diaspora), 294 (Mvt Practice: Africa/Diaspora) or 494 (African & Diaspora Mvt Prac)
DCE	139	Afro-Latin Movement Pract I	Beginning-level course in Afro-Latin dance practices introduces the culture, movement rhythms and historical dialogue associated with various forms of Afro-Latin social dance practices, specifically salsa and mambo. Progressively teaches basic fundamentals in footwork and partner work, along with understanding timing and connection with Afro-Latin social music throughout the semester in class and in social events. By learning the movement fundamentals and applying them through social dancing, students not only succeed in the course, but also evolve in becoming a knowledgeable and participative social dancer within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DCE 139 or DCE 194 (Salsa I)
DCE	160	Creative Practice I	Focuses on cultivating one's creative process by investigating methods, strategies and dance-making approaches. Involves movement investigation and development, moving-making and designing, group discussions, readings, journal writing, instructor and peer-feedback, choreographic analysis, and reflective writing. Explores creative strategies that begin from a place of self and embodied history, one's archive, and ongoing repertoire. Expands toward processes that explore our interconnectivity with the body, multiple bodies, partners and constructing new methodologies of performing movement for any audience or daily life.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA or Dance (Dance Education) BFA or Performance and Movement BA major OR Visiting University Student
DCE	161	Creative Practice II	Explores creativity and creative processes with reference to some key historical practices and influential artists. Encourage and develops students' awareness of their own imagination and creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA or Dance (Dance Education) BFA or Performance and Movement BA major; DCE 160 with C or better OR Visiting University Student
DCE	170	First-Year Seminar I	Orientation to studying dance in college, the university learning environment, and the professional practice of dance	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance BFA or Performance and Movement BA major OR Visiting University Student
DCE	171	First-Year Seminar II	Continuation of First-Year Seminar I. Focuses on orientation to the larger field of contemporary dance practice with an emphasis on developing tools and processes for reflection, synthesis, and critical thinking. Requires participation in School of Dance "Dance Matters."	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major
DCE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	201	Dance, Culture&Global Contexts	Introduces the study of dance as culture in diverse global contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	202	Dance in U.S. Popular Culture	Investigates vital cultural heritages that have shaped dance in U.S. American popular culture from 20th century to the present. Emphasizes dance as a producer of social space and cultural identity as well as a reflection of diverse social realities and dynamics of power. Following required reading and videos, the course surveys time periods of dance from the late 1800s through the 20th century to the present day.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Credit is allowed for only DCE 202 or 294 (Dance in US Popular Culture)
DCE	203	The Walking Body	Investigates walking as movement language with the focus on physical thinking. Micro-research engages the student with collecting data from peripatetic walks and focused weekly walkings to hone the skill sets of: perception to increase one's awareness to the spatio-temporal context and one's attentional flow during walking.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Pre- or corequisite(s): ENG 101, 105 or 107 with C or better if completed OR Visiting University Student

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DCE	204	Dance, Health and Wellness	A class of dynamically interacting ideas. Dance promotes health and wellness. Wellness practices create a healthy dancer. A healthy dancer is one who has a wellness mindset and knows how to prevent injuries. Studying the interaction of these three ideas is intended to produce a movement literacy. This movement literacy, however, lives implicitly in a world where bodily communication of tensional relationships, tugs, and pulls is silent. Thus, a further intention is to transform the implicit understanding to explicit communication through applying academic communicative skills of writing and speaking. Circumnavigates the polycenters of healthy movement, injury prevention and wellness identifying strategies, models and practices that best optimize movement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed OR Visiting University Student
DCE	205	How Dance Matters	Introduces observing, discussing and analyzing dance through a contemporary sociocultural lens. Introduces the contemporary contexts of the dance forms currently offered in the BFA dance programs, including contemporary ballet, postmodern contemporary, salsa and urban movement practices as well as others. By examining where and when the dance occurs, who participates and how, and why dance matters across each of these forms, students gain a deeper understanding of what makes each dance form unique, the elements of each form that overlap with others, and how dance can both ignite and reflect cultural change. Additionally, students learn to write about dance in a way that recognizes and describes key values and attributes of each dance form and articulately uses description, interpretation and evaluation to create informed perspectives of dance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Pre- or corequisite(s): ENG 101 with C or better if completed
DCE	210	Argentine Tango II	Builds upon concepts, figures, and elements of the Argentine Tango introduced in level one.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 110 or DAN/DCE 194 (Argentine Tango I)
DCE	211	Belly Dance II	Focuses on refining beginning technique, advanced movements, layering and musical interpretation. Uses choreography and improvisation to encourage mind-body awareness.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 111 OR Visiting University Student
DCE	216	T'ai Chi Ch'uan II	Intermediate-level study of the ancient Chinese martial art of rounded, fluid, balanced movements. Teaches the sets of long form Yang style of Tai Chi Ch'uan in a slow and relaxed manner.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 116 or DAN 194 (T'ai Chi Ch'uan I) OR Visiting University Student
DCE	220	Contemporary/Modern II	Intermediate level of contemporary modern dance for nonmajor students. Emphasizes a range of movement styles, fusing contemporary and traditional forms. Special focus on somatic principles, body placement, strength and flexibility. Provides opportunities to explore the history and social significance of modern dance, as well as performance skills and choreography.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	221	Ballet II	Open to all ASU students, focuses on contemporary and classic ballet practices and increasing students' understanding of the integration of both. Students also learn about the historical and cultural contexts of contemporary ballet. Continued practice on voicing the inner perspective of experiencing ballet and relating it to the aesthetics outer perspective.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	222	Jazz II	Explores intermediate level of jazz dance techniques.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 122 or DAN 130 (Jazz I)
DCE	223	Nonmajors Hip Hop II	Intermediate-level class that provides the knowledge of hip hop dance history, culture and music through studio work on various hip hop dance styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 123 OR Visiting University Student
DCE	224	Latin/Swing/Ballroom II	Continues development of level one Latin/Swing/Ballroom dances to prepare student to have command of the complex rhythmic patterns and figures used in major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 124 or DAN 194 (Latin/Swing/Ballroom I) OR Visiting University Student
DCE	225	Afro-Latin/Salsa II	Designed and structured to build upon content from previous coursework, for students who have completed Level I or have had previous dance history with movement, historical context, culture and rhythms that are associated with Latin social dance. Students continue to refine their technique and sensibility, while engaging in the structures of community and participatory engaged practices in social dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 125 OR Visiting University Student

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DCE	226	Music & Kinesthetic Comm Dance	Brings basic principles of rhythmic awareness and theory to life through movement and breath. Develops listening skills to "hear" movement and to "see" sound, providing a foundation of skills and knowledge to perform and aurally recognize beat patterns, subdivisions, grooves, textural and qualitative subtleties in different styles. Practical application of concepts and abilities for teaching dance musically--connecting to students' personal movement practice, somatic and pedagogy classes as well as linking rhythmic theory concepts with aural and kinesthetic listening skills and life.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Corequisite(s): DCE 124, 133, 134, 135, 136, 139, 224, 233, 234, 235, 236, 239, 324, 333, 334, 335, 336, or 339 OR Visiting University Student
DCE	230	2nd-Yr Movement Practices I	Investigates selected movement forms in the second-year movement practices. New movement forms include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance majors; DCE 131 with C or better OR Visiting University Student
DCE	231	2nd-Yr Movement Practices II	This course is set up in two modules. In module one, students will investigate a movement form, include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork. Module two expands the practice of rhythmic awareness through exploration and investigation of the close relation between thought and act, the kinesthetic and the verbal, the text and the beat, as well as the breath and the word.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 230 with C or better
DCE	233	Hip Hop II	With a deeper understanding and training with a focus on music freestyle and cultural connections, students build upon foundational knowledge and approaches to at least two hip hop forms. Students take instructor-led dance classes while working with local practitioners in the studio and community such as DJs, beatmakers, beatboxers and music producers.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 133 with C or better OR Visiting University Student
DCE	234	Postmodern Contemporary II	Further the study of contemporary modern dance rooted in postmodern traditions at the intermediate level. Emphasizes somatic principles, performance quality and complex movement ideas. Enhances the student's artistry as a performer and creator; also furthers student's study of the history and theory of the postmodern contemporary discipline through physical and written assignments. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 132 with C or better; DCE 134 with C or better OR two completions of DCE 134 with C or better OR Visiting University Student
DCE	235	Contemporary Ballet II	Further the study of ballet with a contemporary lens, allowing the dancer to develop and hone the relationship between the somatic experience and the ballet tradition. Employs further investigation of concepts as students manipulate physical concepts to deepen their understanding of the theory and lineage of contemporary ballet. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 132 with C or better; DCE 135 with C or better OR two completions of DCE 135 with C or better OR Visiting University Student
DCE	236	Somatic Practices II	Co-taught laboratory that explores foundations of somatic education, including principles of dance science, bodywork practices, Bartenieff Fundamentals, and Body-Mind Centering. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment. Nonmajors are welcome and encouraged to enroll as this course benefits anyone interested in dance, theater, music, social engagement, architecture and design, education, and health and wellness, among other areas.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	239	Afro-Latin Movement Pract II	Beginner/intermediate-level course designed and structured to build upon students who have completed Afro-Latin dance practices with the movement, historical context, culture and rhythms associated with Afro-Latin movement dance. Framework of movement involves reviewing beginner, then covers intermediate fundamentals in footwork and partner work that is learned in salsa technique progression modules. Along with progression modules, addresses through online readings and documentaries the history and social significance of Afro-Latin movement practices, such as salsa on2, cha cha and bachata. Through learning intermediate fundamentals and applying them through social dancing, students succeed and evolve in becoming knowledgeable and proficient social dancers within the salsa community. Expects students to not only have fun, but to integrate their learning within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 139 OR Visiting University Student

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DCE	240	Media for Dance	Computer applications for human movement modeling, digital video design and creation, sound composition, and the incorporation of multimedia design elements into online environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
DCE	260	2nd-Yr Creative Practices I	Explores concepts introduced in the first year of creative practice and further expands into the themes of analysis and investigation. Year two experience involves the investigation of learning to compose and construct choreographic material through individual, collaborative, improvisational, and group exploration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 161 with C or better OR Visiting University Student
DCE	261	2nd-Yr Creative Practices II	Continues developing students' awareness of their own creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 260 with C or better
DCE	262	Rhythmic Theory for Dance I	Elements of music, music structures, and their relationship to dance. Emphasis on rhythmic analysis and dance accompaniment.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: BA Performance and Movement or BFA Dance major
DCE	270	Second-Year Seminar I	Continues developing tools and processes for reflection and critical thinking by identifying individual goals and objectives related to the students' current and future academic and professional careers.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 171 OR Visiting University Student
DCE	271	Second-Year Seminar II	Provides basic understanding of costume design, sound production, and interactive performance for dance.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 270 with C or better
DCE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	300	Dancing Histories	Critical investigation, especially in relation to gender, sexuality, race and class, of the history and historiography of vernacular and concert dance forms informing dance in America today. Focuses on Afro-Latin social dancing, ballroom, jazz, hip hop, ballet and modern/postmodern dance forms. Students learn about various ways of conducting research into dance history, including interviewing, researching using primary resources and performing scholarship.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 101, 105 or 107 with C or better
DCE	301	Dance Analysis and Theory	Reflective inquiry into the nature of dance through the lenses of dance analysis and critical theory. Covers philosophical and theoretical issues raised by the study of dance in relation to specific historical and global contexts. Students learn how to describe and analyze the components and form of dance events, and interpret and evaluate works by applying feminist, queer, postcolonial and critical race theories, among others.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
DCE	302	History of American Hip Hop	The histories of hip hop dance are multilayered and multifaceted. There is not a singular history of hip hop dance, yet multiple entry points with multiple pathways of understanding to unpack the turbulent and linked histories of historically disenfranchised communities within the context of post-Civil Rights era United States. Designed as a seminar experience and operates from the assumption that hip hop dance is an extension of African diasporic traditions colliding with multiculturalism and youth culture. Serves as a portal to some of the histories, perspectives, individuals and stories that help shape the forms of hip hop dance expressed throughout this course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
DCE	303	The Body Condition(ed)	Examines contemporary practices of conditioning the body from a triangulation of perspectives: physical, social, and experiential. Enhances the ability to obtain a holistic understanding of how the self/social dynamic operates within the context of body conditioning. Designed for Non-Majors. Not Eligible for Dance Major Requirements.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	SB	Pre- or Corequisite(s): ENG 102, 105, or 108 OR Visiting University Student
DCE	306	History of Salsa: Afro-Latin	For students who are curious about salsa dancing and music, and who have interest in learning about its timeline and origins. Salsa is a migrational phenomenon, and the course traces the journey of multiple timelines that intersect with the global industry it has become today. Course theme revolves around the concept of salsa hybridity and the migrational dance that continues to evolve based on the interexchange of music and dance as it represents Afro-Latinness in the community. Content focuses on tracing the pathways of salsa and its origins from a dance and music perspective. Content also includes chronological investigative critique on performance from salsa congresses and festivals, and social dance videos from various video platforms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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DCE	324	Latin/Swing/Ballroom III	Refines dances learned in the intermediate level of Latin and ballroom dances, including foxtrot, waltz, salsa, cha cha, rumba, samba, west coast swing, bolero, tango, and swing. Prepares students to have a more advanced command of the complex rhythms and figures used in the major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 224 or DAN 294 (Latin/Swing/Ballroom II) OR Visiting University Student
DCE	330	3rd-Yr Movement Practices I	Focuses on the application of diverse movement forms and somatic studies in a range of performance contexts. These contexts may include live and mediated performance, community-based projects, pedagogy, analysis of movement forms in relation to musical compositions or the creation of new movement languages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major; DCE 231 OR Visiting University Student
DCE	331	3rd-Yr Movement Practices II	Student will focus on the integration of diverse movement forms and somatic practices, as well as developing an in-depth understanding of a range of performance contexts practically and theoretically.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 330 with C or better
DCE	333	Hip Hop III	Underscores hip hop cultural practice as inherently interdisciplinary and as a culture expressed in various practices and forms. Students bring a solid foundation of different techniques, approaches and contexts of multiple hip hop dance styles to fluently and radically bridge their dance practice and movement as a tool to empower and transform.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): two completions of DCE 233 with C or better OR Visiting University Student
DCE	334	Postmodern Contemporary III	Advanced level of contemporary modern dance rooted in postmodern traditions. Prepares students for the professional field of dance while continuing to deepen their understanding of the history and social significance of the art form. Includes diverse movement styles that emphasize a nuanced approach to complex movement concepts and somatic principles. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): two completions of DCE 234 with C or better OR Visiting University Student
DCE	335	Contemporary Ballet III	Advanced level for contemporary ballet furthers the study of ballet with a contemporary lens, allowing the dancer to develop and hone the relationship between the somatic experience and the ballet tradition. Employs further investigation of concepts as students continue to apply physical learning to deepen their understanding of the history and theory of contemporary ballet. Written work expands students' contextual understanding of ballet's most current choreographers and happenings. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	336	Somatic Practices III	Laboratory for somatic education that engages students in the theoretical and guided practical study of somatic movement practices. Facilitates students in exploring and addressing personal movement concerns and identifying areas for growth while expanding student understanding of the diversity of approaches to somatic studies. Focuses on body awareness, holding patterns, and movement re-education through various somatic practices drawn from Bartenieff Fundamentals, Body-Mind Centering, ideokinesis, Laban Movement Analysis, Dynamic Embodiment and other related somatic constructs.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours
DCE	338	Hip Hop Ensemble	Comprises dancers and musicians exploring the connections between hip hop musical practices and hip hop movement forms in a live improvisatory setting. Places special emphasis on hybridization, or the blending of musical traits and physical movement from two or more genres. Throughout the semester, builds cooperative practices with one another and experiments in a cross-disciplinary manner. Catalyzes and fosters ability to imagine innovative musical and movement practices within the hip hop aesthetic. Course serves as an "experiment lab" for music and dance students.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours; Corequisite(s): DCE 233 or DCE 333 OR Visiting University Student
DCE	339	Afro-Latin Movement Pract III	Advanced course brings an interdisciplinary approach toward performance, competitive and social partner movement that incorporates multiple contextual and Afro-Latin dance style perspectives to inform and critique one's own dance understandings. Provides a learning environment to investigate performance elements/theories and how they relate or contrast within the following dance styles: Afro-Latin Social which include NY Mambo, Cha Cha and Bachata.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum two completions: DCE 124, DCE 139, DCE 224, DCE 239, or DCE 324; Credit is allowed for only DCE 339 or DCE 394 (Afro-Latin Movement Practices III) or DCE 394 (Salsa III) OR Visiting University Student

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DCE	350	Classroom Learning Through MVT	Explores theories of learning, thought development, and knowledge construction through aesthetic movement experiences. Students look to theories from the fields of aesthetics, phenomenology (study of lived experiences), somatics (study of the soma or body/mind), sociology and epistemology (theory of knowledge) to understand how the intertwined relationship of human thought development and movement patterning can affect children's learning and development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
DCE	354	Creative Approach Tchng Dan 1	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA major
DCE	356	Creative Approach Tchng Dan 2	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student OR Visiting University Student
DCE	360	Third-Yr Creative Practices I	Provides an orientation to the field of community dance practice. Students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student; DCE 261 with C or better OR Visiting University Student
DCE	361	3rd-Yr Creative Practices II	Historical survey of music and compositional elements relative to dance. Emphasis on analysis of choreography from a musical standpoint.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite(s): Dance major; DCE 360 with C or better
DCE	370	Third-Year Seminar I	Provides an orientation to the field of community dance practice. Over two consecutive semesters, students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 271 with a Y
DCE	371	Third-Year Seminar II	Hones skills in collaborative approaches, teaching, leading, and facilitation through partnerships with community organizations in the Phoenix metropolitan area. Students study community dance practices covering a range of creative process and community building tools that can be used in diverse settings. Applies research methods, such as data collection, analysis, and reflection, to measure the efficacy of community arts practices.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 370 with a Y.
DCE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	402	Ethnography of Dance Practices	Examines the field of ethnochoreology, ethnographic methods, and interpretive research practices. Develops critical writing, thinking, and viewing skills for comparative dance study.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): DCE 201 with C or better; ENG 102, 105, or 108 with C or better
DCE	403	Making. Living. Thriving Arts	This specialized course looks at how creative practices and research revitalize one another and how artists continue to sustain themselves by bringing imaginative responses to 21st-century living. This course grew out of a wish to share the diversity of approaches in the current dance curriculum at ASU. In this open forum setting, we may develop a vibrant community moving toward visionary, yet realistic ideals in the arts, experiential learning and how we creatively contribute and support ourselves in the world. Emphasizes arts making practices and being self-supporting with one's creative work. Throughout the class, various artist/scholars share their creative research work and how they sustain a life in the arts. Among others, their perspectives may include a variety of intersections such as social issues in health/wellness, equity and justice, entrepreneurial thinking, technology and social engagement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Herberger major or minor; minimum 60 hours
DCE	404	Dance and Ethics	Examines ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing

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DCE	405	Writing the Creating Body	Invites students into theorizing the lived experience of the creator during the creative act. This inner landscape of the creator's experience is one of change and split-second decisions. Why capture this landscape? As an artist, students can find their own patterns of creativity. If they wish only to appreciate creative artists, their understanding of the creative process deepens and magnifies. To capture this inner landscape, students learn new writing skills within a robust framework that can analyze the fluidity of the creative act.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only DCE 405 or DCE 505 OR Visiting University Student
DCE	433	Hip Hop IV	Focuses on application of various stylistic, technical and performance techniques expected at an advanced level in various forms of hip hop. Expects students to clearly articulate (in their words and bodies) hip hop as the embodiment of two or more dance styles rooted from the dance scenes of underground, street and/or club dance counterculture. Deepens understanding of the form through performance of the movement within cultural community context, "the studio," and within other community-oriented settings. It is through performing in these venues where students draw connections to help develop a nuanced mode of training within the studio.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 333 with C or better; two completions of DCE 338 with C or better OR Visiting University Student
DCE	435	Contemporary Ballet IV	Focuses on the students' individual application of contemporary ballet technique at an advanced level. Expects students to have an advanced, embodied understanding. Draws on a variety of traditional, codified and contemporary approaches to ballet as well as somatic techniques to enhance students' ballet proficiency through performing movement that is athletically challenging, nuanced and rhythmically complex. Emphasizes musicality and artistry throughout class. Engages students in critical thinking and reflection in relationship to their dancing and dance learning. Additionally, students engage with class concepts creatively through improvisation and composition.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 335 with C or better
DCE	438	Dance Theatre Performance/Prod	Project-based class gives the opportunity to explore the collaborative approach of producing and creating work. Students conceive and construct the lighting, sound, costumes, media and movement designs for several projects. All levels are welcome.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Film and Media Production BFA, Performance and Movement BA major, Dance minor, or BIS Dance concentration OR Visiting University Student
DCE	439	Afro-Latin Movement Pract IV	Focuses on the students' individual application of Afro-Latin salsa/mambo technique at an advanced level. Specific to undergraduate students who have completed previous coursework and are ready to focus on individual research, investigation and critique in Afro-Latin movement practices. With an expected advanced understanding of Afro-Latin rhythms and social partnerwork vocabulary, students synthesize past knowledge in previous courses and begin framing questions on areas of expertise to work in an Afro-Latin centric process that leads toward a finding, performance or finished/unfinished work.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 239 with C or better; two completions of DCE 339 with C or better OR Visiting University Student
DCE	460	Transition Project I	Original choreography for group performance with analysis and critique of problems encountered in production.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 361 with C or better OR Visiting University Student
DCE	461	Transition Project II	Original research that integrates dance and a related field of interest. Includes production of written document and public presentation. Fall semester must be completed before spring registration. May be repeated for a total of 4 semester hours.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 460 with C or better
DCE	470	Fourth-Year Seminar	Explores and investigates the larger world of dance as it pertains to transitioning out of the university environment into professional lives. Discussion revolves around career opportunities, options and finding potential work synergies that will parlay into meaningful and exciting lives.	N		SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: BFA Dance major; DCE 371; Credit is allowed for only DCE 470 or 494 (4th-Yr Seminar)

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DCE	482	The Alexander Technique	Mixed-level course open to students from across the Herberger Institute for Design and the Arts that covers the basic principles of the Alexander Technique (AT). The AT is a gentle reeducational process that promotes increased awareness and ease in movement. With a fundamental understanding and application of the AT principles, explores students' individual artistic practices and everyday patterns of movement through experiential research and application.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Herberger major; min junior standing; Credit is allowed for only DCE 482 or DCE 394 (Alexander Technique:Application&Mmnt Research) or DCE 582 or DCE 598 AlexanderTechnique:Applic&Mmnt.Rstch for Grad St) OR Visiting University Student
DCE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
DCE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
DCE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
DCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
DCE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	501	Philosophy of Dance	Analyzes traditional and contemporary theories of dance with regard to issues of expression, form, and meaning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	502	Cultural Concepts of Dance	Examines the close connections among culture, dance, and movement through writings in cultural theory, dance ethnology, and philosophy.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	504	Dance and Ethics	Examination of ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	505	Writing the Creating Body	Dives deep into the nexus of the creative process to explore more about student's own understanding or that of another artist. Applies frameworks to investigate the dynamic relationships among artist, audience and creative project that occur during the flow of creating. Lens is the embodied perspective of the creative artist with writing techniques honed for how to capture the inner experience of creating.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student; Credit is allowed for only DCE 405 or DCE 505
DCE	530	Somatic Movement Inquiry I	Explores somatic processes and frameworks as modalities for inquiry and research. Students engage in psychophysical investigations of specific somatic movement practices and frameworks, including Laban Movement Analysis, Body-Mind Centering and Dynamic Embodiment, as well as other phenomenological and epistemological frameworks for learning in and through the body. Approaches classroom experiences from theoretically grounded and contextualized perspectives that address through practice current somatic and epistemological thinking. Individual sessions with faculty support the deepening and exploration of personal movement inquiry and somatic research.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	531	Somatic Movement Inquiry II	Explores somatic processes and frameworks as modalities for inquiry and research. Students engage in psychophysical investigations of specific somatic movement practices and frameworks, including Body-Mind Centering, the Alexander Technique, Laban Movement Analysis and Dynamic Embodiment, as well as other phenomenological and epistemological frameworks for learning in and through the body. Approaches classroom experiences from theoretically grounded and contextualized perspectives that address through practice current somatic and epistemological thinking. Individual sessions with faculty support the deepening and exploration of personal movement inquiry and somatic research.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student

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DCE	534	Postmodern Contemporary	First-year graduate level of contemporary modern dance rooted in postmodern traditions. Prepares students for the professional field of dance while continuing to deepen their knowledge of the history and theory of the practice. Includes diverse movement styles that emphasize a nuanced approach to complex movement concepts and somatic principles. Expects students to take a self-directed approach to course content.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance graduate student
DCE	535	Contemporary Ballet	Graduate-level theoretical study and movement practice of contemporary ballet for contemporary dancers.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: MFA Dance student
DCE	536	Somatic Practices	Laboratory for somatic education that explores the foundations of movement, voice, expression and spatial awareness. Open to nonmajors, the class welcomes and encourages the participation of students from a wide variety of disciplines. Taught through the principles of specific somatic lenses (e.g., the Alexander Technique, Bartenieff Fundamentals, and Body Mind Centering), the course highlights how embodied awareness affects artistic process and choice making, as well as enhancing physical capacities, kinesthetic intelligence, and the refinement of performance and technical skills. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment. Integrated lecture/lab. Prerequisite(s): degree- or nondegree-seeking graduate.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only DCE 536 or DCE 598 (Movement Language Sources) or (Somatic Practices)
DCE	537	African&Diaspora Movement Prac	Investigates and integrates historical and cultural contexts for West, Central, and South African and Post-African (diasporic) movement practices. Engages movement and physical articulation as tools to examine specific dance cultural knowledge and demonstrate/embody techniques representing that cultural knowledge.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance major; Credit is allowed for only DCE 537 or DCE 598 (African Diaspora Movement Practices)
DCE	538	Dance Theatre	Performance in specially choreographed dance productions.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student
DCE	540	Issues in Media for Dance	Introduces desktop multimedia as it relates to dance creation, production, education, and research.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	543	Sound Design for Dance	Audio mixing for analog/digital recording and editing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Dance majors
DCE	554	Teaching Praxis I	Addresses the theoretical basis and practical application of principles for teaching dance disciplines in a postsecondary setting. Includes discussion, co-teaching and individual teaching projects and sessions, practical application of course readings, and guest speakers.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	560	Grad Creative Practices I	Covers the philosophy and the breadth of process-oriented possibilities for art-making and provides opportunities to deepen and define personal artistic practices.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	561	Grad Creative Practices II	Continues as a laboratory for practice-led research offering further exposure to a range of practices in dance making and artistic inquiry, including sound design. Supports students' thinking about their evolving art making methodologies and contextualization of their artistic practice in the current field.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance graduate student; DCE 560
DCE	563	Rhythmic Awareness	This course focuses on the kinesthetic aspects of weight, space, and time. It is opportunity for individual exploration as well as an ensemble experience, a chance to come together as a group through the communicative nature of sound, movement, and visual patterns.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	570	Graduate First-Year Seminar I	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices, present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world. Seminar.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance Graduate student; Credit is allowed for only DCE 570 or DCE 591 (1st Year Graduate Seminar)
DCE	571	Graduate First-Yr Seminar II	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices; present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DCE	582	The Alexander Technique	Mixed-level class open to students from across HIDA, covers the basic principles of the Alexander Technique (AT). The AT is a gentle reeducational process that promotes increased awareness and ease in movement. With a fundamental understanding and application of the AT principles, explores students' individual artistic practices and everyday patterns of movement through experiential research and application	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Herberger graduate student; Credit is allowed for only DCE 482 or DCE 394 (Alexander Technique:Application&Movement Research) or DCE 582 or DCE 598 (AlexanderTechnique:Applic&Mvmt.Rsrch for Grad St)
DCE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	634	Postmodern Contemporary	Preparation in the performance and comprehension of professional-level modern dance for second-year graduate students. 6 hours weekly.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Dance Graduate student
DCE	654	Teaching Praxis II	Applies current learning theories and psychomotor development approaches to teaching practices and curriculum design for a variety of contexts and populations ranging from early childhood to late adulthood and community to institutional settings. Students develop and implement pedagogical praxis frameworks that stem from their developing teaching perspectives, values and objectives. Course experiences are designed to help students effectually integrate pedagogical theory and practice toward successful and meaningful ends.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): DCE 554; Credit is allowed for only DCE 654 or DCE 598 (Apprenticeship)
DCE	656	Teaching Praxis III	Prepares students to teach in secondary dance education settings; to develop and teach higher education dance pedagogy, curriculum development, and teacher prep courses that meet professional teaching standards, state and national learning standards and requirements and institutional benchmarks. Participants develop specific teaching strategies and frameworks, as well as gain practical experience, within the settings of secondary dance education and university teacher preparation courses. Utilizes Laban Movement Analysis and other social somatic frameworks as inroads into teaching, curricular design and student assessment. Students help instruct and mentor undergraduate dance majors in a secondary dance teaching methods course. Illuminates current sociocultural and educational issues that influence teaching and learning in secondary dance classrooms, and addresses strategies and requirements for pre-service teacher preparation courses.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): DCE 554; Credit is allowed for only DCE 656 or DCE 680 (Secondary Teaching Praxis and Teacher Training Frameworks)
DCE	657	Pedagogical Res and Fidwrk	Provides a theoretical and practical foundation for students to engage in pedagogical research and fieldwork. Places primary emphasis on investigating and applying qualitative methods to processes of pedagogical inquiry and research. Students are mentored through processes of gathering information, focusing, designing, implementing and assessing an educational research project through fieldwork in a context of their choosing. The outcomes of students' fieldwork projects are documented and articulated in the forms of a scholarly research paper and live research presentation.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 554

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DCE	660	Grad Creative Practices III	Artistic research through the practices of choreographic choice making, exploration, and experimentation of integrated environments and interdisciplinary collaboration.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	661	Graduate Creative Practices 4	Culmination of a four-semester Creative Practices sequence, focusing on articulating individual creative practices and identifying the needs of each student relative to their Applied Projects. Students are also responsible for understanding the content and requirements for the selected modules of this course.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	670	Graduate Second-Year Seminar I	Part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, presents opportunities for dialoguing about topics significant to fulfilling degree requirements and promotes success in the dance program as well as to facilitate transition into the professional world. Reflection is a key component of the School of Dance curriculum; develops ability and skills in analysis, but more importantly builds awareness of intuitive and habitual patterns of response to new stimuli. The Seminar is a key moment each week to develop a community of inquiry amongst peers.	N		SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student; Credit is allowed for only DCE 591 (2nd Yr Seminar) or DCE 670
DCE	671	Graduate Second-Yr Seminar II	The Second-Year Graduate Seminar is part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N		SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): COE 501 or DCI 510 with B or better
DCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student

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DCI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
DCI	707	Proposal Writing	Covers proposal writing for students seeking funding to support scholarly initiatives across research designs and methods.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): COE 503; Credit is allowed for only DCI 707 or DCI 791 (Proposal Writing - Seminar) or DCI 791 (SchlrlyPractices Smnr: Proposal Writing)
DCI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DNP	601	Theoretical Foundations	Examines philosophical foundations of advanced nursing practice by analyzing interrelationships among theory, philosophy, practice, and research.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	602	Evaluating Research Practice	Provides opportunities for graduate students to develop the knowledge and skills to critically analyze scientific literature and research for application to practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	603	HealthEquitySocialJustice	Focuses on the application of theories related to social justice and knowledge of social determinants of health to the role of the graduate prepared nurse for the purpose of advocating for health equity and creating innovative methods of addressing social injustices to improve health outcomes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to graduate Nursing program

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DNP	604	Pathophysiology/Lifespan	Core course focuses on human pathophysiology and concepts of genetics for advance practice nursing.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS
DNP	605	Health Assessment Lifespan	Advanced health assessment skills, including history-taking strategies and physical, functional, developmental, and psychosocial assessment.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Adv Nurs Prac (AcuteCare or Adt-Geron) or Fam NP or Fam Psy Mntl Hlth or Pediatric NP or Wmn's Hlth NP stdnt or Acute Care Ped NP or Adt Geron NP or Fam NP or Famp Psychi Mntl Hlth NP or Pediatric NP or Wmn's Hlth NP Cert
DNP	606	Principles Peds Acute Care I	Provides the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 607
DNP	607	AdvPeds Acute Care Practicum I	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 606
DNP	608	Pharmacotherapeutics Lifespan	For advanced practice nurses, expands theoretical and evidence-based knowledge and promotes synthesis of pharmacotherapeutic concepts and principles across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Family NP cert, Fam Psych Mntl Hlth NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Pract) MS or Nursing (Nursing Ed) MS student
DNP	609	Advanced Practice Nursing Role	Focuses on the examination and implementation of the advanced practice nursing (APN) role. Presents historical and contemporary social and political influences on the development and implementation of the APN role and the circumstances prompting the movement of education for advanced practice to the doctoral level. Emphasizes the analysis of the role the APN and the Doctor of Nursing Practice prepared provider within the greater health care system. Explores issues and challenges related to advanced practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Doctor of Nursing Practice student
DNP	610	PrinciplesAdvEmergencyNursingI	Students acquire knowledge that is relevant to the management of common medical emergencies and management of patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 633; Corequisite(s): DNP 611
DNP	611	ENP Practicum I	Demonstrates management strategies and applies selected practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 633; Corequisite(s): DNP 610
DNP	612	Pediatric Palliative Care	Examines research, theory and principles for end of life and palliative care in infants, children, adolescents and young adults (birth to age 21 years).	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	613	Women's Health Promotion I	Didactic course focuses on theories of health behavior, health promotion, disease prevention and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Women's Health DNP student; DNP 602 with B or better; Corequisite(s): DNP 614

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DNP	614	Women's Health Practicum I	Clinical assessment and education of women across the lifespan for the purposes of health promotion and disease prevention.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 613
DNP	615	Mgmt Women's Health Problems	Focuses on management of nursing care for high-risk perinatal women and women with common health problems.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 616
DNP	616	Women's Health Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 615
DNP	617	Mgt Complex&Chronic Disease Wm	Didactic course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health status across the lifespan and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 618
DNP	618	Womens Health Practicum III	Clinical course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health states across the lifespan and patient education.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 617
DNP	619	Principles Peds Acute Care II	Continues to provide the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 620
DNP	620	AdvPedsAcuteCarePracticumII	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 619
DNP	621	Health Assessment Skills	Skill-based course focuses on advanced clinical skills including suturing, splinting, x-ray, ECG and advanced lab interpretation.	N	LEL	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): DNP 605
DNP	623	Adult Gero Health Promotion	Introduces adult-gerontology health promotion and disease prevention emphasizing principles of evidence-based practice in clinical and community settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 605; Corequisite(s): DNP 624
DNP	624	Adult Gero Hth Promo Practicum	Clinical practicum designed to apply principles of evidence-based practice in health promotion and disease prevention in clinical and community settings.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 623
DNP	625	Mgmt Common Prob Adult-Geron	Focuses on the theory, research and application of evidence-based practice in the care of adolescents, adults and older adults with common health alterations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 623; Corequisite(s): DNP 626
DNP	626	Adult-Geron Common Prob: Pract	Clinical practicum applies principles of evidence-based practice in primary care management of adolescents, adults and older adults with common health alterations.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 623; Corequisite(s): DNP 625
DNP	627	Mgm Complex Adult-Geron:Theory	Focuses on theory, research and application of evidence-based practice in care of adolescents, adults and older adults with complex health alterations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 625; Corequisite(s): DNP 628
DNP	628	Mgmt Complex Adult-Geron:Pract	Clinical practicum applies principles of evidence-based practice in primary care management of adolescents, adults and older adults with complex health alterations.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 626; Corequisite(s): DNP 627
DNP	630	PrinciplesAdvEmergencyNursell	Students acquire advanced knowledge that is relevant to common medical and traumatic emergencies. Focuses on preparing the student to implement the role of the advanced practice emergency nurse. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 610; Corequisite(s): DNP 631
DNP	631	ENP Practicum II	Demonstrate advanced management strategies and applies advanced practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 610; Corequisite(s): DNP 630
DNP	633	Family Health Promotion	Focuses on concepts and strategies to promote, manage, and maintain health of children, adults, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 634
DNP	634	Family Promotion Practicum	Clinical application of theories, concepts, and principles in the care of children.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: Advanced Nursing Practice (Family Nurse Practitioner) major; Co-requisite: DNP 633

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DNP	635	CommonFamilyHealthProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of acute and common health problems in family practice across the life span.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 636
DNP	636	CommonFamilyPracticum	Clinical application of theories, concepts, and research related to the management of acute and common problems in family practice across the lifespan.	N		PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 635
DNP	637	ComplexChronicFamilyProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of complex and chronic problems in family practice across the lifespan.	N		SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 638
DNP	638	ComplexChronicFamilyPracticum	Clinical application of theories, concepts, and research related to the management of complex and chronic problems in family practice across the life span for Family Nurse Practitioner role specialty.	N		PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 637
DNP	640	Adv Human Pathophys Pediatrics	Didactic course for pediatric nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in pediatric patients.	N		SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner)
DNP	641	Health Assessment Peds	Skills-based advanced health assessment course that includes history-taking strategies and physical, functional, developmental, psychosocial health assessment of children (birth-21).	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner certificate
DNP	642	Pharmacology Pediatric	Applies evidence-based pharmacotherapeutic principles to disease treatment and health promotion and maintenance for pediatric patients.	N		SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate
DNP	643	Pediatric Well Child	Offers information for theory-based developmental care of well children. Includes anticipatory guidance for parents and/or children/teens.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate; Corequisite(s): DNP 644
DNP	644	Well Child Practicum	Clinical application of theories, concepts and principles as they relate to the developmentally based care of the well child.	N		PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner graduate certificate student; Corequisite(s): DNP 643
DNP	645	Common Problems Pediatrics	Provides health promotion and disease prevention strategies for the advanced nursing care of all children and families.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 646
DNP	646	Common Problems Peds Practicum	Facilitates development of advanced clinical skills in the assessment and management of child health, health surveillance and promotion.	N		PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 645
DNP	647	Complex Problems Pediatrics	Third pediatric didactic course focuses on assessment and management of childhood complex and chronic health problems and special health conditions.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 648
DNP	648	Complex Chronic Peds Practicum	Clinical course assists students in developing advanced clinical skills in decision making with chronically ill or special needs pediatric patients.	N		PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 647
DNP	649	Adv Phys	Focuses on integrating the structure and function, including the molecular and cellular levels, that are vital to the overall functioning of the human across the lifespan. It is highly encouraged that students taking this course have a basic understanding of physiological principles to be able to learn advanced concepts covered in this course. It serves as an important fundamental foundation required for advanced practice providers and helps support students in their progression into advanced pathophysiology and clinical specialty course work. Examines the complex interactions of multiple body systems in helping to maintain homeostasis and proper body functioning to promote a foundation for health. Uses clinical scenarios to promote innovative ways to integrate the complex physiological concepts.	N		SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner certificate student
DNP	650	Adv Human Pathophys Neonates	Didactic course for neonatal nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in neonatal patients.	N		SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
DNP	651	Health Assessment Neonatal	Skill-based course focuses on advanced health assessment skills, including history-taking strategies and the physical, functional, genetic, developmental, and psychosocial/cultural health assessment of neonates.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Neonatal Nurse Practitioner) DNP
DNP	652	Neonatal Pharmacotherapeutics	Focuses on the application of knowledge of pharmacological principles in the treatment of diseases and promotion of health for neonates and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	653	Dev Fam Health Promo: Neonatal	Concepts, theories, interventions, and research related to the promotion, management, and maintenance of physical, behavioral, and developmental needs of at-risk newborns and infants and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 654
DNP	654	Neonatal Practicum I	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 653
DNP	655	Mgmt Common Neonatal Problems	Proactive neonatal theory course focusing on the concepts, theories, and research related to acute and chronic health deviations of neonates and infants.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner) Co-requisite: DNP 656
DNP	656	Neonatal Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 655
DNP	657	Management of Complex Neonates	Examines the application of knowledge of complex, multi-system alterations in neonatal health from a theoretical and research perspective in preparation for clinical practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	658	Neonatal Practicum III	Develops and applies advanced neonatal assessment, clinical decision making, and management skills to complex health alterations in at-risk neonates to include cultural, ethical, legal, and advocacy issues.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 657
DNP	659	Embryology and Genetics	Prepares advanced practice nurses to use embryology, genetics, and physiology concepts within the nursing process in the care of pediatric and neonatal patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Pediatric NP, or Women's Health NP) DNP student
DNP	660	Neuropsychopathology Lifespan	Manifestations of altered neurophysiology and psychopathology over the lifespan. Uses evidence-based support for theoretical views of psychiatric disorders to analyze the relationships of neuropsychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Child and Adolescent Mental Health Intervention or Family Psychiatric and Mental Health Nurse Practitioner
DNP	661	EthicsAdvancedNursingPractice	Focuses on the ethical implications in the role of the advanced practice nurse and provides information on ethics and how professional and personal values relate to advanced nursing practice. This course meets the Essentials of Doctoral Education as defined by the American Association of Colleges of Nursing (AACN).	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice graduate student
DNP	671	Adv Mental Health Assessment	Focuses on comprehensive mental health assessment of psychiatric disorders occurring in children, adolescents, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner
DNP	672	Psychopharmacology Lifespan	Focuses on evidence-based use of medications for mental health disorders across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner
DNP	673	MH Promotion Lifespan	Focuses on evidence-based interventions to promote mental health across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Psych & Mental Health Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 674
DNP	674	MH Promotion Practicum	Clinical experiences to become skilled in assessment and evidence-based individual intervention of mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 673

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DNP	675	Common MH Disorders	Emphasizes the assessment and evidence-based management of common mental health disorders across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner Co-requisite: DNP 676
DNP	676	Common MH Disorders Practicum	Clinical experiences necessary to become skilled in the assessment and evidence-based management of the most common mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Corequisite: DNP 673
DNP	677	Complex MH Lifespan	Focuses on modalities of evidence-based treatment with children, adolescents, adults, and families with complex and/or chronic psychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 678
DNP	678	Complex MH Practicum	Clinical experiences in the assessment and evidence-based management of the most complex and chronic mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co- requisite: DNP 677
DNP	679	BiostatPrincipleStatsInference	Examines principles of statistical inference and their application to the analysis and interpretation of epidemiological, psychosocial, medical, nursing, and healthcare data.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing graduate student
DNP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	682	Geriatric Health Promotion	Examines theoretical perspectives in aging and cultural and contextual approaches for health promotion in older adults.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688
DNP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
DNP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	703	Scholarly Writing	Provides a review of principles of scholarly and professional writing, plagiarism and APA 6th edition format.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Doctor of Nursing Practice student
DNP	704	Principles Evidence Based-Care	Foundational course focuses on the evidence-based process and understanding of evidence-based practice principles assist advanced practice nurses and other healthcare professionals in clinical decision making in order to provide best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: Doctor of Nursing Practice student
DNP	705	Health Care Outcomes Mgmt	Outcomes management methodology supports implementation of evidence-based practice and measurement of both patient and health care system outcomes attributed to adoption of best practices.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student; DNP 704
DNP	707	Disseminating Evidence	Focuses on methods for dissemination of evidence to advance best practice within local, regional, and/or national settings, as well as advancement of EBP in health policy and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 705

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DNP	708	Systems Thinking Complex Hlthcr E	Studies basic and advanced systems principles as they relate innovation to the American healthcare system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	709	Individual & Innov Ldrshp Hlth	Introduces the role of the innovator, including the essential behaviors of risk taking, managing workload, and addressing the challenges of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	710	ClinPerspectBiomedDeviceDesign	Examines clinical perspectives on principles of biomedical device design, including interprofessional engagement with engineering and regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	711	Healthcare Policy & Innovation	Introduces the political, organizational, and economic dimensions of healthcare policy with emphasis on strategies for innovative policy and practice.	N	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	712	Clinical Residency&Management	Demonstrates DNP competencies through portfolio documentation of clinical learning experiences and implementation of the DNP Evidence-Based Clinical Applied Project. Doctoral students submit the DNP Portfolio in partial fulfillment of the degree.	N	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Doctor of Nursing Practice student
DNP	713	Org Cultures in Health Care	Analyzes culture, organizational implications and relationships to change and innovation in health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice (AcuteCare or Adult-Gerontology or Advanced NP or Family NP or Family Psychiatric Mental Health or Innovation Leadership or Pediatric NP or Women's Health NP) student
DNP	714	Prof Relationship in Healthca	Analyzes professional relationships within healthcare organizations and evidence-based strategies to improve communication, coordination, and collaboration.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Innovation Leadership, Pediatric NP, or Women's Health NP) DNP student
DNP	715	Dynamic Info in Health Care	Analyzes and applies multiple sources of information for health care leaders across the continuum of evidence including research, evidence-based practice, translational research, improvement science and quality improvement.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP student
DNP	716	Innov Leadership Health Care	Analyzes leadership theories in the creation of complex health care system innovation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Advanced Nursing Practice DNP student or Advanced Nursing Practice (Innovation Leadership) DNP student
DSC	100	ASU Design Experience	Covers ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	REC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): BS, BSD or BS/BA Design School major. Credit is allowed for only DSC 100 or 194 (ASU Design Experience) OR Visiting University Student
DSC	101	Design Awareness	Surveys cultural, global, and historical context for the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	
DSC	102	Introduction to Design	Introduces design, with an emphasis on understanding the process and principles by which design shapes our world.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
DSC	236	Intro to Computer Modeling	Computers in design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Industrial Design major; passed milestone OR Visiting University Student
DSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
DSC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design or PhD in Environmental Design & Planning student
DSC	501	Qualitative Research in Design	Theory and application of qualitative research. Emphasizes using ethnography to identify and specify innovative concepts and strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design major
DSC	520	Contemporary Design Issues	Issues influencing contemporary design such as sustainability, globalization, education, gender, collaboration and emotion.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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DSC	530	Basic Modeling Techniques	Demonstrates how to create efficient repeatable and safe operations utilizing power tools. Instruction on basic principles of woodworking, material selection, re-saw, dimensioning, tool selection. Emphasizes cut lists, planning parts, basic tool knowledge, measuring and marking, and joinery.	N		LAB	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Design School graduate student; Credit is allowed for only DSC 530 or DSC 494 (Basic Model Making Techniques) or DSC 598 (Basic Model Making Techniques)
DSC	531	Basic Mold Making and Casting	Explores basic knowledge on mold making and cold casting. Emphasizes material selection, planning, form-making and project planning. Requires students to execute two molds using appropriate techniques and methods.	N		LAB	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Design School graduate student; Credit is only allowed for DSC 531 or DSC 598 (Cold Casting and Mold Making)
DSC	540	Biomimicry in Design	Explores and applies the biomimicry thinking framework in the field of design in order to arrive at sustainable design solutions that create conditions conducive to all life. Through hands-on activities, games, workshops, lectures, field trips, outdoor adventures, discussions, assignments and readings, introduces students to the biomimicry thinking methodology that helps find sustainable solutions to current problems found at various scales within any design disciplines.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts School masters student; Credit is allowed for only DSC 494 (Biomimicry in Design) or DSC 540 or DSC 598 (Biomimicry in Design)
DSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design student
DSC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD or Design (Inter Design) MSD student
DSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
DSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design, Master of Interior Architecture, Master of Science in Design, or Master of Visual Communication Design major
DSC	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		IND	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DST	101	Intro to Disability Studies	Provides an introduction to key concepts, methods, questions and themes in the field of disability studies, including an overview of the focused, unequal treatment experienced by people with disabilities. There are economic, political, social and cultural factors that should be considered by a society which normally addresses disabled bodies through medical frameworks. Debates ethical questions concerning genetic testing, selective abortion and disability therapies. Discusses how social inequalities of class, race, nationality, sexuality and gender relate to the experiences of the disabled.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	
DST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
DST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	322	Implications of Disability	There are many types of disability, and oppression results from the socially constructed definition of disability. Provides a careful review of the many forms of disability, considering functional restrictions created within society and the impact of cultural limitations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
DST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	458	Disability & Comm Advocacy	Disability advocacy historically and in the contemporary context. Historical and legal approaches to disability advocacy helps frame students' interrogation of contemporary disability advocacy issues and movements. Addresses disability advocacy issues including questions about the meaning of disability, the ends and forms of advocacy, and the politics of dis/ability. Emphasizes the communication practices that have constructed and debated the meanings, ethics and ends of disability advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 2.00 GPA
DST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
DST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
DST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
DST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
ECD	211	Dev Child: Thry/Prac Pre-Grd3	Examines process of physical, social, emotional, cognitive, language, and literacy development of young children; includes observation, practical application, fieldwork.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ECD	220	Intro to Nutrition, Hlth&Safety	Emphasizes providing proper nutrition, promoting a safe but challenging learning environment, and becoming knowledgeable of a child's health status. Also covers practical applications for assisting young children to develop good habits and attitudes and to assume lifelong responsibility for their own well-being.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
ECD	302	Found of Early Childhood Educ	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	310	Appl Early Child Development	Conveys knowledge of how development is both unique and interconnected. Takes a highly applied approach to build participants' knowledge, recognition and use of evidence-based practices within preschool classrooms that support children's development, both within and across domains. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	312	Social/Emotnl Fndtns of Learn	Foundations of early social development and evidence-based practices for promoting social-emotional development; young children's understanding, interactions, and relationships to the social world.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	313	Technology in Early Child Ed	Evaluates technology and technological learning tools for early childhood classrooms; integrates technology and its tools into students' learning. Lecture, discussion, active participation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	315	Classm Orgnztn/Gdnce Yng Chld	Theories and strategies to guide children's development toward becoming self governing; typical and atypical behaviors; implementing age-appropriate classroom management techniques that foster individual, social, and academic competence.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	316	Teacher Rsrch:Studyng Children	Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	321	Emerging Language and Literacy	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
ECD	322	Cog Gen Knwldg Sci Mth Lgc Rsn	Increases students' knowledge of and ability to implement high-quality strategies that support the development of children's mathematical, scientific and logical reasoning in developmentally appropriate ways. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	323	Bldng Home/Schl/Cmmnty Prtnrs	Knowledge and skills to facilitate positive and continuous family-school partnerships; family background, social context, family involvement, and current research on family-school interaction and academic success.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
ECD	324	Social Studies/Creative Arts	Social studies and creative arts standards, curriculum, and instructional and assessment strategies in an integrated social studies and creative expression curriculum for children birth through grade 3.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	325	Support Dual Language Learners	Increases students' knowledge of the language development of Dual Language Learners (DLLs), the role of home language in assessment and instruction, as well as knowledge and application of instructional practices to support DLLs' oral language and emergent literacy practices. Students design and implement activities for working with young children who are DLLs and their families. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): ECS 321
ECD	327	Becoming a Teacher Leader	Explores the perspective that effective early childhood professionals are self-aware, culturally competent leaders who practice ongoing reflection and growth. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	341	Admnstrtn/Evltn of EC Prgms	Administration and evaluation of early childhood programs. Emphasizes planning and evaluation; regulations; health, nutrition, and safety; operations, budgeting, and supervision of personnel.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ECD	396	Student Teaching: ECD Birth-5	Student teaching in early childhood education classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECD	406	Assessment: Birth-Grade 3	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	416	Soc&Ed Policies Affect Child&Fam	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links between policy, educational practice, schools, and family functioning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	417	Arts Integr Young Children	Provides a foundation for understanding young children's creativity and research-based perspectives for incorporating arts-based components such as drama, movement, dance, music, play and visual arts in education for young children. Further provides developmentally appropriate instructional methods and strategies to promote interdisciplinary learning with creative arts curriculum and inquiry learning, as well as instructional and assessment strategies for preprimary and primary-level children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): minimum junior standing OR Visiting University Student
ECD	418	Inst. Methods for Young Child	Develops integrated experiences with children's literature for facilitating development in reading, writing, speaking, and listening. Further develops educational strategies for promoting growth in the social studies and creative arts curriculum, and instructional/assessment strategies for preprimary- and primary-level children; developmentally appropriate methods and strategies for effective instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	476	Intentional Teaching	Guides teachers in becoming intentional practitioners through: observation, assessment, purposeful planning and reflective practice to adapt a variety of supports for children in order to maximize student potential and outcomes. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
ECD	477	Student Teaching Birth - PreK	Supervised practicum in a birth to pre-K program.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4-6		Prerequisite(s): admission to the Professional Program
ECD	478	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-9		Prerequisite(s): admission to the Professional Program
ECD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): admission to the Professional Program
ECD	503	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
ECD	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
ECD	505	Foundations Early Childhood Ed	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	520	Child Guidance	Introductory exploration of a variety of techniques for developing a positive classroom environment. Includes overview of several classroom and school management programs and possible effects of implementation. Focuses on observations made during the students' classroom and field experiences. Provides the catalyst for introducing students to the program's professional portfolio requirement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	525	Emergent Literacy	Examines current and classic research on oral language and literacy development and effective strategies for teaching language and literacy from birth through kindergarten, including phonemic awareness and alphabet instruction and beginning decoding.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 525 or RDG 525
ECD	526	Integrated Literacy	Examines current and classic research on language and literacy development and effective strategies for teaching and assessing language and literacy from kindergarten through third grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	527	Math in Early Childhood Educ	Explores methods of teaching and assessing mathematical skills and reasoning in children ages birth through third grade along with the broader impact of math literacy in young children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ECD	541	Assessment of Young Children	Assessment principles, techniques, and issues related to guiding learning for children birth through eight years. Test construction, interpretation and communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	549	Found Div, Human Dev & Child	Psychology of learning and instruction, including the foundations of learning theories and their application to educational practice with an emphasis on diversity, multidirectional human change and cultural embeddedness.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	565	Instructional Methods ECD	Surveys appropriate teaching methodologies for young children across the curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	567	Clinical Experience: ECD	Applies course content in early childhood education preschool classrooms birth to age 5: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	576	Clinical Experience: ECD K-3	Applies course content in early childhood education classrooms grades K-3: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	577	Practicum: Early Childhood	Student teaching in early childhood education classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	578	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECN	211	Macroeconomic Principles	Basic macroeconomic analysis. Economic institutions and factors determining income levels, price levels, and employment levels.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	212	Microeconomic Principles	Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	213	Honors Macroeconomics	Introduces modern macroeconomic analysis. Theory of national income, unemployment, inflation, and economic growth and its application to economic policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; MAT 210, 211, 270, or 271 with C or better; Credit is allowed for only ECN 213 or ECN 313
ECN	214	Honors Microeconomics	Introduces modern microeconomic analysis. Theories of consumer behavior, production and cost. Output and price determination in a variety of market settings.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 211 or 271 with C or better if completed; Credit is allowed for only ECN 214 or ECN 312
ECN	221	Business Statistics	Introduces methods of statistical description, inference, probability, sampling, hypothesis testing and regression analysis with focus on business application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ECN 221 or ECN 231 OR Visiting University Student
ECN	231	Honors Business Statistics	Applies statistical methods used in business and economic modeling and research. Emphasizes regression analysis and modeling.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): Barrett Honors student; MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ECN 221 or ECN 231
ECN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 210, 211, 270, 271, or 272 with C or better if completed
ECN	306	Survey International Economics	Surveys international trade issues, commercial policy, trade theory, customs unions, and international monetary topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student

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ECN	312	Intermed Microecon Theory	Expands on models covered in principles. Models consumer and producer choice, market structure and welfare.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 with C or better; MAT 211, 266, or 271 with C or better; Credit is allowed for only ECN 214 or ECN 312 OR Visiting University Student
ECN	313	Intermed Macroeconomic Theory	Expands on topics covered in principles. Emphasizes models of growth, employment, economic fluctuations, monetary and fiscal policy.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Credit is allowed for only ECN 213 or ECN 313 OR Visiting University Student
ECN	315	Money & Banking	Functions of money. Monetary systems, credit functions, banking practices, and central banking policy.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	331	Economics European Econ Union	Examines broad economic policies seeking to influence individuals' decisions, the history of European economic development and policies, as well as institutions and social systems.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better
ECN	335	South Asia & the World Economy	Develops and discusses alternative theories of trade, development, and growth in the context of south Asia and the world economy.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211, 266, or 271 with C or better
ECN	342	Sports Economics	Applies microeconomic concepts of competitive and imperfectly competitive markets, collective bargaining, antitrust issues and public finance to the sports industry.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better; Credit is allowed for only ECN 342 or ECN 394 (Economics of Sport) OR Visiting University Student
ECN	345	Env & Resouce Economics	Economic principles applied to private and public policy decisions involving environmental resources, natural resource management, and policy analyses. Focuses on how economic methods can contribute to making better environmental decisions.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	355	Economics of Healthcare	Uses economic tools and models to discuss and evaluate the American healthcare system. Applies standard concepts in microeconomics, macroeconomics, and public choice economics to the study of the evolution and the current state of the healthcare system and to the study of proposals for change. Focuses on the promise and problems of using economic tools in a historical, ethical, and cultural context to understand the current healthcare system.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better OR Visiting University Student
ECN	360	Economic Development	Theories of economic growth and development. Role of capital formation, technological innovation, population, and resource development in economic growth.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	365	Economic Russia/Eastern Europe	Origins and analysis of contemporary institutions. Comparative development and differentiation in the 20th century.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	382	Managerial Economics	Applies economic analysis to managerial decision making. Market analysis in the context of the socio-legal environment. Does not satisfy Economics major requirements.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: Not open to Economics or Business majors. Minimum 2.0 ASU cumulative GPA and minimum of 56 total earned hours OR Non-degree student with minimum 2.0 ASU cum GPA OR Graduate student.
ECN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	404	History of Economic Thought	Development of economic doctrines, theories of mercantilism, physiocracy, classicism, neoclassicism, Marxism, and contemporary economics.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313
ECN	410	Applied Regression Analysis	Applies regression techniques to forecasting in business and institutional environments.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student
ECN	411	Analysis of the U.S. Economy	Studies the major data releases used by economists to track the U.S. economy. Emphasizes how these data are used and their connection to macroeconomic theory.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 411 or ECN 494 (Contemporary Topics in Macroeconomics)

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ECN	413	Advanced Honors Macroeconomics	Develops and uses various macroeconomic models to evaluate important economic policies. Emphasizes honing students' policy evaluation skills.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	414	Advanced Honors Microeconomics	Develops and uses various microeconomic models to evaluate important economic issues. Emphasizes the economics of uncertainty and information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 with C or better if completed
ECN	416	Game Theory&Economic Behavior	Introduces game theory and its application to various economic situations under conditions of complete and incomplete information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	421	Labor Economics	Labor supply and demand, unemployment, determinants of wages, earnings inequality, labor unions and the structure of labor contracts.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 with C or better if completed OR Visiting University Student
ECN	423	Economics of Education	Focuses on educational decisions, including individual choices, institutional strategies and government policies. Topics include measuring the costs and returns of education, the relationship between education and inequality, and the role of K-12 and postsecondary institutions in economic growth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 423 or 494 (Economics of Education)
ECN	425	Introduction to Econometrics	Elements of regression analysis: estimation, hypothesis tests, prediction. Emphasizes use of econometric results in assessment of economic theories.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student
ECN	436	International Trade Theory	Comparative-advantage doctrine, including practices under varying commercial policy approaches. Economic impact of international disequilibrium.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	438	Internat/ Monetary Economics	History, theory, and policy of international monetary economics. Balance of payments and exchange rates. International financial markets, including Eurocurrency markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	441	Public Economics	Public goods, externalities, voting models, public expenditures, taxation, and budget formation with emphasis on the federal government.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	445	Environmental Economics	Advanced topics in environmental economics with quantitative methods for developing information that is used for environmental policy making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	453	Industrial Org/Compete Policy	Development of public policies toward business. Antitrust activity. Economic effects of government policies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better OR Visiting University Student
ECN	455	Health Economics	Focuses on health care decisions, including individual and government policies. Topics include demand for and supply of health care, payment for health care, the impact of health care reform and the techniques economists use to evaluate health care interventions.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	470	Mathematical Economics	Integrates economic analysis and mathematical methods into a comprehensive body of knowledge within contemporary economic theory.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better
ECN	475	Capstone in Economics	Capstone course integrating several areas of economics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better; minimum senior standing
ECN	479	Experiments in Economics	Experiments on risk and time preferences, trust, collective action, social preferences and norms, gender, information, discrimination and market behavior.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; ECN 425 with C or better; Credit is allowed for only ECN 479 or ECN 494 (Experiments in Economics)
ECN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): minimum 3.0 GPA; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-6		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ECN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Economics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite: ECN 213 or 313 OR Visiting University Student
ECN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Economics	1-3		
ECN	502	Managerial Economics	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost, and pricing. Evaluates competitive strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	2-4		Prerequisite(s): W. P. Carey MBA student; Credit is allowed for only ECN 502 or FIN 535
ECN	503	Global Business Environment	Macroeconomic analysis of issues related to economic growth, inflation, interest rates behavior, unemployment, exchange rate determination, and global competitiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): W. P. Carey MBA student
ECN	504	Fundamentals Managerial Econ	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost and pricing. Evaluates competitive strategies. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree-seeking graduate student
ECN	510	Microeconomic Theory/Applicatn	Applies economic theory to production, consumer demand, exchange, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	2-4		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	525	Applied Regression Models	Simple linear regression, multiple regression, indicator variables, and logistic regression. Emphasizes business and economic applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	527	Categorical Data Analysis	Discrete data analysis in business research. Multidimensional contingency tables and other discrete models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: ECN 525
ECN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	711	Macroeconomic Analysis I	Current theories of output, employment, inflation, and asset prices as well as major aggregates. Introduces dynamic optimization techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	712	Microeconomic Analysis I	Theory of production, consumer demand, resource use, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	713	Macroeconomic Analysis II	Focuses on growth theory, dynamic general equilibrium models, monetary theory, open-economy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	714	Microeconomic Analysis II	General equilibrium, welfare economics, production, and capital theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student

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ECN	715	Adv Macroeconomic Analysis	Focuses on current research areas in macroeconomics and monetary theory with emphasis on methods in economic dynamics and numerical techniques.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C or better; ECN 713 with C+ or better
ECN	716	Advanced Economic Theory I	Economic behavior under uncertainty; markets and contracts under asymmetric information; the theory of games with incomplete information and applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 714 with C or better; ECN 712 with C+ or better
ECN	717	International Macroeconomics	Intertemporal approach to the current account, international business cycles, international risksharing and home bias, models of exchange rate determination, balance of payment crises, sovereign debt and default.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	721	Labor Economics I	Develops basic theoretical models for analyzing labor market issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	722	Labor Economics II	Extensions/criticisms of labor market theories. Applications to a variety of policy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 721 with C or better
ECN	725	Econometrics I	Problems in the formulation of econometric models. Emphasizes estimation, hypothesis testing, and forecast of general linear models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	726	Econometrics II	Estimation and inference of qualitative and limited dependent variable models as well as general multiple equation models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 725 with C+ or better
ECN	727	Quantitative Methods Economics	Generalized method of moment estimation, estimation with censored and truncated samples, nonlinear models, panel-data models, econometrics of nonstationarities.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	736	International Trade Theory	Theories of comparative advantage and their empirical verification. Theory and political economy of commercial policy. Resource transfers and the role of the multinational corporation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	741	Public Economics	Economics of collective action, public spending, taxation, and politics. Impact of central governmental activity on resource allocation and income distribution.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree-seeking graduate students; ECN 712 with B or better; Corequisite(s): ECN 714
ECN	753	Industrial Organization	Analyzes structure, conduct, and performance in industrial markets; the economics of organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	760	Economics Growth/Development	Economic problems, issues, and policy decisions facing the developing nations of the world.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C+ or better; ECN 712 with C+ or better; Corequisite(s): ECN 713; ECN 714
ECN	770	Mathematics for Economists	Surveys mathematical ideas encountered in economics and econometrics. Topics include measure theory, probability theory, and mathematical statistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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ECN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ECS	310	Found Typic/Atypical Child Dev	Examines the process of typical and atypical physical, social, emotional, cognitive, and language development of young children with or at risk for delay.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	312	Soc and Em Devpt of Yng Child	Examines genetic, environmental and biological influences on typical and atypical social and emotional developmental processes through current research, current issues, as well as connections to practice.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): Professional Teacher Preparation Program student OR Educational Studies BAE student; minimum junior standing OR Early Childhood minor OR Educational Studies minor OR Visiting University Student
ECS	315	Classroom Org & Child Guidance	Develops and implements analysis, intervention, and consultation strategies for effective management of classroom behavior for students with and without disabilities. Age-appropriate techniques addressing individual, social, and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	316	Assessment/Evidence-based Prac	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments. Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	321	Comm, Lang Dev and Emerg Lit	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
ECS	340	Creative Curriculum ECD	Provides an overview of research and curricular strategies for preschool classrooms, including best practices for classroom design, management, scheduling and lesson development. A comprehensive, research-based curriculum that features exploration and discovery as a way of learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
ECS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
ECS	397	Student Teaching: Inclsve ECD	Student teaching in early childhood education inclusive classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECS	411	IMYC: STEM	Explores, applies and integrates STEM (Science, Technology, Engineering and Math) content, project-enhanced instructional strategies and assessments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	412	Math Curriculum/Instrctn/As	Focuses on math content, methods, skills, and attitudes to be considered in teaching young children. Examines the theoretical foundation for young children's inquiry and learning. Methods focus on practical application of theory in classroom practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	413	Literacy Curriculum/Instrct/As	Extends ECD 321; language and literacy development in K-3 classrooms; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
ECS	420	Eval & Interv Strateg Disabil	Students will learn to screen, assess and provide services to young children with special needs using norm-referenced, criterion-referenced, and formative assessments to determine special education eligibility, plan individualized family service programs, and monitor progress for eligible students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	427	Highly Indiv Teach Learn	Covers evidence-based research and practices for fostering the social emotional, cognitive and motor development of young children with varying needs and abilities in inclusive settings. Students learn to individualize instructional strategies, design learning environments with appropriate accommodations and adaptations, and understand Individual Education Plans (IEPs) and/or Individual Family Service Plans (IFSPs). In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours

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ECS	430	Sys Pol Advoc in ECD/SPE	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links among policy, educational practice, schools, and family functioning that have a direct impact on both typical and special needs children in early childhood programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
ECS	431	Fam Com & Prof Support Syst	Covers methods and issues in cooperative teaching for special education students in general education classrooms, with an emphasis on collaborative communication skills for working with a variety of school professionals and families.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Professional Teacher Preparation Program or enrolled in Educational Studies program or enrolled in Early Childhood minor
ECS	478	Student Teaching: SPE K-3	Student teaching in early childhood education inclusive classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): admission to the Professional Program
EDA	501	Competency/Perform Educ Adm	Nature of educational administration and the concept of competency as it applies to educational administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	505	American Education System	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	511	School Law	Interpreting state and federal law and policy in school settings. Includes statutory authority for administrators, liability, constitutional rights, law, and ethics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	514	Leadership in Curric/Assessmnt	Curriculum and assessment responsibilities of school administrators.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	526	Instructional Supervision	Administering curriculum improvement, in-service education, evaluating, and improving teaching competence; administrative instructional responsibilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	548	Sch, Family/Comm Connections	Administrative factors of primary importance in developing community involvement in public schools. Emphasizes theory and skill of school system and individual communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	572	School Finance&Human Resources	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and school financial affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	578	Critical Iss/Educ Leadership	Explores current critical issues in school leadership, including student support and relationships with governmental agencies and the community.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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EDA	611	Educational Policy and the Law	Emphasizes policy analysis and application of federal and state law to policy evaluation and development in public schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	634	Instructional Leadership	Theory, practice, and issues in school change and reform with a focus on leading change efforts at the school site.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	676	The School Superintendency	Critical examination of the school superintendency and the primary functions of this educational position. Includes the duties, responsibilities, activities, and problems of the school superintendent. Examines the unique leadership role of the school superintendent.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	679	Admin Special Programs in Educ	For personnel administering special education and federal programs; responsibilities of principals, supervisors, counselors, and directors for special education and federally funded programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	685	Education in Global Contexts	Global perspectives on education in contemporary society with emphasis on social, political, and economic factors that affect access and equity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-6		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	701	Advanced Quantitative Methods	Data collection, analysis, interpretation in studies using quantitative methods of inquiry situated in action research, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation ED student; Credit is allowed for only EDA 701 or TEL 701
EDA	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation Ed student; Credit is allowed for only EDA 702 or TEL 702
EDA	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation ED student; Credit is allowed for only EDA 703 or TEL 703
EDA	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation ED student; Credit is allowed for only EDA 704 or TEL 704
EDA	772	School District HR&Bus Mgmt	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and business affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	773	Sup&Sch Dist Ldrshp Roles&Rsp	Examines management roles and responsibilities of public school district superintendents and other leaders in identifying and addressing critical issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EDA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	310	Ed Psychology for Non-Teachers	Human behavior in educational situations. Individual differences, factors affecting learning, behavioral and cognitive learning, motivation, testing, and assessment.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6	SB	
EDP	311	Ed Psych for Future Teachers	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3	SB	Prerequisite(s): Teachers College major, minor or certificate student OR Visiting University Student
EDP	313	Childhood and Adolescence	Principles underlying total development of pre- and early-adolescent children. Emphasizes physical, intellectual, social, and emotional development with practical implications for teachers. Meets ADE requirement for one course in early adolescent psychology for middle grade endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
EDP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EDP	454	Statistical Data Analysis Educ	Role of data analysis in research and decision making. Elements of exploratory data analysis, descriptive indexes, and statistical inference.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	
EDP	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
EDP	510	Psychology in Education	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	514	Psychology of the Adolescent	Cognitive, physical, and social development of adolescents in contemporary society. Impact of family, school, and workplace on adolescent development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	540	LearningTheories&InstrctStratg	Studies grounded instructional strategies rooted in established theories of learning to form the basis of building instruction. Explores how teaching, learning and performing can be designed via technological environments to support instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only EDP 540 or LSE 540
EDP	552	Multi Regression/Correlatn Mth	Educational applications of regression techniques. Quantitative and qualitative predictors, curvilinear trends, and interactions. Emphasizes analyzing data and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	554	Analysis-of-Variance Methods	Educational applications of ANOVA techniques. Between- and within-subjects designs, multiple comparisons. Emphasizes using statistical software and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	597	Applied Research & Reflection	The dual purpose of the project is to synthesize learning from multiple areas of scholarship on teaching and learning, and to reflect on the content and process of the master's degree program. Culminating product includes a reflective paper with a corresponding project, such as a literature review, curricular model, technology product, or other project as agreed upon by the student and the student's advisor.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	651	Mth/Practices Qual Research	Advanced course for students familiar with theory and extant work. Topics include data collection, analysis, reporting, and an extensive fieldwork project.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): COE 503 with C or better
EDP	652	Multivar Procecds Data Analysis	Educational applications of multivariate methods, including MANOVA, discriminant analysis, and exploratory factor analysis. Emphasizes analyzing data and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	654	Structural Equation Modeling	Educational applications of confirmatory factor analysis, path analysis, and full latent variable models. Experience in conducting analyses and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
EDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	200	Design Literacy&Commnctn	Builds the requisite skills for students to be able to express their ideas visually. Gives exercises to create an understanding of basic principles of design as well as design communication, principles of composition and aesthetic evaluation. Uses tools such as sketching, drawing, computer graphics and model making as a vehicle to develop an understanding of visual methods of expressing one's self.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or The Arts (Fashion Design) major
EDS	201	Fund. of Sustainblty in Design	Explores sustainability as it relates to the key disciplines that comprise environmental design. Topics range from issues affecting the preservation of the urban fabric to the development of earth-friendly materials used by interior designers and product designers to the design of sustainable buildings by architects through the use of appropriate materials and requisite energy efficiencies. Surveys the literature of sustainability, identifying critical issues on the subject today. Explores the theoretical underpinnings of the sustainability movement as it affects environmental design and related disciplines.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
EDS	223	Design Thinking	Introduces the notion of design thinking, a concept that is gaining significant recognition in several disciplines including art, design, business, engineering and others. Design thinking can be described as a creative, multidisciplinary, human-centered approach to solving complex problems. Contemporary society faces numerous challenges, and the need for new tools and methods to tackle and solve these problems is more pressing than ever before. Offers several new techniques of design thinking and creative problem solving through engaging lectures and exciting projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
EDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	301	Sustainable Comm Dgn/Practices	Covers concepts and practices of a sustainable built environment of community scale. Exposes theories and methods, best practices to the design of built environments as a vehicle to develop students' understanding of different aspects of planning, designing, building, managing and promoting social and economic development of communities to meet sustainable development objectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre- or corequisite(s): EDS 200 OR Visiting University Student

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EDS	302	Design Inq & Ugrad research	Theories and methods of design inquiry within a research environment. Prepares students for the senior-year synthesis courses. Students take on design-related research and develop and write a proposal for an integrative experience/project for an environmental design intervention and make an implementation plan to realize this intervention.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: EDS 301
EDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	401	Environmntl Design Synthesis I	First of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students identify a relevant research problem in environmental design and undertake the necessary literature search and reading regarding theories and methods related to the selected research question. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 440 with C or better OR Visiting University Student
EDS	402	Environmntl Design Synthesis II	Second of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students implement the research study identified in the first semester of the two-semester sequence. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): EDS 401
EDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
EDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
EDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
EDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
EDT	180	TechLtrcy Prblm Slvng DigTech	Introducing digital technologies and their place in society. Applies 21st-century skills to problem solving using digital technology applications including spreadsheets and databases.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Credit is allowed for only EDT 180 or EDT 321 OR Visiting University Student
EDT	321	Computer Literacy: Mobile Tech	Uses mobile technologies across disciplines for communication, collaboration, creativity and problem solving. Employs digital tools including Microsoft Office's spreadsheets and databases, Google apps, mobile apps, and a variety of other Web-based tools in problem-based environments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Pre-requisite: Minimum 45 hours; Credit is allowed for only EDT 180 or EDT 321
EDT	440	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	460	Games, Technology & Society	Education, healthcare and social activism. Explores general theories about the relationship between technology and society using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact. Students play and analyze existing impact games as well as conduct a landscape analysis for an impact game on a topic of their own choosing.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only EDT 460 or 560

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EDT	461	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N		LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
EDT	463	Games for Impact: Life Cycle	Presents an impact game publishing methodology covering the full life cycle and key considerations for impact game design, development and publishing as well as the unique challenges in making games for impact. Applies methodology to examine an existing impact game currently in development. Students collaboratively workshop an original impact game concept and publishing plan that harnesses the power of games to address a key 21st-century challenge.	N		LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing. Credit is allowed for only EDT 463 or EDT 563
EDT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EDT	501	Fndtns of Learning Design&Tech	Foundations and evolution of the field of learning design and technology; examines accomplishments and issues in the field and explores possible career paths.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	502	Design and Development of Inst	Centers on the design and development of competency-based instructional materials, based on a variety of instructional design models, for learning in a multitude of settings.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	503	Design Effective Communication	Explores the theory, research and practice of computer-mediated communication including principles of graphic design for the purposes of creating effective presentations, job aids/infographics and video/audio for educational purposes. Includes a focus on accessibility and Section 508 compliance.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	504	Modalities of Learning	Focuses on the development, design and creation of various forms of Web-based instruction including blended, hybrid and online learning. Examines the characteristics of interactive media, synchronous and asynchronous forms of distance/online learning, eLearning software and project management.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	506	Evaluation of Learning System	Examines procedures for evaluating educational programs, training systems and new-technology applications. Focuses on basic evaluation concepts, steps in conducting a systematic evaluation project, the preparation of an evaluation report, as well as ethical issues.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; EDP 540, EDT 501, or EDT 502; Credit is allowed for only CED 525 or EDT 506
EDT	507	Performance Imprvmt & Ldrshp	Introduces the field of human performance technology. Emphasizes the analysis of performance problems, their causes, and interventions.	N		SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	511	Emerging Trends Tech Lrng Dsgn	Identifies current and future trends in the field of educational technology. Examines key trends, developing technologies and the affordances these technologies might offer, as well as the challenges with implementation that might be faced. Prepares students to embrace the ever-evolving nature of teaching and learning with technology, and how this may impact the process of design. Our awareness and openness to change influences our practice, and staying current with trends is an important characteristic of any future role related to educational technology that one may have.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student
EDT	523	Issues in Online & Distance Ed	Investigates current issues and trends specific to the implementation of web-based teaching and learning as well as practices for effective online instruction. Examines online learning principles, practices and their effectiveness by exploring the use of related systems and applications.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; EDP 540; EDT 501; EDT 502
EDT	524	Issues in K-12 Online Learning	Examines current issues, policies, and trends pertaining to K-12 Web-based teaching and learning. Actively explores research related to online learning, with a focus on virtual schooling and emerging best practices for effective online instruction.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Practicing or licensed K-12 teacher

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EDT	530	Technology Integration Methods	Examines a constructivist approach to technology in education. Investigates technology as a catalyst for rethinking instructional goals and practices.	Y	LEL	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	540	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	545	Using the Internet in Educ	Explores the Internet as an educational tool for research, inquiry-based learning, and online learning communities. Incorporates constructivist theory.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	560	Games, Technology and Society	The role and significance of digital games in society and the process of designing games for impact in areas such as education, healthcare and social activism. Explores general theories about the relationship between technology and society, using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 460 or EDT 560
EDT	561	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 461 or EDT 561
EDT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: EDT 501, 502, and 503 with C or better
EDT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisites: Accepted in either the MED in EDTCH, PHD in EDTECH, or the certificate in EDTECH programs
EDT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 502 with C or better
EDT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): EDT 701 with C or better
EDT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EDU	301	Why Education?	Explores and understands diverse forms and roles of education across multiple settings and populations, and from those encounters, evaluates how those forms and embedded practices support different values that are commonly tied to education. This evaluation includes the analysis of fundamental questions about justice, equity, opportunity and fairness in education.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	302	Diversity in Learning Contexts	Examines the relationships among cultural values, social contexts and learners' experiences. Explores the role of prejudice, stereotypes, institutional racism and sexism, and cultural incompatibilities in learning environments. Students debate fundamental questions about justice, equity, opportunity and fairness in order to develop their personal values and beliefs about diversity in learning.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	304	Coursework, Identity, Career	Connects critical concepts in coursework to field-based opportunities. Identifies social concerns that define an educational field as well as known supports and possible barriers. Given the specified discipline of a field, defines learning opportunities as well as opportunities for leadership, advocacy and innovation.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	396	Internship Non-profit Learning	Intern in a non-profit organization to link programmatic learning and personal educational interests. Expands students' experiences in culturally and socially diverse educational settings as they gain an understanding of the internship site's work, mission and audience. Expands on their vision for a future career by observing, actively participating, evaluating and reflecting on their internship experience.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	402	Partnering for Ed Initiatives	Examines global formal and informal partnerships to design innovative and sustainable educational initiatives that address social concerns and meet the needs of diverse populations. Shares solutions through professional communication using technology to collaborate with diverse groups.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
EDU	403	Planning for Capstone Project	Designs an education system or program to meet the needs of a diverse population within a specific community. Applies current research-based learning theories to the design. Uses professional communication skills to establish a partnership to advance an educational effort that promotes change within a community. Students use a deliberate design process to plan out an educational system or program that is aligned with their values and beliefs for learning.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre- or corequisite(s): EDU 396; EDU 484
EDU	404	Nav Change in Ed Innovation	Advocates for educational solutions that change communities and lives by addressing social concerns. Applies professional ethics to navigate through formal systems to change educational environments that meet the needs of a diverse population within a specific community. Expands one's experience in education across different cultural and social settings. Students communicate and collaborate globally to share findings and solutions on the world stage.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EDU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6		Prerequisite(s): Barrett Honors student
EDU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		

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EDU	498	Pro-seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-7		
EDU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		LAB	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-3		
EDU	501	Education Sciences 1	First course in the MS in Education Sciences sequence with beginning-level topics in quantitative research design, measurement and statistics in practice. Covers fundamental concepts in education research design, measurement, statistics and data management.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	502	Education Sciences 2	Second course in the MS in Education Sciences sequence with intermediate-level topics in research design, measurement and statistics in practice. Covers intermediate topics essential to the design and implementation of quantitative education research and the analysis of data. Course topics expand upon research skills introduced in earlier coursework.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): EDU 501
EDU	503	Education Sciences 3	Third course in the MS in Education Sciences sequence with advanced-level topics in research design, measurement and statistics in practice. Covers advanced topics in quantitative education research essential to success in real-world projects and effective communication of results. Course topics integrate, expand upon and apply research skills introduced in blocks one and two to design, measurement and analysis. Emphasizes application of design, measurement and analysis topics to consume and produce educational research.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): EDU 501; EDU 502
EDU	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	701	Systems Leaders Lab I	Aligned with students' professional settings and ongoing doctoral capstone projects, this lab course (Part I of the three-part LSL Lab Series) provides an overview of how leaders can identify and design solutions to "wicked problems" within learning systems.	N		LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student
EDU	702	Systems Leaders Lab II	Aligned with students' professional settings and ongoing capstone projects, the main motivation behind this lab (Part II of the three-part Lab Series) ensures students are familiar with, also in terms of application, the key concepts and ideas associated with educational and psychological measurement. While theoretical by nature, heavily applies the measurement-based content included throughout this course, and also involves required interactions with students' mentors.	N		LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student; EDU 701
EDU	703	Systems Leaders Lab III	Aligned with students' professional settings and ongoing doctoral capstone projects, this lab course (Part III of the three-part LSL Lab Series) provides an overview of how leaders can design and implement approaches to oversee monitoring, evaluation and assessment processes within learning systems.	N		LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student; EDU 701; EDU 702

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EED	324	Social Studies in Elem Schools	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners. Explores instructional materials, technology tools and social studies programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	396	Clinical Experience I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a K-8 classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of EED 396 fulfills two (2) of eight (8) required semester hours of practicum in grades K-8, as required by SBR R7-2-608 for an Elementary Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
EED	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
EED	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
EED	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
EED	433	Lng Method Mgt/Assesment	Theory on the social nature of oral and written language and congruent teaching, management and assessment practices. Emphasizes skills, strategies and dispositions for teaching 21st-century multimodal literacies to diverse learners including ELL with a focus on learners as creators of content, communicators, collaborators and global citizens.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	478	Student Teaching: EED 1-8	Student teaching in elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
EED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EED	511	Curriculum Theory&Instruct Pln	Contemporary curriculum theories. Curriculum as an interrelated entity. Process for instructional planning for student understanding and achievement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	521	Instructional Planning Diverse	Planning and delivering instruction; making adaptations for English language learners and students with special needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	524	Social Studies Meth&Assesment	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	529	Science Methods & Assessment	Focuses on inquiry-based processes, lesson design, teaching methods, and content overview to support science instruction in elementary grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student

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EED	531	Teaching with Educ Technology	Focuses on using technology in K-12 classrooms. Addresses the integration of technology in all curricular areas for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	536	IntgrHumanities Method/Assess	Focuses on content, assessments and methods of integrated humanities (social studies, arts and English language arts) for the elementary teacher. Apprentice teachers critically analyze and discuss course materials, generate meaningful questions and seek answers concerning the purpose, content, methods and assessments of integrated humanities instruction, and actively participate in course activities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): TEL 531
EED	537	K-8 Math Methods & Assessment	Mathematical knowledge for learning, teaching and assessment in grades K through 8. Focuses on developing conceptual understanding of mathematics through inductive, inquiry-based, problem-centered learning and teaching. Emphasizes representing and explaining mathematics using concrete, digital and real-world representations. Focuses on theories of mathematics learning, standards learning trajectories, and learning designs sequenced concrete-to-pictorial-to-abstract. Introduction to cognitively guided instruction and brain science messages of productive struggle and growth mindset for equitable mathematics learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student
EED	550	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
EED	557	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556
EED	567	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
EED	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
EED	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
EED	576	Professional Experience III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
EED	578	Residency/Student Teaching EED	Student teaching in elementary (EED) school classroom. Synthesized experience in curriculum, instruction and classroom management. Builds upon previous professional experiences to extend learning in a classroom setting and to obtain practice and feedback to continuously improve educator knowledge and skills.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
EED	582	Student Teaching EED Dual Cert	This 8-week capstone residency experience meets the EED requirement for dual certification in SPE and EED. Synthesized experience in curriculum, instruction and classroom management.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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EED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
EED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EEE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; minimum 12 hours; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
EEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	202	Circuits I	Principles for analyzing linear and nonlinear circuits. Uses SPICE and MATLAB. Design and measurement of linear analog electrical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): degree-seeking student; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed; PHY 131 with C or better if completed OR Visiting University Student
EEE	203	Signals and Systems I	Introduces continuous and discrete time signal and system analysis, linear systems, Fourier, and z-transforms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; EEE 202; MAT 242 with C or better or Pre- or corequisite(s): MAT 342 or 343 with C or better if completed OR Visiting University Student
EEE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prereq(s) w/min C: degree-skg stdnt: CSE 100 or 110; CSE or EEE 120 OR Sftwre Engr or Engr Mgt maj; CSE 110; SER 232 OR Elec Engr maj; CSE 100 or 110; CSE or EEE 120 OR Com Sci & Engr grad; Credit allowed for CSE or EEE 230 OR Visiting University Student
EEE	241	Fundamentals Electromagnetics	Vector analysis, differential operators, fourier analysis, scalar, vector fields, electro/magneto statics, time-varying fields, boundary value problems, dielectric, magnetic materials, Maxwell's equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; MAT 267 or 272 with C or better; MAT 274 or 275 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202 OR Visiting University Student
EEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	304	Signals and Systems II	Communication, signal processing, control systems, continuous, discrete transforms, sampling theorem, analog, digital modulation, filter design, signal processing applications, state space.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	307	Sig Process Digital Culture	Signal processing for non-majors. Digital filters, Fourier and z transform, DFT and FFT, digital signal processing computing, interdisciplinary DSP applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): non-ECEE major; MAT 210, MAT 265, or MAT 270; Credit is allowed for only EEE 307 or EEE 394 (Signal Analysis for the Digital Culture)
EEE	333	Hardwre Design Lang/Prog Logic	Develops digital logic with modern practices of hardware description languages. Emphasizes usage, synthesis of digital systems for programmable logic, VLSI.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 120 or CSE 120; EEE 202 OR Visiting University Student
EEE	334	Circuits II	Design of analog and digital circuits. Diodes/BJTs/Mosfets. Digital and analog circuit building blocks. Fundamentals of mixed signal circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) student; EEE 202 OR Visiting University Student
EEE	335	Analog and Digital Circuits	Analog, digital microelectronic circuits and systems. Amplifiers, frequency response, gate sizing, timing analysis, sequential digital circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) major; EEE 334 OR Visiting University Student
EEE	341	Engineering Electromagnetics	Time-varying electromagnetic fields, waves in homogeneous and stratified media, transmission lines, waveguides and cavity resonators, radiation and antennas.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; EEE 241 OR Visiting University Student

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EEE	350	Random Signal Analysis	Probabilistic and statistical analysis as applied to electrical signals and systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; MAE 318 OR pre- or corequisite: EEE 203; OR Fulton Engineering graduate student OR Visiting University Student
EEE	352	Properties Electronic Material	Schrodinger's wave equation, potential barrier problems, bonds of crystals, the band theory of solids, semiconductors, superconductor dielectric, and magnetic properties.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114, 115, 116 or 118; EEE 241; PHY 241 with a C or better OR Visiting University Student
EEE	360	Energy Sys/Power Electronics	Conventional and alternate energy sources for power systems, three-phase analysis, AC generators, transformers, induction, DC motors, power electronic speed control.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 202; Pre- or corequisite(s): EEE 241 OR Visiting University Student
EEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	404	Real-Time DSP Systems	Digital signal processors, translating signals and systems concepts into real-time multimedia and communications applications, real-time algorithms.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CSE 230 or EEE 230; EEE 203
EEE	407	Digital Signal Processing	Time and frequency domain analysis, difference equations, z-transform, FIR and IIR digital filter design, discrete Fourier transform, FFT, and random sequences.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; MAT 342 or 343 with C or better OR Visiting University Student
EEE	425	Digital Systems and Circuits	Digital logic gate analysis and design. Propagation delay times, fan out, power dissipation, noise margins. Design of MOS and bipolar logic families, including NMOS, CMOS, standard and advanced TTL, ECL, and BiCMOS. Inverter, combinational and sequential logic circuit design, MOS memories, VLSI circuits. Computer simulations using PSPICE.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	433	Analog Integrated Circuits	Analysis, design, and applications of modern analog circuits using integrated bipolar and field-effect transistor technologies.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	434	Quantum Mechanics Engineers	Angular momentum, wave packets, Schroedinger wave equation, probability, problems in one dimension, principles of wave mechanics, scattering, tunneling, central forces, angular momentum, hydrogen atom, perturbation theory, variational techniques.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	435	Fundamentals of CMOS & MEMS	Introduces basic CMOS processing and fabrication tools. Covers the fundamentals of thermal oxidation, CVD, implantation, diffusion, and process integration.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	436	Fund of Solid-State Devices	Semiconductor fundamentals, pn junctions, metal-semiconductor contacts, metal-oxide-semiconductor capacitors and field-effect transistors, bipolar junction transistors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	437	Optoelectronics	Basic operating principles of various types of optoelectronic devices that play important roles in commercial and communication electronics; light-emitting diodes, injection lasers, and photodetectors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352
EEE	439	Semiconduct Facil/Cleanrm Prac	Microcontamination, controlled environments, cleanroom layout and systems, modeling, codes and legislation, ultrapure water, production materials, personnel and operations, hazard management, advanced concepts.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	443	Antennas Wireless Communicatns	Fundamental parameters; radiation integrals; wireless systems; wire, loop, and microstrip antennas; antenna arrays; smart antennas; ground effects; multipath.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341
EEE	445	Microwaves	Waveguides; circuit theory for waveguiding systems; microwave devices, systems, and energy sources; striplines and microstrips; impedance matching transformers; measurements.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 (EEE 340) OR Visiting University Student
EEE	448	Fiber Optics	Principles of fiber-optic communications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 OR Visiting University Student

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EEE	455	Communication Systems	Signal analysis techniques applied to the operation of electrical communication systems. Introduction to and overview of modern digital and analog communications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 350 OR Visiting University Student
EEE	459	Communication Networks	Fundamentals of communication networks. Study of Seven-Layer OSI model. Focus on functionality and performance of protocols used in communication networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; Corequisite(s): EEE 350 OR Visiting University Student
EEE	460	Nuclear Power Engineering	Radioactivity and decay. Radiation interactions and dose. Nuclear reaction, fission and fusion theory. Fission reactors, four factor formula, moderation. Nuclear power, TMI, Chernobyl. Nuclear fuel cycle.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114 or 116; MAT 274 or 275 with C or better; PHY 241 or 361 with C or better
EEE	463	Electrical Power Plants	Generation of electric power using fossil, nuclear, and renewable, including solar, geothermal, wind, hydroelectric, biomass and ocean, energy sources. Power plant thermal cycle analysis. Cogeneration and combined cycles. Economics, operations, and design of electric power stations. Energy storage.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE or BHSE undergraduate student; CHM 114 or 116; MAE 241 or PHY 241 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
EEE	465	Photovoltaic Energy Conversion	Photovoltaics for production of electricity from solar energy. The grand energy challenge. Solar radiation and utilization. Fundamentals of semiconductors for photovoltaics: crystal structures, band theory, doping, carrier statistics, optical absorption, and p-n junctions. Principles of solar cells including loss mechanisms and design principles. Current solar cell technologies. Manufacturing of silicon solar cells. Solar modules, arrays and systems. Economic analysis of solar photovoltaic systems. Terawatt-scale deployment of solar cells.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352; Credit is allowed for only EEE 465 or 498: Solar Energy
EEE	470	Electric Power Devices	Analyzes devices used for short circuit protection, including circuit breakers, relays, and current and voltage transducers. Protection against switching and lightning over voltages. Insulation coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360 OR Visiting University Student
EEE	471	Power System Analysis	Review of transmission line parameter calculation. Zero sequence impedance, symmetrical components for fault analysis, short circuit calculation, review of power flow analysis, power system stability, and power system control concepts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	472	Power Electronics & Power Mgmt	Principles of switch mode power conversion, analysis, design and control of dc-dc converters, PWM rectifiers and inverters, power management, power electronics applications in information technology, renewable energy systems, motion control and lighting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	473	Electrical Machinery	Operating principles, modeling and speed control of DC, brushless DC, and AC machines; power converters for DC and AC motors drives.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	480	Feedback Systems	Analysis and design of linear feedback systems. Frequency response and root locus techniques, series compensation, and state variable feedback.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 or MAE 318 OR Visiting University Student
EEE	481	Computer-Controlled Systems	Implements computer-based, embedded, control systems using MATLAB xPC Target toolbox. Small-scale, representative projects demonstrate theoretical issues and provide hands-on expertise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 and EEE 230/CSE 230, or MAE 318 OR Visiting University Student
EEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	488	Senior Design Laboratory I	Design process: research, concept, feasibility, simulation, specifications, benchmarking, and proposal generation. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergrad student; ENG 102, 105 or 108, EEE 241; EEE 334; EEE 350; three courses from the following list: EEE 304, 333, 335, 341, 352 or 360 OR Visiting University Student
EEE	489	Senior Design Laboratory II	Implement, evaluate, and document EEE 488 design. Social, economic, and safety considerations. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE senior or post-bacc undergraduate student; ENG 101, 105, or 107 with C or better; EEE 488 OR Visiting University Student

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EEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6		Prerequisite(s): Barrett Honors Electrical Engineering BSE senior
EEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors Electrical Engineering BSE senior; ENG 101, 105, or 107 with C or better
EEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 433
EEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-7		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-3		Prerequisite(s): Electrical Engineering BSE senior
EEE	505	Time-Frequency Signal Process	Joint time-frequency analysis of time-varying signals and systems; linear and quadratic time-frequency representations; applications in current areas of signal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	506	Digital Spectral Analysis	Principles and applications of digital spectral analysis, least squares, random sequences, parametric, and nonparametric methods for spectral estimation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	507	Multidimension Signal Process	Processing and representation of multidimensional signals. Design of systems for processing multidimensional data. Introduces image and array processing issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	508	Digital Image&Video Proc & Cmp	Fundamentals of digital image perception, representation, processing, and compression. Emphasizes image coding techniques. Signals include still pictures and motion video.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	509	DSP Algorithms & Software	Linear systems review, digital filter design, software aspects, DFT, FFT, random signals, programming aspects, applications projects, MATLAB and Java simulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	510	Multimedia Signal Processing	Speech/audio coding algorithms. LPC, CELP, MPEG, Cell phone, DTV, cinema, and surround sound standards. MPEG/JPEG introduction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	511	Artificial Neural Computation	Networks for computation, learning function representations from data, learning algorithms and analysis, function approximation and information representation by networks, applications in control systems and signal analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	512	Sys Level Design Hetero Archs	In-depth introduction to multicore computing architectures ranging from low-power multiprocessor systems-on-chip (MpSoC) to high-performance chip-multiprocessors (CMP). Fundamental topics on modeling, analysis, and optimization of multicore systems; particular attention on low-power and communication-centric design of multicore systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 512 or EEE 598 (System-Level Design for Multicore Architectures)
EEE	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit allowed for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analysis)

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EEE	517	Sensors and Machine Learning	Integrated sensor devices and algorithms; microphone arrays, chemical sensing, mobile sensing; accelerometers and magnetometers, nanopore sensors, and flexible and patch sensors. Signal pre-processing for sensors; feature extraction; image sensing; voice processing; filters; frequency analysis; autocorrelation; principal components; k means algorithm; sensor fusion; neural nets; applications to health, security and mobile systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 517 or EEE 598 (Sensor & Machine Learning Apps)
EEE	521	Low-Power Bioelectronics	Begins with fundamental theory and techniques for low-power analog circuit design especially subthreshold CMOS and BJT circuits (e.g., translinear circuits), then moves to biomedical applications and bio-inspired systems focused upon neuromorphic circuits. Also touches on concepts such as wireless challenges for implants, energy harvesting and electrochemistry. Students have the opportunity to have their final projects fabricated in a commercial CMOS process.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	522	RF Test	Covers current production test schemes for mixed-signal and RF circuits, the economics of production test, and recent research techniques in reducing the production test cost. Prior knowledge of Matlab is necessary to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	523	Adv Analog Integrated Circuits	Analysis and design of analog integrated circuits: analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	524	Comm Transceiver Circuit Desgn	Communication transceivers and radio frequency system design; fundamentals of transceivers circuits; RF, IF, mixers, filters, frequency synthesizers, receivers, CAD tools, and lab work on IC design stations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	525	VLSI Design	Analysis and design of Very Large Scale Integrated (VLSI) circuits. Physics of small devices, fabrication, regular structures, and system timing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	526	VLSI Architectures	High throughput and low-power VLSI architectures for signal processing. Array processor systems; data path design and optimization; memory design; high-level synthesis; low-power design at system level, algorithm level, and architecture level.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	527	Analog to Digital Converters	Detailed introduction to the design of Nyquist rate, CMOS analog to digital converters. Requires knowledge of analog integrated circuits (analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits) to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	528	Snsrs Intrnet Things&Wear Dev	Fundamentals, concepts of system analysis and design, and principles that apply to phase-locked loops (PPLs) used in frequency synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EEE	529	Semicondctr Memory Tech & Sys	Design of semiconductor memory technologies and systems, from the device cell structures to the array and architecture design, with emphasis on the industry trends and cutting-edge technologies including SRAM, DRAM and FLASH technologies and emerging memory technologies such as STT-MRAM, PCRAM and RRAM.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Comp & Energy Engr (ECEE), POLY, SBHSE, SCAI, SEMTE, or SSEBE graduate student; Credit is allowed for only EEE 529 or EEE 598 (Semicondctr Memory Tech & Sys) or CEN/CSE 591 (Memory Sys: Device, Circuit & Architecture)
EEE	530	Advanced Silicon Processing	Thin films, CVD, oxidation, diffusion, ion-implantation for VLSI, metallization, silicides, advanced lithography, dry etching, rapid thermal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	531	Semiconductor Device Theory I	Transport and recombination theory, pn and Schottky barrier diodes, bipolar and junction field-effect transistors, and MOS capacitors and transistors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	532	Semiconductor Device Theory II	Advanced MOSFETs, charge-coupled devices, solar cells, photodetectors, light-emitting diodes, microwave devices, and modulation-doped structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	533	Semiconduct Process/Device Sim	Device simulation concepts: conventional and advanced MOS devices, bipolar transistors, heterostructures including HEMTs and solar cells. Process simulation concepts: oxidation, ion implantation, diffusion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	534	Semiconductor Transport	Carrier transport in semiconductors. Hall effect, high electric field, Boltzmann equation, correlation functions, and carrier-carrier interactions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	535	Electron Transport Nanostruct	Nanostructure physics and applications. 2-D electron systems, quantum wires and dots, ballistic transport, quantum interference, and single-electron tunneling.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	536	Semiconductor Characterization	Measurement techniques for semiconductor materials and devices. Electrical, optical, physical, and chemical characterization methods.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	537	Semiconductor Optoelectronics	Electronic states in semiconductors, quantum theory of radiation, absorption processes, radiative processes, nonradiative processes, photoluminescence, and photonic devices.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	538	Optoelectronic Devices	Provides graduate students with detailed theory and practical knowledge of semiconductors materials and optoelectronic devices such as light-emitting diodes, lasers, photodetectors and solar cells. Also discusses the applications of these devices. Offers not only classroom lectures but also demonstration of real-world experiments in research laboratories at ASU.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	539	Intro Solid-State Electronics	Crystal lattices, reciprocal lattices, quantum statistics, lattice dynamics, equilibrium, and nonequilibrium processes in semiconductors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	540	Fast Comput Electromagnetics	Method of moments, finite difference time-domain, finite element methods implemented using fast algorithms (wavelets, FMM, Nystrom) to gain high efficiency.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	541	Electromag Fields/Guided Waves	Polarization and magnetization; dielectric, conducting, anisotropic, and semiconducting media; duality, uniqueness, and image theory; plane wave functions, waveguides, resonators, and surface guided waves.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	543	Antenna Analysis and Design	Impedances, broadband antennas, frequency independent antennas, miniaturization, aperture antennas, horns, reflectors, lens antennas, and continuous sources design techniques.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	544	High-Resolution Radar	Fundamentals; wideband coherent design, waveforms, and processing; stepped frequency; synthetic aperture radar (SAR); inverse synthetic aperture radar (ISAR); imaging.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	545	Microwave Circuit Design	Analysis and design of microwave attenuators, in-phase and quadrature-phase power dividers, magic tees, directional couplers, phase shifters, DC blocks, and equalizers.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	546	Advanced Fiber Optics	Theory of propagation in fibers, couplers and connectors, distribution networks, modulation, noise and detection, system design, and fiber sensors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	547	Microwave SS Circuit Design I	Applies semiconductor characteristics to practical design of microwave mixers, detectors, limiters, switches, attenuators, multipliers, phase shifters, and amplifiers.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	548	Coherent Optics	Diffraction, lenses, optical processing, holography, electro-optics, and lasers.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	550	Transform Theory/Applications	Introduces abstract integration, function spaces, and complex analysis in the context of integral transform theory. Applications to signal analysis, communication theory, and system theory.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	551	Information Theory	Entropy and mutual information, source and channel coding theorems, applications for communication and signal processing.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	552	Digital&Wireless Communication	Complex signal theory, digital modulation, optimal coherent and incoherent receivers, channel codes, coded modulation, Viterbi algorithm.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	553	Coding and Applications	Introduces algebra, block and convolutional codes, decoding algorithms, turbo codes, coded modulation, private and public key cryptography.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	554	Random Signal Theory	Applies statistical techniques to the representation and analysis of electrical signals and to communications systems analysis.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	556	Detection/Estimation Theory	Combines the classical techniques of statistical inference and the random process characterization of communication, radar, and other modern data processing systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	557	Broadband Networks	Physics of wireless and optical communications. Broadband multiplexing and switching methods. Blocking and queuing analysis. Network optimization, routing, and economics.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	558	Recent Advances in Communicatn	Cellular systems, path loss, multipath fading channels, modulation and signaling for wireless, diversity, equalization coding, spread spectrum, TDMA/FDMA/CDMA.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	559	Wireless Networks	Design principles of cellular networks. Multiple access control protocols for wireless systems. Wireless routing and TCP/IP. Mobile management. Call admission control and resource allocation (e.g., power control and rate control). Wireless security. Future-generation wireless networks. A previous course in random signal theory is required to be successful in this class.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	562	Nuclear Reactor Theory&Design	Principles of neutron chain reacting systems. Neutron diffusion and moderation. One-, two-, and multigroup diffusion equation solution methods. Heterogeneous reactors. Nuclear fuel steady-state performance. Core thermal-hydraulics. Core thermal design.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	563	Nuclear Rx Dynamics&Diagnostics	Time-dependent solution to neutron diffusion equation. Reactor kinetics and reactivity changes. Dynamics, stability, and control of reactor systems. Modeling neutronic and thermal processes. System characterization in time and frequency domains. Reactor surveillance and diagnostics.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	564	Interdisciplin Nuclear Pwr Ops	Nuclear power plant systems. Studies interrelationship and propagation of effects that systems and design changes have on one another, especially in relation to nuclear power plant safety and operations. Case studies and design projects.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	565	Solar Cells	Introduction to the generation and utilization of electricity from solar energy. Exploration of the science and engineering of direct conversion (photovoltaics), including the design, fabrication, and operation of solar cells, and the construction and performance of solar cell modules. Prior knowledge of properties of electronic materials is required to be successful in this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	566	Adv Device Modeling & Simulatn	Understanding semi-classical and quantum transport theory in conjunction with device simulations at the nanoscale. Prior knowledge of semiconductor device theory, quantum mechanics and classical semiconductor device simulation is necessary to be successful in this class.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student, Credit is allowed for only EEE 566 or EEE 598 (Advanced Device Modeling)

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EEE	571	Power System Transients	Simple switching transients. Transient analysis by deduction. Damping of transients. Capacitor and reactor switching. Transient recovery voltage. Travelling waves on transmission lines. Lightning. Protection of equipment against transient overvoltages. Introduces computer analysis of transients.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMUCE or SSEBE graduate student
EEE	572	Advanced Power Electronics	Analyzes device operation, including thyristors, gate-turn-off thyristors, and transistors. Design of rectifier and inverter circuits. Applications such as variable speed drives, HVDC, motor control, and uninterruptable power supplies.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	573	Electric Power Quality	Sinusoidal waveshape maintenance; study of momentary events, power system harmonics, instrumentation, filters, power conditioners, and other power quality enhancement methods.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	574	Computer Solution of Power Sys	Algorithms for digital computation for the Newton and fast-decoupled power flow problem, and fault analysis. Sparse matrix and vector programming methods, creation of elimination trees, network equivalencing, solution of the least squares problem, introduction to state estimation.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	575	Power System Stability	Dynamic performance of power systems with emphasis on stability. Modeling of system components and control equipment. Analysis of the dynamic behavior of the system in response to small and large disturbances. Knowledge of EEE470, 471 and 473 (or equivalents) is required to be successful in this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	576	Power System Dynamics	Dynamic performance of power systems with emphasis on control. Modeling of control equipment, FACTS devices, wind generators, and nonlinear loads. Design of power system stabilizers. Prior knowledge of electric power devices, power system analysis, and electrical machinery is required to be successful in this course.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	577	Power Engr Operations/Planning	Economic dispatch, unit commitment, dynamic programming, power system planning and operation, control, generation modeling, AGC, and power production.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	579	Power Transmission/Distributn	High-voltage transmission line electric design; conductors, corona, RI and TV noise, insulators, clearances. DC characteristic, feeders voltage drop, and capacitors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	581	Filtering Stochastic Processes	Modeling, estimation, and filtering of stochastic processes, with emphasis on the Kalman filter and its applications in signal processing and control.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	582	Linear System Theory	Controllability, observability, and realization theory for multivariable continuous time systems. Stabilization and asymptotic state estimation. Disturbance decoupling, noninteracting control.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	585	Security & Privacy Network Sys	Comprehensive understanding of critical cyber security and privacy threats as well as corresponding solutions in emerging wireless networks, mobile systems, social networks, Internet-of-Things, critical infrastructures, cloud computing, big data analytics, wearable and edge computing, and mobile health. Requires prior knowledge of communications systems or computer networking to be successful in this course.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Elect, Comp and Energy Engr (ECEE) or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 585 or EEE 598 (Adv Topics in Wireless & Internet Security) or EEE 598 (Selected Topics in Network Security)
EEE	586	Nonlinear Control Systems	Stability theory, including phase-plane, describing function, Liapunov's method, and frequency domain criteria for continuous and discrete, nonlinear, and time-varying systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	587	Optimal Control	Optimal control of systems. Calculus of variations, dynamic programming, linear quadratic regulator, numerical methods, and Pontryagin's principle.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	588	Design Multivari Control Sys	Practical tools for designing robust MIMO controllers. State feedback and estimation, model-based compensators, MIMO design methodologies, CAD, real-world applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	589	Linear Algebra & Convx Opt	Linear algebra and convex optimization. Vector spaces, matrix algebra, linear programming, Lagrange multipliers, Karush-Kuhn-Tucker (KKT) conditions, duality theory and algorithms for convex optimization. Newton's method, gradient and steepest descent methods. Algorithms for unconstrained, equality constrained and inequality constrained problems, which include interior point methods. Applications to approximation and data fitting and some geometric problems. Applications to signal processing, communications and control systems. Background in linear algebra necessary to be successful in this course.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or CIDSE, SBHSE, SEMTE or SSEBE graduate student; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
EEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD students
EEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	606	Adaptive Signal Processing	Principles and applications of adaptive signal processing, adaptive linear combiner, Wiener least-squares solution, gradient search, performance surfaces, LMS/RLS algorithms, block time/frequency domain LMS.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	607	Speech Coding Multimedia Comm	Speech and audio coding algorithms for applications in wireless communications and multimedia computing.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	625	Advanced VLSI Design	Practical industrial techniques, circuits, and architectures appropriate to high-performance and low-power digital VLSI designs such as microprocessors.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	627	Oversampling Sigma-Delta Data	Introduces design and analysis of sigma delta oversampled data converters from an IC design perspective.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	641	Adv Electromagnet Field Theory	Cylindrical wave functions, waveguides, and resonators; spherical wave functions and resonators; scattering from planar, cylindrical, and spherical surfaces; Green's functions.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	643	Adv Topics Electromagnet Rad	High-frequency asymptotic techniques, geometrical and physical theories of diffraction (GTD and PTD), moment method (MM), radar cross section (RCS) prediction, Fourier transforms in radiation, and synthesis methods.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	686	Adaptive Control	Main topics covered: adaptive identification, convergence, parametric models, performance and robustness properties of adaptive controllers, persistence of excitation, and stability.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD student or Master of Engineering student
EEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	731	Advanced MOS Devices	Threshold voltage, subthreshold current, scaling, small geometry effects, hot electrons, and alternative structures.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering PhD students
EEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EET	406	Control System Technology	Control system components, analysis of feedback control systems, stability, performance, and application.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3-4		Pre-requisites: EST 310; MAT 266; Credit for EET 506 or EET 406

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EET	408	Digital Real-Time Control	Analysis, simulation, and design of discrete systems. Approach taken in this class begins with the analysis, simulation and design of a continuous system, which yields an s-based, transfer function compensator. Then, this compensator is transformed into a z-based transfer function, which can be realized with a difference equation in a microcontroller.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EET 406; Credit is allowed for only EET 408 or 494 (Digital Realtime Control)
EET	430	Instrumentation & Measurement	Instrumentation and measurement techniques, sensors operating principles. Signal and error analysis. Signal conditioning and data acquisition.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only EET 430 or 530
EET	506	System Dynamics and Control	Time, frequency, and transform domain analysis of physical systems. Transfer function analysis of feedback control systems performance and stability. Compensation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EET 406 or EET 506
EET	508	Digital Real-Time Control	Sample data control techniques and applications to process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EET	530	Electronic Test Syst & Apps	Analysis, design, and application of electronic test equipment, test systems, specifications, and documentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only EET 430 or EET 530
EGR	101	Found of Eng Design Proj I	Introduces engineering as a profession, critical thinking in engineering design and modeling, team dynamics, engineering communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		
EGR	102	Found of Eng Design Proj II	Development and experimental verification of engineering models, engineering design, data acquisition, critical analysis of data, introduction to CADD, engineering communications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 101; Pre- or corequisite(s): MAT 170 or higher OR Visiting University Student
EGR	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
EGR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	201	Use-Inspired Design Project I	Design, professionalism, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 102; MAT 265 or 270 with C or better OR Visiting University Student
EGR	202	Use-Inspired Design Project II	Design, problem solving, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 104 or TWC 104 with C or better; EGR 201 with C or better OR Visiting University Student
EGR	216	EGR Electrical Fundamentals	Introduces modeling of electrical systems using mathematical and scientific principles. Covers electrical circuit analysis techniques including Kirchhoff's and Ohm's laws, series and parallel circuit elements, equivalent elements and circuits, and nodal analysis. These techniques are developed for DC, AC, and transient conditions. Also introduces the basic structure of a modern electronic measurement system and relates this structure to measurement accuracy, precision and resolution.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only EGR 216 or EGR 294 (Engineering Fundamentals I) OR Visiting University Student
EGR	217	Engr Mechanics Fundamentals	Provides a foundation in the theory and principles of statics and dynamics. Examines the effect of forces acting on particles and rigid bodies. Extensively uses vector mechanics. Statics addresses the topics of equilibrium in two and three dimensions, to include distributed loads, trusses, frames, friction and the moment of inertia. Dynamics addresses kinematics and kinetics of particles.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better OR Visiting University Student
EGR	218	Materials and Manufact Process	Applies material properties and manufacturing processes to the design and fabrication of engineered artifacts.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 or 114 with C or better OR Visiting University Student
EGR	219	Computational Modeling Eng Sys	Introduces computing that develops software to find solutions to engineering problems. Students write and document code to solve problems in data acquisition, modeling of physical systems, and optimization.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 266 or 271 with C or better; Pre- or corequisite(s): MAT 274 or 275 OR Visiting University Student
EGR	240	CADD and Solid Modeling	Uses 3-D solid modeling software to model mechanical parts and produce valid engineering drawings, including use of geometric dimensioning and tolerancing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		

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EGR	280	Engineering Statistics	Applications-oriented introduction to statistics with computer-based experience using statistical software for formulating and solving engineering problems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Prerequisite(s): MAT 265 or 270 with C or better OR Visiting University Student
EGR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	303	Mechanical Systems Project I	Analyze, design, implement and characterize a mechanical system through an in-depth mechanical system design project. Project includes modeling, analysis and measurement of the dynamic behavior of the mechanical system. Develops professional and engineering skills in this project setting.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	304	Embedded Sys Design Project I	Design, implement and debug an embedded electromechanical system through an in-depth design project. Develops professional and engineering skills in this project setting.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	305	Robotics Systems Project I	Analyze, design, implement and debug a robotic electromechanical system through an in-depth robotic system design project. Develops professional and engineering skills in this project setting.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better
EGR	306	Automotive Systems Project I	Analyze, design, implement and verify an automotive system through an in-depth design project. Develops professional and engineering skills in this project setting.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	307	Humanitarian Eng Project I	Provides students with the opportunity to work on a real-world project that is or will be taking place "in the field," in a part of the world with fewer material resources than most places in the United States. Builds the skill sets of students who are interested in pursuing development-related work after graduation. Course is team-based, project-focused and extremely hands-on. Emphasizes skills development on equal par as working with peers, mentors and in-field partners.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing OR Visiting University Student
EGR	313	Mechanical Systems Project II	Applies design principles to conceptualize, implement and characterize a fluid and/or thermodynamic system in a project setting. Project emphasizes communication with project stakeholders; applying an appropriate design approach in the context of a fluid and/or thermodynamic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 303 with C or better; EGR 340 with C or better OR Visiting University Student
EGR	314	Embedded Sys Design Project II	Applies design principles to conceptualize, implement and characterize an embedded electromechanical system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an embedded system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 304 with C or better
EGR	315	Robotic Systems Project II	Applies design principles to conceptualize, implement and characterize an electromechanical robotic system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of a robotic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 305 with C or better; EGR 455 with C or better
EGR	316	Automotive Systems Project II	Applies design principles to conceptualize, implement and characterize an automotive system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an automotive system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 306 with C or better
EGR	317	Humanitarian Eng Project II	Applies design principles to conceptualize, implement and characterize an engineered system that addresses a humanitarian objective in a project setting. Project emphasizes communication with project stakeholders, applying an appropriate design approach, thinking critically in developing system specifications and evaluating a prototype relative to these specifications, and increasing technical competence.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing

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EGR	321	Water Resource Systems	Fundamentals of water supply and surface water hydrology in the context of the engineering, design and analysis of water resources systems. Places particular emphasis on those aspects of water systems that apply in the context of the developing world as well as in the context of environmentally sustainable systems. Course delivery is designed for engineering students with a broad understanding of engineering fundamentals but without specialist civil engineering knowledge.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better
EGR	325	Water and Wastewater Treatment	Essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies. Provides a fundamental basis for understanding sustainable water and wastewater treatment processes and their design considerations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework to strengthen and emphasize importance of adequate practices used in operation and design of engineered water and wastewater treatment systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 with C or better; EGR 321 with C or better; Credit is allowed for only EGR 325 or ERM 302 OR Visiting University Student
EGR	330	Design of Electrical Systems	Overview of electrical system architectures and components used in design of smart electrical and electromechanical systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	334	Analog-Digital Interface	Signal processing and operational tools that lie between sensors and digital data processors developed from a system perspective. Includes selection, deployment and analysis of sensors, analog signal processors and converters as well as their appropriate power supplies and the impact of all these components on system performance and cost. Uses experimental and simulation tools to demonstrate typical-use cases for medical, military, industrial and consumer applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better OR Visiting University Student
EGR	338	Microcontrollers in Smart Sys	Microcontroller implementation of smart systems. Microcontrollers applied to control dynamic systems, including the interface with sensors and actuators as well as developing simple open- and closed-loop control laws.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	340	Engineering Thermo-Fluids I	First and second laws of thermodynamics, systems, processes, equations of state, property tables. Fluid statics, conservation of momentum, Bernoulli's equation, applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
EGR	343	Mechanics of Solid Materials	Studies strength and physical performance, such as deformations and load-carrying capacity, of natural and artificial solid structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
EGR	360	Concepts in Auto Engineering	Fundamental engineering principles as they apply to the design of ground vehicles used for the transportation of individuals or materials.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202; Credit is allowed for only EGR 360 or EGR 394 (Intro to Concepts in Automotive Engineering)
EGR	363	Auto Powertrain & Thermal Sys	Internal combustion engine (ICE) design in the context of automotive systems and heat management in vehicle systems, including thermal design of engine and transmission cooling systems. Operating characteristics and efficiencies of the ICE, terminology and abbreviations used in the automotive industry, contemporary fuels and the latest hybrid technology, CAFE standards and EPA vehicle emissions standards, lubrication systems and fluids appropriate for a given design, and current and future standards requirements.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): EGR 340 with C or better if completed
EGR	370	Welding Survey	Theory and practical application of the most widely used industrial welding processes; introductory welding, fundamental welding metallurgy, weldment design and weld cost estimating; lab experiences using SMAW, GTAW, GMAW, FCAW, RSW, SW, OFC, OAW, PAC, and brazing. Aligns with the American Welding Society (AWS) SENSE standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
EGR	371	Best Practice Humanitarian Eng	Technological and process-based best practices for engineering students to gain applied competence in low-cost and low-tech appropriate methods and technologies for small-scale technical problems in local and international humanitarian development contexts.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering major; junior or senior standing
EGR	380	Advanced CADD & Solid Modeling	Advanced techniques and practices of solid modeling and drafting, including motion, Finite Element Analysis (FEA), and sheet metal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 240; Credit is allowed for only EGR 380 or EGR 394 (Advanced CADD & Solid Modeling) OR Visiting University Student

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EGR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	401	Professional Design Project I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; EGR 313, 314, 315 or 316 with C or better OR ENG 101, 105, or 107 with C or better; MFG 318 with C or better OR Visiting University Student
EGR	402	Professional Design Project II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 401 with C or better taken within one previous term OR Visiting University Student
EGR	425	Unit Treatment Tech and Sys	Addresses fundamental concepts of unit treatment technologies and the scientific and engineering principles that govern the proper design, operation and management of these systems. Course is divided into two overlapping major categories of unit treatment technologies: air-pollution controls and soils/groundwater remediation. Enhances understanding of the unit treatment technologies by reviews of dimensional analysis, mass transport mechanisms, mass balances, modeling, kinetics and reactors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 425 or ERM 402 OR Visiting University Student
EGR	426	Integrated Solid Waste Sys	Addresses the fundamental concepts of solid waste, pathways and transformation processes following the from cradle-to-grave approach. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes describing the present solid waste systems as an integrative set of functional units. Considers physical, chemical and biological transformations of the solid waste, together with the existing technologies and practices for management, treatment and disposal of the solid waste. Includes a specific overview of sustainable solid waste practices such as waste minimization, pollution prevention, reuse and reclamation, together with current domestic and foreign regulations. Addresses planning and design of solid waste operations and facilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 426 or ERM 432 or ERM 532 OR Visiting University Student
EGR	427	Princ of Hazard Waste & Mat	Trains future environmental engineers and professionals in fundamental hazardous waste and materials concepts. Addresses regulatory requirements; materials hazard communication; material safety concepts; types of hazardous waste/materials (chemical, radioactive, and infectious); risk assessment and routes of exposure; personal protective equipment, prudent practices; treatment; storage and disposal of hazardous waste/materials through the lens of the cradle-to-grave concept. Gains knowledge about the hazardous waste enforcement processes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 427 or ERM 401 or ERM 501 OR Visiting University Student
EGR	430	Design Fab Arch Elect Devices	Comprehensive introduction to the design, operation, production and application of the most common semiconductor devices and categories of integrated circuit. Demonstrates the close interaction among materials, semiconductor physics and circuit performance, especially in terms of the applications and economics of digital systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better OR Visiting University Student
EGR	431	Power Management	Devices and techniques to supply and manage power in electrical systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
EGR	433	Transforms & Systems Modeling	State-space and transform-domain modeling and analysis of electrical and electromechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 455 with C or better; MAT 274 or 275 with C or better; Pre- or corequisite(s): MAT 342 or 343
EGR	438	RF Systems	Applies fundamental principles of electromagnetics to design and analyze engineered RF systems and applications. Introduces and describes transmission lines, Smith Charts, s-parameters, waves in free space, reflection and refraction and their use in engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 331; Credit is allowed for only EGR 438 or EGR 494 (Fundamentals of RF)
EGR	444	Engineering Design	Applies fundamentals of mechanics in analysis and synthesis of machine components and systems, with emphasis on stress and failure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 343 with C or better OR Visiting University Student
EGR	445	Mechanical Engineering Systems	Design and modeling of multicomponent electromechanical systems. Applications of computers, controllers, electronics using system hardware and software development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 219 with C or better; EGR 444 with C or better

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EGR	455	Robotic Systems I	Analysis and design of robotic systems focusing on kinematics, dynamics, coordinate transformations and modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	456	Robotic Systems II	Design of robotic systems focusing on dynamics, modeling and controlling a robot.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 455 with C or better; Credit is allowed for only EGR 456 or EGR 546 or EGR 598 (Robotics Systems II) OR Visiting University Student
EGR	463	Vehicle Elect Sys & Hybrid Sys	Basic theory and operation of hybrid electric drive systems of motor vehicles. Covers fundamentals of next generation electrification including: batteries technology, charging, power electronic operation. Emphasizes the principals of HEV energy management strategies and HEV modeling fundamentals.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 363 with C or better OR Visiting University Student
EGR	465	Ground Vehicle Dynamics	Basic understanding of vehicle dynamics principles and a sufficient knowledge to analyze vehicle dynamic performance and associated chassis system design concepts. Understanding of various dynamical equations of motion governing vehicle behavior as well as computer simulation.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 363 with C or better OR Visiting University Student
EGR	475	Alternative Energy	Covers basic principles, thermodynamics and economics of alternative energy conversion technologies including solar photovoltaics, concentrating solar, wind, biomass, nuclear, fuel cells and energy storage. Briefly discusses conventional heat and power systems as they pertain to alternative energy integration. Introduces operating characteristics of renewable energy technologies through simulation and then reinforces through hands-on demonstrations and experiments with renewable energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, MAE 240, or PHY 151 with C or better OR Visiting University Student
EGR	476	Microgrid Design and Operation	Design, modeling, integration, operation and maintenance of microgrids. Simulation-based design is coupled with hands-on integration to provide a comprehensive approach to microgrid systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, MAE 240, or PHY 151 with C or better
EGR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
EGR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6		Prerequisite(s): Barrett Honors student
EGR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EGR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
EGR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	520	Engineering Analysis I	Analytical methods for evaluation of engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	521	Engineering Analysis II	Mathematical techniques for developing solutions of engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 520; Credit is allowed for only EGR 521 or EGR 598 (Engineering Analysis II)
EGR	522	Stats Qulty Cntrl Manufact	Seven QC tools and control charts for data analysis and interpretation; Process capability, 6-Sigma, Lean Manufacturing, Quality system, Case study.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 522 or EGR 598 (Statistics for Engineers)
EGR	523	Finite Element Mod & Analysis	Analyzes machine elements, frames and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy. Introduces the fundamentals of finite element analysis as well as providing hands-on experience using finite element software to model, analyze and design structures.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 523 or EGR 598 (Finite Element Modeling & Analysis)
EGR	525	Lean Systems	Creates a framework and model of lean engineering and a methodology for applying lean practices to systems engineering as a basis for lean product development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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EGR	530	Principles System Engineering	Engineering is increasingly about complex systems. Addresses scale, scope and complexity increase that engineers need to consider to bring together technical and social issues in a highly integrated way as they design flexible, adaptable, robust systems that can be easily modified and reconfigured to satisfy changing requirements and new technological opportunities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; EGR 520
EGR	535	IDEAS	Innovation plays an important role in the evolution of the field of engineering education. Explores innovation processes in a variety of contexts, including (but not limited to) engineering education research and methods, theory, dissemination, teaching and training within formal and informal academic settings.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	546	Robotic Systems II	Design of robotic systems focusing on dynamics, modeling and controlling a robot.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 456 or EGR 546 or EGR 598 (Robotics Systems II)
EGR	550	Mechatronic Systems	Presents a clear and comprehensive approach to the area of mechatronic systems, including the sensors, actuators, microcontrollers and applications which are found at the heart of everyday products and devices. Provides a systems-level approach to integrating these elements into a functioning device.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student
EGR	555	Mechatronics Device Innovation	Project-based course on the design of mechatronic devices to address needs identified by hospital-based clinicians. Students work in teams with physicians to develop a novel mechatronic device while in parallel an entrepreneurial mindset is fostered. The design process includes: needs finding; problem identification; prior art searches; strategy and concept generation; estimation; sketching; sketch modeling; machine elements, ergonomics and prototyping. Emphasizes the development of creative designs that is motivated by analytical models. Also includes lectures on specific aspects pertinent to novel devices including intellectual property, marketing, licensing and startups and lean launchpad for startups, provided by Skysong Innovations. Significant communication component as students present ideas in class and at an industry forum. Students also write a publication quality final paper, which they are encouraged to submit to a conference or journal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only EGR 494 (Mechatronics Device Innovation) or EGR 555 or EGR 598 (Mechatronics Device Innovation)
EGR	556	System Control & Optimization	Topics include state-space models, Lyapunov stability, controllability and observability, optimization and optimal control, and nonlinear systems and control. Includes both theories and real-world engineering examples/demos, and students apply the advanced control system approaches to self-selected course projects. Prior knowledge in classical linear control theory is necessary to be successful in this course.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506
EGR	557	Foldable Robotics	Organized around new types of robots being developed in research labs and industry across the country, foldable robots are designed and built using layered, flat sheets of a wide variety of materials and folded up to create both form and motion. Design of these devices begins with initial prototypes and proceeds through implementation and optimization, with a focus on application-specific projects that seek to solve problems of cost, parallelism, complexity and time using a relatively fast and easy prototyping method. Students delve deeper into the analytical problems associated with foldable mechanisms in topics such as design, kinematics, manufacturing, dynamics, simulation, optimization and stiffness analysis. Familiarity with programming fundamentals, scripted languages like Python or Matlab, linear algebra, differential equations, calculus, trigonometry and vector math is strongly suggested.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only EGR 557 or EGR 494 (Foldable Robotics) or EGR 598 (Foldable Robotics)

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EGR	560	Vehicle Dynamics and Control	Covers modeling, estimation, control and optimization of a typical vehicle (sub)system dynamics. Recent advances in automotive technology, such as vehicle electrification and automated/connected driving, further complicate vehicle (sub)systems as nonlinear multi-input-multi-output systems with unmodeled dynamics, structure uncertainties and external disturbances. Thus, effective vehicle control design requires to sophisticatedly combine advanced control theory with knowledge of vehicle characteristics. To achieve this goal, the course introduces a variety of modeling, advanced control, estimation and optimization techniques for typical vehicle (sub)systems. Discusses applications of control theories to various vehicle (sub)system dynamics through examples inspired by pertinent research projects. Extensively utilizes co-simulation between Matlab/Simulink and CarSim® for vehicle dynamics analysis, vehicle control design and verification.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only EGR 560 or EGR 598 (Vehicle Dynamics and Control)
EGR	565	Qualitative Meth in Eng Ed	Provides a deep, empirical exposure to interpretive research methods in engineering education research.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	572	Quant Meth in Eng Ed Res	Specific quantitative analysis techniques used in the field of engineering education, with special focus on instrument design, ANOVA and multiple regression. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	574	Eng Sys in Context	Provides a systems understanding of current trends in engineering education research to engage engineering education research graduate students with the latest developments in the field in which they will situate their research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	576	Examining Inequities in STEM	Provides a novel opportunity for students to learn about inequities that have persisted in STEM and to challenge the way inclusion is cultivated. Challenges students to become aware of the past, give context to the present and think creatively about new ways forward. Additionally, takes an entrepreneurial approach toward being inclusive. As both teachers and students, in developing critical consciousness, it is imperative that we refute the banking approach to education and constantly work to critically consider our realities. Adopts an inclusive, student-centered pedagogy. Facilitates learning through activities that provide exposure to and experience with critical content.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or non-degree seeking graduate student; Credit is allowed for only EGR 576 or EGR 598 (From Then Until Now: Examining Inequities in STEM)
EGR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	581	Sim. Manufac. Systems	Specific modeling and simulation tools used to understand and optimize manufacturing systems operations, with an emphasis on both model building and statistical interpretation of model output.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 581 or EGR 598 (Simulating Manufacturing Systems)
EGR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EGR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	602	Princ Ind Res	Practice of key components of independent research that include project planning, literature survey, interview, data collection and analysis, proposal development, technical writing and presentation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	608	Adv Simulation	Simulation has a central role in design, operation, optimization and evolution of complex systems. There are many tools but they have a common need for rigorous science/math, parameterized models and realistic validation. Uses and compares five common platforms.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	611	Complex Engineering Systems	Advanced concepts in design and evaluation of engineering systems: subsystems, systems architectures and seamless integration of subsystems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	671	Application of Qual Methods	Provides a deep, situated exposure to making and handling data in qualitative engineering education research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 565
EGR	673	App Quant Meth Eng Ed Res	Applies quantitative analysis techniques to an engineering education research project. Specific focus on data collection, instrument development, and ANOVA/regression analysis techniques. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 572
EGR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	504	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
ELL	515	Structured Engl Immersion (SEI)	Addresses the role of language and culture in teaching, program types, and specific SEI strategies for teaching English Language Learners (ELLs).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	516	Advanced SEI Methods for ELLs	More fully prepares teachers for linguistically diverse classrooms in which there are students learning through SEI methodology.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	501	Env Life Sci: Grand Challenge	Introduces first-year graduate students to a range of fields related to the Environmental Life Sciences graduate program. Co-instructed by an interdisciplinary faculty team, combines overview lectures and active discussion of current literature in the fields of inquiry. Culminates in synthetic collaborative research proposals on topics that foster transdisciplinary approaches to environmental life science questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
ELS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		

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ELS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	501	First Workshop and Orientation	Covers the four learning threads of the EMSL program: global context, strategic sustainability, communications and sustainability, and sustainability leadership. Students engage in meaningful group discussions, field trips and hands-on experiences directly tied to sustainability. Faculty, guest speakers and practitioners engage students in critical thought and apply sustainability theories into real-world scenarios.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): Executive Masters for Sustainability Leadership major
EMS	502	Global Context I	Examine global sustainability issues, determine materiality for their organization and practice communicating this information to critical stakeholders, i.e., translating the complex global context into compelling organizational realities. Applies tools to identify relevant risks and opportunities within their organizational context and investigates potential responses.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	503	Strategic Sustainability I	As a foundational course in strategic sustainability, focuses on sustainability as a strategic lens. Explores the interface among strategy, sustainability and ongoing success, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Identifies the different levels and implications of organizational maturity from a strategic sustainability perspective. Engages in systems mapping, planning and prioritizing methods, tools and techniques to identify and assess strategic opportunities.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	504	Comm & Sustainability I	This foundational course for professional communications aims to create chief sustainability storytellers. Helps students survey their internal communications environments, understand their target audiences and their unique customer centricities, and develop their voices through the use of proven story structures and techniques.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	505	Sustainability Leadership I	Focuses on emerging sustainability leadership. Students meld powerful and traditional leadership skills while challenging their prior knowledge with a multiple lens examination of leadership in a sustainability context. Provides a view of oneself to prepare students to better understand others. Students create the first phase of their personal plans for their unique needs and individual growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	506	Global Context II	Building on the skills gained in previous course work, explores proactive response strategies to material global sustainability challenges and opportunities. Examine how organizations can evolve from risk avoidance and compliance to innovation and thought leadership and explores what role they can play as sustainability leaders.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 502

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EMS	507	Strategic Sustainability II	Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization both internally and externally. Students apply and integrate various science-based methods, used successfully by organizations large and small, for developing flexible action platforms for sustainable enterprises. Expects students to create a strategic vision and action plan for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 503
EMS	508	Immersive Experience	The EMSL program focuses on sustainability leadership and organizational design and development; students directly interact with numerous executive-level sustainability leaders and strategists who work in diverse organizations. During a week-long stay in Washington D.C., EMSL students also interact and work on teams with other members of their student cohort. The final assignment is development of a plan for a sustainability leadership capstone project.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership - Executive EMLS student; minimum 3.00 GPA
EMS	509	Comm & Sustainability II	Focuses on audiences and looks at how and where students are telling their stories of sustainability. Students map internal, external and target audiences/markets, strategize channels to reach them with their sustainability stories, and create multi-channel communications plans that incorporate modes of engagement for all audiences.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 504
EMS	510	Sustainability Leadership II	Challenges prior definitions of systems, responsibility and community from a sustainability and leadership perspective. Also provides a toolbox for leading with sustainability as a fundamental success platform. Provides information needed for students to better understand others, a necessary skill to be able to persuasively lead others to transform their organization into a sustainable enterprise. The focus shifts away from being centered around oneself and towards a focus on audience/stakeholders. Students continue to develop their personal leadership skills.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 505
EMS	511	Global Context III	Expands student perspectives beyond the needs of their organizations and considers what could be gained from industry and cross-industry collaborations. Assesses the implications of changes in leadership perspectives to their organizational contexts.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 506
EMS	512	Strategic Sustainability III	Focuses on expanding efforts for strategic planning and sustainable success beyond the bounds of a given enterprise through strategic collaboration, partnering, innovation and resource development. Applies strategic sustainability as a tool for developing synergistic collaborations and driving innovation for more sustainable enterprises and enterprise systems. Also develops sustainability-informed collaborative approaches to identify and garner resources for strategic imperatives.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 507
EMS	513	Comm & Sustainability III	Ignites the storyteller within as students learn to think like authors; craft their stories in scenes; and produce their presentations to entertain, educate and engage their audiences to move them to action. Reveals the students' transformation into courageous storytellers in presentations that combine their compelling narratives with captivating visual storytelling. Also creates social media editorial calendars to publish their stories to help express their thought leadership in sustainability online. By the end of this course, students learn how to own any room, from the boardroom and break room to the chat room and living room.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 509
EMS	514	Sustainability Leadership III	Focuses on transformational leadership for global success, which requires students to identify and apply pathways to inspire, persuade and influence others to act toward a shared global vision. Some of the challenges that all future sustainability leaders face are future orientation; reframing organizations to be globally scalable yet locally focused; and redefining success and growth using sustainability as a success lens. These are just a few of the challenging tasks that sustainability leaders face. Importantly, sustainable leadership involves being an effective change leader, and this course provides the tools and learning needed to initiate and sustain change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 510
EMS	515	Capstone	In this online-only capstone course, students complete drafts of the major deliverables leading to the completion of their capstone. Throughout this process, faculty advise and provide feedback to students.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 513, 514

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EMS	516	Capstone Course EMSL Students	Final and culminating course in the EMSL sequence. As such, via initiation of a sustainability project, students apply knowledge and skills learned in all preceding EMSL courses and, especially, what was learned during the "immersive" course taught in Washington D.C. The final project an ideation and proposal for a sustainability leadership project in a specific organization. Thus, students actually initiate that project, track and report its progress, and reflect on the experience going from plan to implementation.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 508
EMS	522	Mastering the Global Context	Leaders in any organizational context face an increasingly connected and transparent world where social and environmental issues must be weighed in everyday decisions, requiring increasingly more proactive response strategies to meet stakeholder expectations and adapt to market and policy dynamics. Explores iconic sustainability issues and trends and their impact on their organization, institutions, communities and stakeholders. Applies tools to identify the relevant risks and opportunities within their organizational context and evaluate and prioritize relevant solutions and management approaches.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	523	Strategic Sust and Leadership	As sustainability becomes a core strategic goal of any organization, it impacts all aspects of the organization from informing risk and reward to the definitions and dimensions of innovation and overall success. Explores the interface between strategy and sustainability, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization. Explores and applies multiple sustainability-informed approaches, methods and tools to identify, assess and recommend strategic opportunities and adaptable action-pathways. Upon completion, students should be able to use strategic-sustainability knowledge to integrate and apply emerging sustainability approaches and to create strategic visions and action plans for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	524	Sustainability Storytelling	Fundamentals of applying storytelling to sustainability. Leads students through the power of storytelling and effective communications in modern business, nonprofit and government settings. Discovers the why of storytelling, and the neuroscience and anthropology behind its effectiveness. Students learn about communication styles within leadership, their own personal communication strengths and weaknesses, discern the barriers to persuasive communication and storytelling within sustainability, how to remedy common communication missteps, and how to better understand and engage audiences by making them the "hero of the story." Uses digital tools to create and deliver compelling sustainability communications and presentations to any audience, anywhere to enhance the efficacy of sustainability leadership within and outside of an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	525	Transformative Leadership	Melds traditional leadership applications with powerful skills aimed to develop or reawaken innate desires to effect change. Challenges prior knowledge and assumptions with multiple lenses of leadership within a sustainability context while teaching how to lead others. Critically examines prior definitions of systems, responsibility and community from the perspective of sustainability and leadership and provides a toolbox for leading with sustainability as a fundamental success platform. Students create a personal leadership plan for their unique needs and personal growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	586	Intro to MSL Capstone	Students select and prepare for their final capstone project in the MSL program. Students have an opportunity to present and discuss their concepts and plans with faculty and with other students in the cohort. Students also learn project management techniques for completing their capstone project.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability Leadership MSL student; EMS 502; EMS 503; EMS 504; EMS 505; SOS 501
EMS	587	MSL Capstone Prep	Students take their culminating capstone project from proposal to hands-on implementation. Students connect, network, leverage, test, adapt and finally implement their capstone projects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): EMS 586

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EMS	588	MSL Capstone	Students complete and fully implement their capstone projects.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 587
EMS	589	MSL Capstone Project Prep	One challenge for sustainability leaders is the translation of an idea to an actionable project or program which can lead to sustainable outcomes. Guides students through the initiation and planning stages of a sustainability project, going from theory to hands-on implementation. The capstone is the student's idea in action, allowing him or her to learn to connect, network, leverage, test, adapt and finally implement sustainability solution.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 522; EMS 523; EMS 524; EMS 525; SOS 508; SOS 509
EMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	101	First-Year Composition	Discovers, organizes and develops ideas in relation to the writer's purpose, subject and audience. Emphasizes modes of written discourse and effective use of rhetorical principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): All students; For students for whom English is not the native language, enroll in ENG 107 (or WAC 107).
ENG	102	First-Year Composition	Critical reading and writing; emphasizes strategies of academic discourse. Research paper required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	105	Adv First-Year Composition	Concentrated composition course for students with superior writing skills; intensive reading; research papers; logical and rhetorical effectiveness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ACT English score of 26 or above, or SAT Verbal score of 660 or above (or SAT Verbal score of 620 or above if taken before 2016), or Accuplacer score of 8 or above; Credit is allowed for ENG 101 or ENG 105 OR Visiting University Student
ENG	107	First-Year Composition	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prereq(s): TOEFL score 560PBT/220CBT/83iBT+, or IELTS score >=6.5, or Global Launch ENG Prof score 80+, or ACT English score >=19, or SAT Verbal score >=520 (SAT Verbal score >=470 if before 2016), or Accuplacer score >=5 OR Visiting University Student
ENG	108	First-Year Composition	For students for whom English is not the native language. Critical reading and writing; emphasizes strategies of academic discourse. Research writing required. Satisfies graduation requirement of ENG 102.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only AME 130 or ENG 130 OR Visiting University Student
ENG	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): freshman standing; maximum 25 hours

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ENG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ENG	200	Critical Reading & Writing/Lit	Introduces the terminology, methods, and objectives of the study of literature, with practice in interpretation and evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	201	World Literature	Classical and medieval periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	202	World Literature	Renaissance and modern periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	203	Intro to Health Humanities	Introduces the field of health humanities. Through readings in cultural studies of literature and other media, history of medicine, bioethics, disability studies, cross-cultural and global health, and related scholarly areas, introduces some of the fundamental challenges and debates in this growing interdisciplinary field. Also addresses questions of medical professional ethics and teaches structural awareness of the sociocultural aspects of health and health care.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	204	Topics in Contemporary Lit	Topics in contemporary literature, which may include narrative and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	205	Intro to Writing, Rhet, Lit	How do we understand the ways in which people in systems—both small and large—social, political, and economic, throughout the world use language and other symbolic resources to carry out work? Three fields of study take this kind of questioning especially seriously: studies in writing, studies in rhetoric, and studies in literacy. Inquiry—that persistent, deliberate commitment to question and to build methods sufficient to that questioning—is a generative force in each of these fields of study. Familiarizes students with such questioning traditions and to help them judge for themselves what each is good for. The goal is to strengthen your own repertoire and decision-making power for producing and circulating work (widely defined across material, print, and digital media) that matters in our risk-ridden world. Quite simply, then, this is a course in asking good questions and in evaluating responses to situations that spur questioning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	206	Intro to Literary Studies	Introduces the terminology, methods and objectives for interpreting and writing about literary and cultural texts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	207	English Language/Cultures I	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107; ENG 108
ENG	208	English Language/Cultures II	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107 with C or better; ENG 108 with C or better
ENG	210	Intro to Creative Writing	Beginning creative writing in genres other than poetry and fiction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	211	Intro to English Studies	Introduces key terms and conventions for analyzing and interpreting diverse literary and cultural texts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	213	Intro to the Study of Language	Language as code: phonetics, phonology, morphology, and syntax; the lexicon; language acquisition; sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	214	English Grammar and Usage	Fundamentals of English grammar (word and phrase structure), English usage (punctuation, grammatical correctness), and grammatical and usage theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	215	Strategies of Academic Writing	Advanced course in techniques of analyzing and writing academic expository prose. Writing is research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	216	Persuasive Writing Public Issue	Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. Papers are research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	217	Writing Reflective Essays	Critical examination of the influences discourse has on formation of identity; narrative analyses of self and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	218	Writing About Literature	Advanced writing course requiring analytical and expository essays about fiction, poetry, and drama.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	220	Gender, Media and Culture	Introduction to gender and the media including magazines, films, advertising, new media, and other popular culture forms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Credit is allowed for only ENG 220 or WST 220
ENG	221	Survey of English Literature	Medieval, Renaissance, and 18th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	222	Survey of English Literature	Romantic, Victorian, and 20th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	228	Introduction to Shakespeare	-	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 228 or 294 (Shakespeare for Teachers) OR (Introduction to Shakespeare)
ENG	229	Love and Lust in Medieval Lit	The medieval period, roughly 600-1500, cannot reasonably be called the "dark ages." Indeed, the Middle Ages provides us with a corpus of literature replete with complex characters struggling to live and love, dealing with sin and lust, unity and diversity, faith and reason within a tumultuous cultural milieu and religious rigor, all of which are feeling the winds of changes. Explores medieval literature, noting the astonishing differences from our own time, as well as surprising similarities. Western civilization, our own 21st century, for better or for worse, is indebted to the love and lust of the medievals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 229 or 294 (Love and Lust in Medieval Lit)
ENG	230	Introduction to Film Studies	Introduces the style and cultural significance of feature films.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	235	Intro to Contemp Theory	Introduces key ideas and concepts in contemporary critical and cultural theory. In addition to the "posts"--postmodernism, poststructuralism, post-Marxism, postcolonial studies, post-feminism and posthumanism--explores new theoretical formations that have emerged in response to our contemporary social condition, such as queer theory, trauma theory, disability studies, cognitive studies, the new "object-oriented" philosophies and materialist theories. And then there's the "trans" domains--transnationalism, transgender studies and transhumanism--which, like so many contemporary theoretical formations opens up new perspectives on where and how we live, who we are and even what we are. The contemporary theories studied in this course provide the tools for understanding 21st-century life and the limits and enjoyments of our humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 235 or ENG 294 (Literary Theory & Interdisciplinary Studies) or ENG 294 (Introduction to Contemporary Theory)
ENG	241	Literatures of the US to 1860	Surveys literary movements and genres from colonization to the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	242	Literature of US Post 1860	Surveys literary movements and genres from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	243	Intro to Writing Family Hist	Interdisciplinary writing course on theories, methodologies, and issues in writing family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	244	Intro Research Fam Hist	Introduces research methods in family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	245	Popular Culture Issues	Selected topics in various forms of popular culture related to written texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	287	Beginning Workshop Poetry	Beginning writing of poetry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	288	Beginning Workshop Fiction	Beginning writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	301	Writing for the Professions	Advanced practice in writing and editing expository prose. Primarily for preprofessional majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student

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ENG	302	Business Writing	Advanced interdisciplinary writing course designed to improve the workplace writing competence of W. P. Carey School of Business professional and preprofessional students. Lecture, discussion, case studies, cooperative learning, interactive, Internet, student presentations.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): W. P. Carey major; ENG 102, 105, or 108 with C or better; minimum 55 hours or junior standing; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student
ENG	303	Classic Backgrnds: English Lit	Readings of Greek and Latin literature in translation as they relate to literature in English.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	304	Critical Theories and Methods	Covers ideas and concepts in contemporary critical and cultural theory.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	305	Interpretive Theory	Develops interpretive practices necessary for English studies.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	307	Writing Science Fiction	Writing science fiction, primarily the short story.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	308	Form and History/Culture	Examines how literary and rhetorical forms are situated both historically and culturally.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	309	Rhetoric for Writers	Students identify, analyze and employ key concepts and theories of rhetoric to understand and compose written texts.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	310	Intermediate Creative Writing	Intermediate creative writing in genres other than poetry, fiction, or science fiction.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 with C or better OR Visiting University Student
ENG	311	Persuasive Writing	Advanced writing course that focuses on persuasive writing for diverse audiences.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	312	English in its Social Setting	Introduces the sociolinguistic study of the English language.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	313	Phonology and Morphology	The study of language sound-structure (phonology) and word-structure (morphology) in the framework of current linguistic theory.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; ENG 213 or SLC 201 with C or better OR Visiting University Student
ENG	314	Modern Grammar	Modern descriptive models of English grammar.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	315	Medieval Lit in Translation	Medieval literature (insular and continental) in translation, from Beowulf to Malory (excluding Chaucer), emphasizing cultural and intellectual backgrounds.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
ENG	317	Cross-Cultural Writing	Cultural differences and their impact on writing and/or their role in miscommunication and misinterpretation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	318	Life and Death of Lang	The history of language development, spread and contraction as well as thinking on where language may be going in the future. Discusses how languages differentiate and become new languages, how they mix with each other and how the development of writing can change this process. Maintains a focus on the ways speakers from different language communities have found to communicate through pidgin languages, bilingualism and languages of wider communication. Moreover, discusses the invention of new varieties and languages by people who feel their current choices do not fit their needs. Lastly, in considering what might be needed in the future, addresses issues such as machine translation, brain-to-brain communication, aspects of intergalactic communication posed in science fiction and interspecies communication.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 318 or ENG 394 (The Life and Death of Languages) OR Visiting University Student
ENG	319	Future of English	This transdisciplinary course investigates what varieties of English are currently used by whom and for what purposes, and attempts to predict the future of English and its significance at the individual, national and global levels.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 319 or ENG 394 (Future of English) OR Visiting University Student

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ENG	320	Medievalism in Modern Culture	Studies the representation of Medieval narratives, characters, themes, myths, and images in modern culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	321	Shakespeare	Readings in Shakespeare's major comedies, tragedies, histories, romances and/or poems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	322	Westerns: Film & Short Stories	A survey of classical short stories and recent films. Focuses on Wister, L'Amour, Grey and Leonard.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 322 or ENG 494 (Westerns: Films and Short Stories) or ENG 494 (Westerns: Movies and Short Novels)
ENG	323	Rhetoric and Grammar	Practical course taught in the computer lab. Emphasizes rhetorical strategies and grammar for writers.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	324	Horror: Films & Short Stories	A survey of major writers since 1800, and of classic filmmakers. The historical development of horror in relation to Gothic and grotesque short stories and films.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	325	Restoration & the 18th Century	Writers and movements in nondramatic literature of the restoration and early 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	326	English Drama 1660-1800	English drama 1660-1800.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
ENG	327	English Studies Research	How to evaluate and conduct various research methods for different areas of English studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	328	The Novel to Jane Austen	From origins of prose fiction through the 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	329	19th-Century British Fiction	Includes such authors as Austen, Dickens, Eliot, and Conrad.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	330	19th-Century British Poetry	Romantic and Victorian poets studied in context.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	331	American Drama	Major works in the development of American drama from its beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	332	Race&Ethnicity in Lit/Culture	Investigates racial and ethnic dynamics through literature and culture.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	333	American Ethnic Literature	Examines America's multiethnic identity through works of literature that depict American ethnic, gender, and class sensibilities.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
ENG	335	American Poetry	Themes and developments in American poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	336	Women, Film and Culture	Critical examination of the way films can reflect, reinforce or challenge mainstream cultural ideas about women.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 336 or WST 330 OR Visiting University Student
ENG	337	Major American Novels	Major American novels studied in their ethnically diverse literary, historical, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	338	Protest Literature	Examines traditions of social protest literature across a variety of historical periods and literary and rhetorical genres.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, or ENG 108 with C or better; minimum 24 earned hours; Credit is allowed for ENG 394 (Banned Literature), 338 or 440 (American Protest Novels)
ENG	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Drm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Drm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Drm Wrk:Pg to Stg&Scrn) OR Visiting University Student
ENG	342	20th-Century British/Irish Lit	Major works in the development of literature since 1900, studied in their historical and cultural contexts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ENG	343	Crime: Film & Short Stories	A survey of classical crime fiction and recent crime films. From Poe, Doyle, Hammett and Chandler through Sayers, Highsmith, Grafton and Paretsky.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 343 or AMS 494 (Crime: Stories and Movies) or ENG 494 (Crime Fiction: Film & Short Stories)
ENG	344	Int Family History Research	How to locate records, analyze and interpret evidence, and write a family history narrative.	N	RSC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	345	Selected Authors or Issues	Different topics may be offered. Film topics with lab may carry 4 credits. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
ENG	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ENG	349	Global Literary Studies	Studies multiple literatures and cultures across the globe, often deploying transnational and comparative methodologies.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	350	Studies in Lit Hist&Traditions	Studies of one or more literary traditions or historical movements	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	352	Short Story	Development of the short story as a literary form; analysis of its technique from the work of representative authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353 OR Visiting University Student
ENG	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ENG	355	European Dramatic Traditions	Development of European drama since Aeschylus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	356	The Bible as Literature	Readings in the Jewish and Christian Scriptures in modern translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	359	Indigenous American Literature	Selected oral traditions and contemporary works by Indigenous American authors.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	360	Western American Literature	Critical examination of ideas and traditions of the literature of the western United States, including the novel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	361	Scriptwriting	The art of scriptwriting using 10-minute plays as the platform. Designed to help students learn craft techniques and to expose them to the various forms of the 10-minute script. Includes lectures, writing assignments, discussion, and criticism.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): first-year composition; credit is allowed for only ENG 361 or 394 (Scriptwriting)
ENG	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
ENG	364	Women and Literature	Approaches to issues of gender and representation in literature by and about women.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	365	History of Film	Development of motion pictures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3-4	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	366	Literature on Film	Studies literary texts and their adaptation to film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	367	Environmental Literature&Film	Evaluates literary texts and films that address interconnected cultural, historical, and environmental issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	368	Art of the Personal Essay	Writing personal essays drawing on both research and personal experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	369	Science Fiction Studies	Development of science fiction and fantasy literature. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	370	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 35 hours; Credit is allowed for only BIO 315 or ENG 370
ENG	371	Rhetoric of Environmental Mvmt	Examines how language is used to conceptualize, clarify/obfuscate, and resolve problems among those who concern themselves with the disposition of natural resources.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	373	Pub in Literary Magazines	Analyzes the history, publishing preferences, editorial staff, and submission guidelines of literary magazines.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	374	Technical Editing	Fundamentals of editing technical and professional materials. Role of editors in analyzing, revising, and polishing manuscripts. Successful writer-editor dialogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	375	Titans of Business	Explores leading CEOs and corporations from a humanities perspective.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	376	Writing a Personal History	Interdisciplinary writing course emphasizing theories, methodologies, and issues of composing personal histories.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 376 or VTS 376 OR Visiting University Student
ENG	377	Editing Family Hist for Pub Auds	Fundamentals of editing family writing. Role of editors in analyzing, revising, and polishing manuscripts for publication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	378	Environmental Creative Nonfict	Lectures, discussion, and criticism concerning the literary history of nature writing and techniques of writing environmental creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	379	Travel Writing	Studies the genesis of travel writing, what theories inform travel writing, and the various genres of travel writing today.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	384	Gender&Sexuality Lit/Culture	Approaches to issues of gender and sexuality in literary and cultural texts. May focus on historical period, literary movement, genre, single author, literary theory, theme or other field of study.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	385	Career Develop English Majors	Theoretical and practical aspects of career planning related to skills and interests developed in English studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	386	American Gothic	The development of modern American Gothic as a literary form from Poe to Oates. Emphasizes the short story.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	387	Intermediate Workshop Poetry	Intermediate writing of poetry. Requires term paper or equivalent out-of-class written work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 287 with C or better OR Visiting University Student
ENG	388	Intermediate Workshop Fiction	Intermediate writing of fiction. Requires term paper or equivalent out-of-class written work.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 or 288 with C or better OR Visiting University Student
ENG	390	Methods of Inquiry	Studies in writing, rhetoric and literacy are multiple and diverse because these areas deal with complicated ways people create meaning, circulate meaning, and understand meaning in a variety of contexts and a variety of modal formats. Examines ways of developing research problems and questions, designing studies and conducting, reading and evaluating research in the areas of writing, rhetoric and literacy. Qualitative methods (e.g., case study, ethnographic methods, interviewing); historical methods (e.g., archival, document analysis and artifact interpretation); rhetorical analysis and discourse analysis; feminist approaches to research and analysis; and recent advances in research in the fields of rhetoric, writing and literacy studies. Investigates the many attitudes and assumptions about creativity and cultural work that make methods of inquiry as controversial as they are significant to contemporary public life.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	391	Writing in Context	How do we understand the ways in which people use written language to carry out work in professional, academic, social and/or personal contexts? How does our understanding of the ways writing is produced for an audience shift between and among these different contexts? More importantly, how do writers adapt their writing practices in order to facilitate audience understanding as well as cultivate an audience's capacity for action? Familiarize students with rhetorical practices that position them to read, assess and respond to the rhetorical demands of a wide range of writing contexts. Strengthens students' existing rhetorical skill sets and problem-solving capacities for producing and circulating work (widely defined across material, print and digital media) that responds to a range of problems in an applied manner. Assesses the rhetorical demands of writing contexts and in developing and producing tailored, audience-specific texts that forward work in complex, interdisciplinary environments.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	392	History of Rhetorical Theory	Begins in ancient Greece with the rise of the art of public oratory (known as rhetoric) and ends in the present, an era dominated by mass media. Engages in a great deal of reading--lots of very old writings as well as some newer ones. Covers a great many topics and ideas; focuses by continually returning to the subject of public discourse. Challenging readings designed to emphasize the connection between systems of philosophy (or "worldview") and systems of communication. By focusing on big ideas, students become a better thinker and communicator in any chosen career.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	393	Theories of Literacy	While theories of literacy have, for the most part, been determined by the primacy of reading and writing script, more recent scholarship in literacy theory and history has served to challenge such limitations. Many contemporary perspectives on literacy view scripted text as one component of complex acts and practices of written communication that occur in social contexts. Studies that examine such communicative acts in their local contexts reveal that literate practices and the texts that are produced are imbued with social and cultural values and traditions and the needs and desires of individuals. As the statements above illustrate, theories of literacy themselves are embedded within the values and assumptions of individuals, institutions, and academic specialization. Examines some of these theories, their influences on academic scholarship and pedagogy, the ideological assumptions that inform them, and how we might view these theories within broader social-cultural landscapes.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	400	History of Literary Criticism	Major critics and critical traditions in the Western world.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	401	Topics in Critical Theory	Major critical schools of recent decades--postcolonialist, psychoanalytic, deconstructionist, feminist, new historicist.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	403	Semantics	Program and methods of contemporary formal semantics. Characterizes knowledge of meaning as knowledge of truth conditions. The goal of semantics is thus to uncover the rules that allow the speakers of a language to know under what conditions any sentence is true; or in other words, to construct a theory of truth for natural language. Simple fragments including: predication, quantification, definite descriptions, simple temporal and modal expressions, and attitude verbs.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 314 with C or better OR Visiting University Student

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ENG	404	Studies 2nd Lang Acquisition	Specialized topics in second language teaching and learning, including theory, pedagogy, curriculum, and assessment.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better OR 8 credit hours of a second language earned within the last year; minimum 56 hours OR Visiting University Student
ENG	409	Analyzing Rhetoric	Provides students with the tools and methods by which the effectiveness, truthfulness, ethicality, and/or artistry of persuasive speech and language can be evaluated. Students take a systematic approach to analyzing rhetoric on a variety of selected topics.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 409 or ENG 494 (Analyzing Rhetoric: Fake News & Alternative Facts)
ENG	410	Writing for Publication	Lectures and conferences concerning techniques of writing for publication.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 and one 200-level literature course with C or better, OR New College undergraduate student with minimum 45 hours
ENG	411	Advanced Creative Writing	Advanced creative writing in genres other than poetry, fiction, creative nonfiction, or screenwriting.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 with C or better
ENG	412	Creative Nonfiction	Lectures, discussion, and criticism concerning techniques of writing creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310, 388 or 411 with C or better
ENG	413	History of English Language	Development of English from the earliest times to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 413 or LIN 517 OR Visiting University Student
ENG	414	Studies in Linguistics	Specialized topics in linguistics including phonology, syntax, semantics, pragmatics, discourse, language variation, and change.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better, OR 1 year language study and minimum 56 hours
ENG	415	Studies in Medieval Lit/Cultr	Medieval English and continental literature in translation, emphasizing cultural and intellectual backgrounds.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	416	Chaucer in Middle English	Yearly alternate between Chaucer's The Canterbury Tales and Troilus and Criseyde.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	417	Virtual Worlds/Global Communic	Explores the nature of virtual worlds and the multiple uses of these three-dimensional environments (also called metaverses) for new literate and global communications in the 21st century. Uses a combination of a textbook; Blackboard; popular virtual worlds, including Second Life (SL), and Internet resources (e.g., Web sites, e-discussion lists, YouTube videos) to explore the potential of virtual worlds. Explores the capabilities of several of the more than 70 virtual worlds for education, recreation, advancing social justice, global communication, socializing and networking. Participants critically examine the affordances of virtual worlds through readings, videos, online discussions, self-paced tutorials and brief reaction papers. Students receive demonstrations and guided tours by the professor and participate in individual and group explorations of virtual worlds	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for CMN 598 (Virtual Worlds) or ENG 417 or ENG 494 (Virtual Worlds) or MAS 598 (Virtual Worlds)
ENG	418	Renaissance Literature	Prose, poetry, and drama of the Renaissance Era with an emphasis on cultural history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	419	Writing in Digital Spaces	Focuses on the conventions and interconnectedness--the weaving of text, images, sound and video--of writing in a digital age. Increases awareness and understanding of how, perhaps now more so than ever before, writing requires specific attention to context, audience and meaning making. Emphasizes the theory and practical rhetorical conventions for social and digital media.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ENG 419 or ENG 494 (Writing in Digital Communities) OR Visiting University Student

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ENG	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prereq(s): ENG 101, 105, or 107 w/ C or btr; ENG 200 w/ C or btr; one 200-level lit course w/ C or btr OR New College ugrad std; ENG 101, 105, or 107 w/ C or btr; min 45 hours; Credit is allowed for only ENG 420 or IAS 420 OR Visiting University Student
ENG	421	Studies in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	422	Special Topics in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	423	Renaissance Drama	Topics, authors, and themes in the drama of the Tudor and early Stuart periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	424	Milton	Selected prose and poetry, emphasizing Paradise Lost, Paradise Regained, and Samson Agonistes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	425	Studies in Romanticism	Romanticism in continental, British, and American literature and culture.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	426	British Culture and Empire	Examines British imperial culture in art and literature, 1870-1914, and postcolonial theory.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	427	Studies 18th-Cent Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	428	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
ENG	430	Studies Victorian Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	431	Whitman and Dickinson	Evaluates the 19th-century American Literary Renaissance through the specialized examination of its poetry and authors in their historical context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student

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ENG	432	The American Renaissance	Novels, poetry, short fiction, and criticism of the major literary figures of the early to mid-nineteenth century.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR New College undergraduate student; minimum 45 hours OR Visiting University Student
ENG	434	Studies: Lit/Culture Americas	Literature and culture of North America, South America, and the Caribbean. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	435	Lits of Immigration/Diaspora	Specialized topics in literary and cultural representations of immigration and diaspora studied in an interdisciplinary context.	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	436	Studies Anglophone Lit/Culture	Literary, social, and cultural issues of English-speaking former colonial territories. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	437	The American Novel, 1900 -1960	Developments in theory and practice of major novelists.	N		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student
ENG	438	American Novel Since 1960	Major novelists of the period. Developments in theory and practice.	N		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student
ENG	439	Technoliteracies	Critically explores the nature of digital communications and expanded definitions of what counts as text and as literate expression in the 21st century. Emphasizes the 21st-century skills and abilities required for and fostered by digital communications (e.g., collaboration, multitasking, intertextual analyses) and examines the newest technologies that enable digital communications (e.g., digital storytelling, virtual worlds, social media, digital crafting, video gaming/modding). In doing so, focuses on the intersections of technologies and the arts as literate communications with implications for teaching and learning. Participants explore these topics through readings, videos and Web sites and by reflecting on their own experiences. Students respond to questions/prompts through online discussions, reflective thought papers, and media or virtual presentations.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours: Credit is allowed for only ENG 439 or ENG 494 (Technoliteracies) or MAS 598 (Technoliteracies)
ENG	440	Studies in Amer Lit & Culture	Various genres in their literary, political, theoretical, and historical contexts.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	441	Intro to Participatory Media	The spread of participatory media, ranging from zines, e-zines, podcasting and video production tools to video games and virtual worlds has led to significant changes in how we communicate, learn, collaborate, network and create. Introduces theory and research on participatory media and the changing nature of "literacy" in a media age to "literacies." Addresses key concepts and issues, such as language, identity, access and community. Explores these topics through engaging in readings, videos and Web sites; by reflecting on their own experiences; and by responding to questions/prompts through online discussions, thought papers, social media or virtual presentations.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours: Credit is allowed for only CMN 598 (Intro to New Media) or ENG 441 or ENG 494 (Intro to New Media) or ENG 598 (Intro to New Media) or MAS 598 (Intro to New Media) OR Visiting University Student
ENG	442	20th-C Brit/Irish Lit/Culture	Major literary genres (novel, poetry, and drama) in their cultural and historical contexts. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	443	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit for only ENG 443 or ENG 494 (Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student
ENG	444	Interdisciplinary Lit&Culture	Uses methodologies from literary studies and other disciplines to understand a topic or problem. Interdisciplinary areas may include fields such as environmental humanities or American studies, as well as other areas of interdisciplinary study.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	445	Studies in American Realism	Writers and influences that shaped the development of literary realism. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	446	Visual Narratives	Reads, analyzes and crafts visual narratives including graphic novels, picturebooks, films, commercials and videogames.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520 OR Visiting University Student
ENG	447	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
ENG	448	Studies in Irish Lit/Culture	Themes and problems pertaining to Irish literature, film, and social and cultural history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	449	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
ENG	450	The British Novel	Focuses on the British novel from the 18th century to the present.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	452	Studies in the Novel	May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	453	Studies in the American Novel	Poetics and politics of the novel, 18th through 21st centuries. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	454	Gender and Literature	Focuses on the representation of gender in literature.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ENG	455	Contemporary Women Writers	Critical examination of literature by contemporary women writers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
ENG	457	Studies in American Poetry	May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	458	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
ENG	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AFR 459 or ENG 459 OR Visiting University Student
ENG	460	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Hispanic, and Asian American.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR Integrative Sciences & Arts or New College undergraduate student; minimum 45 hours; Credit allowed for only ENG 460 or WST 467 OR Visiting University Student
ENG	461	Studies in Women and Lit	Advanced topics in literature by or about women.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	462	Africana Literature	Focuses on the literature of the African Diaspora, including texts from the Caribbean, the Americas, and Africa. May be repeated for credit when topics vary.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	463	African American Literature	Thematic and cultural study of African American literature.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	464	Great Directors	Studies the work of one or more influential directors.	N		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	465	Studies in Film	Advanced topics in cinema.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	466	Studies in International Film	Studies non-American narrative film.	N		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	467	American Film Musicals	A cultural history of American film musicals.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	468	Environmntl Literary Criticism	Evaluates the disparate critical practices that constitute what is the emerging literary project known as "ecocriticism" or "environmental literary criticism."	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	469	Science and Literature	Historical and theoretical links between science and literature, from Francis Bacon to the present, examined in cultural context. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	470	Symbols/Archetypes Child Lit	Various critical approaches and recurring themes studied in relation to classical and contemporary children's literature.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student

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ENG	471	Literature for Young Adults	Prose and poetry that meet the interests and capabilities of junior high and high school students. Stresses recent literature. A passing grade of at least "C" (2.00) required before students are permitted to student teach in English.	N		REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	472	Rhetorical Studies	Developments in theory and practice of major rhetorical inquiries.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	473	Crit Approaches Children's Lit	Reads picture books, chapter books and fairy tales and analyzes these texts through multiple critical lenses (e.g., feminist, Marxist, historical, structuralism, formalist).	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 473 or ENG 394 (Reading Children's Literature)
ENG	474	Review Writing	Advanced writing course exploring rhetorical approaches to writing reviews.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Completed ENG 102, 105, or 108 with C or better; Minimum 56 hours
ENG	475	Popular Periodical Writing	Advanced writing course analyzing and imitating genres in popular periodical writing.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Pre-requisite(s): Completed ENG 102, 105, or 108 with C or better. Minimum 56 hours
ENG	476	Studies in Folklore	Surveys the history, genres, and dynamics of folklore, with emphasis on oral traditions. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	477	World Literature	Readings in world literature, mostly outside the United States and England.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & G	Prerequisite(s) w/ C or better: ENG 101, 105, or 107; ENG 200; one 200-level lit course OR Integrative Sciences & Arts or New College ugrd std; ENG 101, 105, or 107; min 45 hours; Credit allowed for only ENG 477 or IAS 477 OR Visiting University Student
ENG	478	Studies in Modernism	Cultural, historical, and literary issues in American and European modernism.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	479	Studies in Postmodernism	Literary, social, and cultural topics in postmodernism. May be repeated for credit when topics vary.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	480	Methods Teaching English: Comp	Methods of instruction, organization, and presentation of appropriate content in the teaching of composition and other writing skills.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student
ENG	482	Methods of Teaching: Language	Methods of instruction, organization, and presentation of appropriate content in language and usage for junior and senior high schools.	N		REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s) w/ C or better: ENG 101, 105, or 107; ENG 200; one 200-level literature course OR Integrative Sciences and Arts or New College undergraduate student; ENG 101, 105, or 107; minimum 45 hours OR Visiting University Student
ENG	483	Methods Teach Sec Lit & Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR New College or Integrative Sciences and Arts undergraduate and minimum junior academic level and one 200-level (or higher) English course with C or better
ENG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	485	Digital Tools	Digital (online, electronic) tools as best utilized in language arts curriculum and instruction for junior and senior high schools. Addresses many practical classroom matters; broadens knowledge of Web 2.0 opportunities for teaching and learning. Creates a detailed inventory of the digital tools familiar to secondary students, and compares these to what a clever English teacher can access in a public school classroom. Imaginations, studies, and designs digital tools to enhance student achievement. Uses digital tools to increase student access to history and culture and opportunities for individuals to find and articulate their voices, as well as opens avenues for their creativity. Empowers the English language arts classroom with critical understandings of media, culture and public relations (digital information manipulation) and develops secondary students from passive consumers to literate participants in democracy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105, 108 and one other ENG course with C or better
ENG	486	Teaching Text	Approaches to texts (poetry, nonfiction and fiction) as best utilized in language arts curriculum and instruction for junior and senior high schools. Language arts teachers want all of their students to love literature and become immersed in the texts they assign (poems, short stories, plays, nonfiction and informative texts, and novels). Explores activities and philosophies for building a strong reading workshop in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into books, designs and experiences reading workshops based on innovative and effective teaching strategies. Offers hands-on strategies for supporting struggling readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105 or 108 and one other ENG course with C or better; Credit is allowed for only ENG 486 or ENG 598 (Teaching Text) OR Visiting University Student
ENG	487	Advanced Workshop Poetry	Advanced writing of poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 or 387 with C or better; Credit is allowed for only ENG 411 or ENG 487 OR Visiting University Student
ENG	488	Advanced Workshop Fiction	Advanced writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 388 with C or better; Credit is allowed for only ENG 411 or ENG 488 OR Visiting University Student
ENG	489	Scholarly Products	Students develop culminating projects that demonstrate comprehensive knowledge and command of skills within the field of English studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 87 hours OR Visiting University Student
ENG	490	Forms Theory Practice Poetry	Types, history, analysis of traditional forms, and contemporary adaptations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 411 or 487 with C or better; Credit is allowed for only ENG 490 or ENG 495
ENG	491	Topics for Advanced Research	Students define a conceptual question related to a specific topic in literary scholarship; conduct appropriate research; and craft a response or argument that assesses the question, the evidence and possible responses to it.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
ENG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ENG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
ENG	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Familiarizes students with the areas of research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ENG 501 or LIN 501

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ENG	502	Contemporary Critical Theories	Studies the principles and techniques of contemporary theory and criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	503	History of Narrative	Historical overview of narrative as a mode of discourse and communication. Begins with the study of influential traditional narrative forms from Biblical and classical sources and moves to study innovation in narrative, including flashbacks, interior monologue, nonlinear narrative and frustration of narrative expectations.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	504	Cross-Cultural Studies	Theoretical and analytical issues for comparative research across distinct cultural regions and traditions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	505	Narrative Research Methods	Addresses narrative and arts-based forms of qualitative research. Focuses on reporting study findings in narrative form.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	506	Methods Issues Tchng Language	Developing the language skills of native and non-native speakers through a process approach and advanced writing workshops in junior and senior high schools.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	507	Methods/Issues Teaching Comp	Up-to-date theory, practice, and implementation of secondary writing instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	509	Studies in Narrative Writing	Writing course focusing on specific kinds of narrative writing (e.g., blogging, travel writing). Regardless of particular topic focus, this course covers basic structural issues in narrative writing and gives students practical and applied experience crafting their own narratives for multiple audiences.	Y	SEM	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	513	Clssic Txts in Ldrshp/Stsmnshp	Encounters classic texts featuring analyses and discussions of important historical leaders and their actions. These texts both situate examples of leadership and statesmanship in their historical context, and highlight timeless principles of wise and effective leadership. Texts include Thucydides' History of the Peloponnesian War, Plutarch's Lives, Cicero's On Duties, Shakespeare's histories, and the writings and speeches of Abraham Lincoln.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 513 or ENG 513
ENG	514	Studies Experimental Narrative	Critical analysis of experimental or unconventional narratives, including nonlinear narrative, surrealist narrative and metanarrative. Course materials include both text and visual narratives.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	516	Literary Publishing	Explores various aspects of literary publishing, including market profile of journals, techniques for preparing submissions, role of literary awards and contests.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517
ENG	518	Scientific Narratives	Examines how fictional narratives have shaped popular constructions of science and how scientific works can be read as narrative. Coursework emphasizes critical thinking, discussion and argumentative writing.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	519	Superstition Review	Students collaborate to complete tasks that lead to the publication of one issue of the national online literary magazine Superstition Review.	N	PRA	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	520	Visual Narratives	Students read, analyze and craft visual narratives. Includes various types of visual narratives such as graphic novels, picturebooks, films, commercials and videogames.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520
ENG	521	Writing the Southwest	Cultural representation in twentieth-century narratives of the Southwest United States. Focuses on canonical and noncanonical texts and addresses multiple representations of race, time periods and genres in the Southwest literature.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	522	Narratives of Conquest	Critical study of narratives relating/responding to the conquest of the Americas from the fifteenth century to the present. Addresses conquest narratives that reflect the Spanish colonization period (1510-1810) and the United States colonization period (1848-1965) in the Southwest. Chosen texts illuminate themes related to the nature of colonial relationships, notions of barbarie/civilization and empire building	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
ENG	530	Old English	Study of Old English grammar, syntax, and phonology, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	531	Old English Literature	Intensive literary, linguistic, and cultural study of Old English literature.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	532	Middle English Dialects	Study of the principal dialects of Middle English, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	533	Studies in Medieval Literature	Selected topics in English literature from the 11th through the 15th centuries.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	534	Studies in Renaissance Lit	Selected topics and literary works studied in the contexts of English Renaissance culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	535	Study 18/19th Cent British Lit	Selected topics, issues, figures, and genres in British literature and culture of the 18th and 19th centuries.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	536	Study Amer Lit before 1900	Selected topics, issues, figures, and genres in 17th-, 18th-, and 19th-century American literature, including the literature of conquest and contact.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	537	Studies Mod/Contemp Brit Lit	Selected topics, issues, figures, and genres in British literature and culture after 1900.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	538	Studies Mod/Contemp Amer Lit	Selected topics, issues, figures, and genres in American literature and culture after 1900.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	539	Studies Mod/Postmod Lit/Theory	Selected topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	540	Tchg Young Adult Literature	Issues and new approaches in teaching contemporary literature in high school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	541	Teaching Texts	English language arts teachers want all of their students to love literature and become immersed in the texts they assign. Explores activities and philosophies for building a strong reading curriculum in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into texts, designs and experiences reading workshops based on innovative and effective teaching strategies. Students learn to create and implement reading units, literature circles, books of choice, literary tea parties, reading portfolios and final projects. Students also learn hands-on strategies for supporting ethnically and linguistically diverse readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 541 or ENG 598 (Teaching the Novel Grades 6-12)
ENG	542	Studies North Amer Ethnic Lit	Selected works studied in their cultural contexts from authors representing ethnic experiences in the United States.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	544	Studies Colonial/Postcol Lit	Selected topics, periods, theories, and figures in works by authors representing colonial and postcolonial regions and/or experiences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	550	Translation	Surveys theories and practices of translation into English. Considers target, audience and market.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	551	Rhetorical Traditions	Examines rhetorical traditions spanning ancient to contemporary rhetorics.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	552	Composition Studies	Selected topics in the history and theories of composition.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	553	Technologies of Writing	Critical study and cultural analysis of information technologies and their effects on various writing practices.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	554	Rhetoric Race, Class, Gender	Study of interdependent relationships of race, class, and gender in rhetorical constructions of self and community.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	556	Theories of Literacy	Examines various theories of literacy, their embedded values and assumptions, and their influences on academic scholarship and pedagogy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
ENG	560	Genre Studies	Critical analysis and study of works from a single genre or comparative analysis and study of multiple genres.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	561	Film Studies	Analysis and study of film genres, cinematic techniques, and problems of interpretation and representation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	562	Forms of Poetry	Types, history, criticism, and schools of theory of metrical form. Analyzes lyric, narrative, and dramatic poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	563	Forms of Fiction	Types, history, criticism, and schools of theory in the forms of fiction. Analyzes narrative and dramatic structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
ENG	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568
ENG	571	Foundations for Teaching ELs	Provides teachers with foundational knowledge of English language learner education including: identification and knowledge of English language learners in school contexts, the role of culture in learning, principles of second language acquisition and teaching, historical and current perspectives and policies related to English learner education, and the role of parents and communities in the education of English learners.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 580 (1 hour); Credit is allowed for only ENG 571 or ENG 598 (Foundations for Teaching English Learners)
ENG	572	Strategies for Teaching ELs	Supports teachers through a review of core knowledge of strategies and correlated assessments for the instruction of English learners. Teachers learn to assess EL language needs and apply appropriate teaching strategies for supporting learning English and content. Primary emphasis is in the integration of EL language and learning needs and implementation of lesson planning, strategies and appropriately leveled instruction. Teachers complete a semester-long inquiry on integrating course content into their teaching practices.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 571; Pre- or corequisite(s): ENG 580 (2 hours); Credit is allowed for only ENG 572 or ENG 598 (Strategy/Assessment/Core for Teaching Eng Learners)
ENG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	581	Methods Teaching Sec Writing	Emphasizes methods of planning, teaching, and assessing appropriate content in the instruction of composition and related skills in secondary classrooms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
ENG	582	Pedagogy	Overview of diverse theories of English instruction, including composition/rhetoric, linguistics and literary, with emphasis upon development and implementation for high school- and community college-level instructors.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): admission to any graduate program

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ENG	583	Methods Teaching Sec Lit&Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	597	Graduate Capstone Seminar	The capstone seminar is required for graduate students who must complete a culminating experience for a degree or certificate program.	N	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 597 or LIN 597
ENG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	601	Job Market Workshop	Focuses on the professional training of graduate students who pursue an academic or alt-ac (alternative academic) job. The material enables students to learn more about their professional opportunities and improve their chances on the job market. In a workshop format, some of the professionalization skills may include conference presentations, increasing professional digital presence, using job search tools, applying for internships and postdocs, writing job letters and grant proposals, managing stress, preparing for interviews, interviewing, presenting job talks and teaching demonstrations, and creating work/life balance.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 601 or ENG 791 (Job Market Workshop)
ENG	602	Adv Studies Theory/Criticism	Seminar courses on the principles, strategies, and applications of critical, cultural, and/or literary theory and/or criticism.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	603	Adv Studies Comparative Lit	Seminar courses on the problems, methods, and principles of comparative analysis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	604	Interdisciplinary Culture Stds	Seminar courses on work from literature, anthropology, and/or other disciplines, with an emphasis on cultural influences and functions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	606	Adv Studies in English Educ	Current research, issues, and trends in English education.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing—an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
ENG	632	Adv Studies Med/Ren Lit/Cultur	Seminar in works of the Medieval or Renaissance periods, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	635	Advanced Studies British Lit	Seminar courses on works produced in or about England, Scotland, and Wales, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	636	Advanced Studies American Lit	Seminar courses on works produced in or about the United States, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	639	Adv Studies Modernism/Postmod	Seminar courses on topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	642	Adv Ethnic, Anglo, Post C Lits	Seminar courses that consider the influence of cultural or geopolitical developments on the production and circulation of texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	651	Adv Studies/History/Theories	Selected topics in the history and/or theory of rhetoric.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	652	Advanced Composition Studies	Selected topics on particular composition theories, practices, pedagogies, and figures.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	654	Adv Studies-Rhet,Writ,Tech&Cit	Advanced study of theoretical, methodological, and pedagogical issues concerning the interrelationships among rhetoric, culture, writing, and writing technologies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	655	Disciplinary Discourses	Investigation of professional and disciplinary issues related to English.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	656	Studies Cross-Cultural Discrse	Theoretical and methodological issues in the comparative study of discourses between cultures and communities of practice.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	662	Poetic Genres	Creative writing courses in the long poem, the erotic image, death and transfiguration, reading and influence, and others.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	664	Mixed Genres	Creative writing courses in the prose poem, magical realism, the literature of obsession.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	665	Creative Methods	Creative writing courses in theory of the novel, poetics, story into film, and others.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	667	Issues in Writing Professions	Focuses on career preparation, resources, the role of writing in the community, creative writing, and the Internet.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENT	290	Entrepreneurship: Oppr Impact	How do you know if entrepreneurship is right for you? Don't have an idea today but want to work for a start-up? Focuses on developing an entrepreneurial mindset to prepare students for creating or participating in new ventures in the future, whether that is right now or after graduation. While this course does not contain the secret entrepreneurship code or the instruction manual for entrepreneurial success, it does provide a solid foundation of theory and practice that can set a budding entrepreneur on the right path. Students learn foundational entrepreneurship theories, participate in field activities where those theories are being put to the test, as well as learn to critically analyze their own ideas and other venture opportunities. Utilizes a mixture of teaching mediums including readings, videos, guest speakers, simulations, case studies and assignments completed as an individual and in teams.	N	LEL	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		
ENT	305	Princ of Entrepreneurship	Entrepreneurship, with an interdisciplinary basis, focusing principles that involve the startup of a new organization, as well as its management into a fully established firm. Specific discipline-based concepts range from marketing to finance and strategic management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.50 GPA; minimum 30 hours OR Visiting University Student
ENT	340	Creativity and Innovation	Teaches key concepts and useful tools and techniques of creativity and innovation to students in order to encourage development of creative skills and habits that can propel them in their career or guide them down a path to start a new venture of their own. Coursework and activities involve complex problem solving activities and relevant trend and environmental analysis in order to explore alternative approaches to challenges. Coursework includes both individual and team activities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.50 GPA; minimum 40 hours; Pre- or corequisite(s): ENT 305 with C or better if completed OR Visiting University Student
ENT	360	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s): Business student; ACC 241, 242, 271 with C or better OR Engineering student; minimum junior standing OR Non-Business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
ENT	440	Entrepreneurship	Prepares students for the challenges of assembling and growing high-potential innovative ventures through the use of analytical frameworks that encompass uncertainty inherent in entrepreneurship (or in entrepreneurial activity). In-depth discussion of cases provides a strong empirical foundation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; FIN 300, 302, or 303 with C or better; MGT 300, 303, or 310 with C or better
ENT	441	Entrepreneurial Management	Provides a framework for dealing with issues from an entrepreneur's perspective. Covers all areas of entrepreneurship from idea conception to prototype development, to testing, refining and harnessing resources. Covers readings and cases related to topics of business models, business plans, managing startups, business law, founder's issues, managing growth, broad business functions and overall strategic and financial positioning.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major or Entrepreneurship & Innovation cert student or Small Business & Entrepreneurship cert student; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	445	Business Model Development	Develops a complete strategic business model emphasizing the planning process undertaken by successful small business owners and entrepreneurs.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ENT 440 (or MGT 440) with C or better

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ENT	446	Venture Capital Experience	Students learn the details of the startup funding process and available resources. Exposes the history of venture capital and other types of capital, current trends, and the trends that are anticipated in the future. Students learn due diligence process as performed by investors and applies these concepts to building and growing their own ventures. Coursework includes both individual and team activities and is open to students in any major of study with the required prerequisite.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 240, 241, or 242 with C or better OR non-business student; minimum 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 446 (or MGT 446) or MGT 494 (Venture Capital Experience)
ENT	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 w/ C or better OR non-Business student; minimum 2.50 GPA; minimum 56 hours; Credit allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch) OR Visiting University Student
ENT	448	Corporate Entrepreneurship	Covers five general areas of corporate entrepreneurship: entrepreneurial orientation and corporate venturing; franchising the refining of business models; social venturing; and the extension of partnerships (e.g., joint ventures, strategic alliances).	N		LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 447 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
ENT	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
ENT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): minimum 45 hours
ENT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student
ENT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ENT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
ENV	103	Field & Lab Geology Enviro Sci	Covers the basic principles of geology, geochemistry and geophysics. Topics include plate tectonics, minerals, rocks, weathering, earthquakes, volcanoes, mountain building, geologic time, geologic resources (energy and water), global climate change. Students learn robust field and laboratory skills in geology during this 3-hour lab, with some field trips, that accompanies GLG 101 lecture.	N		LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): Environmental Science major; Corequisite(s): GLG 101; Credit is allowed for only ENV 103 or GLG 103
ENV	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ENV	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ENV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ENV	201	Environmental Science	Examines the functioning of the earth system and how it has changed over long and short time scales. Emphasizes understanding global processes and how human activities can disrupt these processes, changing the ability of our global environment to support life. Also emphasizes important feedbacks between biological and physical processes and their effects on the biosphere. Discusses the response of natural and managed ecosystems to global change along with prospects for the future.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 and 182 with C or better or BIO 281 and 282 with C or better; CHM 116 with C or better OR Visiting University Student

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ENV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ENV	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student
ENV	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
ENV	345	Spatial Analysis	Develops an understanding of the methods, tools and technologies used to collect, display, analyze and interpret spatial data in environmental science and natural resource management. Provides overview of geographic information system (GIS) applications in these fields. Basics of integrating the global position system (GPS) and remote sensing (RS) into GIS to solve problems in environmental science and natural resource management.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better
ENV	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
ENV	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
ENV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	410	Soil Science	Fundamental principles of soil science, including physical, chemical, biological and ecological properties. Applies these principles to explain the importance of soil as both a natural resource and ecosystem. Discusses the role of soils as the heart of terrestrial ecosystems, both natural and managed, and the importance of this key natural resource to environmental health and biological productivity. Explores how human activity and global change are impacting this vital natural resource and ecosystem that is crucial to life on earth. The laboratory component also introduces applications and standard methodology for investigating these principles.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 320 with C or better; CHM 116 with C or better; PHY 101 or higher with C or better OR Visiting University Student
ENV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
ENV	485	Environ Impact Assessment	An understanding of federal and state environmental laws, including the scientific processes that are incorporated into decision making, is critical for a variety of careers in the environmental sciences. Provides an overview of these laws and processes and develops the specific written and oral communications skills needed for many environmental, biophysical and natural science professions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better OR Visiting University Student
ENV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours

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ENV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
ENV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
EPA	532	Infrmd Consumer of Ed Research	Development of critical analyses skills in the examination and synthesis of educational research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	555	Translating Rsrch for Ed Chang	Teaches educators how to translate research to promote educational change in their schools and districts. Three concepts emerge to empower practitioners to translate research to their individual schools and communities: (1) a needs assessment to understand the context (student population, community, networks); (2) an emphasis on the generalizability of research to provide an understanding of which findings are most applicable to specific contexts at which times and under which conditions; and (3) explicit training on ways of knowing to encourage practitioners to develop their own theoretical perspectives and test them against the academic research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	556	Data Analysis for Ed Decsn Mker	Prepares educators to use the sources of information (i.e., results, reports and interactive programs) at their disposal to make educational decisions. Dynamic content is adapted based on the real-world information sources brought forth by the course participants.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	559	Systmtc Inqry for Prblm Solvng	Trains participants to produce a policy analysis aimed at addressing a problem they identify within their own organizations. Participants identify a problem, gather, analyze data and evidence to draw conclusions, and clearly and succinctly report their findings and recommendations to policymakers.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	565	Critical Topics in Ed Policy	Critical topics in contemporary educational policy debates in the USA. Explores the dominant ideological and theoretical perspectives about what should be the purposes of schooling. Students analyze the humanist, core-curriculum, vocational, pragmatic as well as the standards-based, market-driven, professionally led, and networked models of reform, theories of change, implementation challenges, and the critiques leveled against these approaches. Students analyze critical topics such as policy formation, leadership, teachers unions, academic performance and community involvement. Encourages students to learn critical "policy skills" and reach reflexive and research-based conclusions about what are the requirements to develop "good school systems" and what their individual and collective contributions could be.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): EPD 710, 712, or 714 with C or better
EPD	710	Current Research in Design	Review and critical evaluation of contemporary literature and research in design, environment and the arts.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisite: Design, Environment and the Arts PhD OR Design, Environment and the Arts (Digital Culture in Design) PhD OR Environmental Design and Planning PhD OR Environmental Design and Planning (Healthcare and Healing Environments) PhD
EPD	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EPD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	201	Environmental Management	Develops an understanding of the fundamentals of environmental science, environmental issues and major environmental standards. Topics covered include basic ecology, population dynamics, environmental resources, environmental pollution and its prevention, the environmental management regulatory framework, sustainability, pollution prevention, waste minimization, and environmental management systems. Provides the foundational knowledge used by environmental professionals who manage environmental problem solving for industry, regulatory agencies, municipalities, consulting firms, military installations, academic institutions and nonprofit organizations specializing in environmental advocacy. Overview course covering elements that are developed in more depth in other ERM courses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	203	Environmental Regulations	Explains and discusses federal environmental laws and regulations that apply to the field of environmental management. Addresses the most important Arizona state and county/local regulations that impact decision making in the environmental management practice area. Emphasizes the federal-level requirements, including laws that are most likely to be used by professionals who are not lawyers and working in positions having environmental management and engineering assignments. Uses case studies to help students learn how the laws are applied and implemented in practical situations. Develops an understanding of the fundamentals of environmental laws and regulations. Provides essential knowledge used by environmental and engineering professionals who manage regulatory issue problem solving for industry, government, consulting firms, military installations, academic institutions and nonprofit organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): any SG or SQ course
ERM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	302	Water and Wastewater Treatment	Explores the development of treatment technologies for drinking water and wastewater.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116 with C or better; MAT 170 or higher with C or better; PHY 113 with C or better; Credit is allowed for only EGR 325 or ERM 302 OR Visiting University Student
ERM	364	Toxicology/Biohazards/Emer Mgt	Introduces poisons. Dose response routes of exposure and toxicokinetics. Diseases associated with natural disasters. Clinical presentation of treatments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		

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ERM	401	Hazardous Waste Management	Definition of hazardous waste, RCRA and CERCLA regulations, hazardous waste classification system. Overview of hazardous waste management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher with C or better; ERM 203 with C or better or Environmental Engineering BSE major; Credit is allowed for only EGR 427 or ERM 401 or ERM 501 OR Visiting University Student
ERM	402	Unit Treatment Technologies	Addresses various treatment technologies for contaminated air, water, and soil. Emphasizes design based upon medium, type of contamination, and concentration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 302 with C or better or CEE 361; Credit is allowed for only EGR 425 or ERM 402 OR Visiting University Student
ERM	406	Environmental Chemistry	Applies basic chemical principles to understanding the reaction, fate and transport of chemicals in water, soil, air and living organisms. Considers major environmental issues in three areas: energy use and sustainable options to fossil fuels; atmospheric pollution including photochemical smog, ozone depleting substances, acid rain and climate change; and water pollution and water management options.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116 with C or better; MAT 170 or higher with C or better; Credit is allowed for only ERM 406 or ERM 598 (Environmental Chemistry) OR Visiting University Student
ERM	407	Occupational Hygiene	Overview of occupational health hazards, including recognition, evaluation, and control. Includes regulatory status and health standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher with C or better OR Visiting University Student
ERM	426	Environmental Issues	Explores the science and policy implications of contemporary problems that threaten the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ERM 426 or ERM 520 OR Visiting University Student
ERM	428	Intl Environmental Management	Examines environmental management issues faced by countries outside of the United States and compares approaches to solving these problems from a technological, economic and political basis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ERM 428 or ERM 528
ERM	432	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): MAT 170 or higher with C or better; minimum junior standing; Credit is allowed for only EGR 426 or ERM 432 or ERM 532 OR Visiting University Student
ERM	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 203 with C or better; ERM 302 with C or better; Pre- or corequisite(s): ERM 402 OR Visiting University Student
ERM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		
ERM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6		Prerequisite(s): Barrett Honors student
ERM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ERM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	501	Prin of Hazard Mtrls/Waste Mgt	Foundation for courses in curriculum. Topics include definitions of toxic and hazardous substances and wastes, RCRA classification, and OSHA criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 427 or ERM 401 or ERM 501
ERM	502	Regulatory Framework/Toxic	Examines federal, state, and local regulations for hazardous materials and wastes. Includes history and trends in regulatory development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	503	Principles of Toxicology	Interaction of chemicals with life and environment. Mechanisms of toxic action, dose-response relationships, toxicity testing models, predictive toxicology, and epidemiology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	506	Chemistry of Hazardous Mtrls	Chemistry and toxicology of hazardous chemicals. Topics include proper handling, storage, transportation, and disposal.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	507	Industrial Hygiene	Emphasizes chemical hazards in industrial settings. Topics include recognizing and measuring hazards, control techniques, and regulatory standards.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	520	Sustainability/Sustainable Dev	Explores broad field of environmental sustainability with U.S. and international coverage of green living practices.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 426 or ERM 520
ERM	522	Air Pollution & Toxic Chemical	Examines issues in the measurement analysis and control of toxic chemicals in air pollution.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	523	Soils/Grndwater Contamination	Theoretical and practical hydrogeology as it applies to cleaning up contamination. Investigative techniques, monitoring, risk assumptions, and assessment methodology.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	527	Enviro/Resources Regulations	Environmental regulations related to water, land use, endangered species, NEPA and other policy issues.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	528	Intl Environmental Management	Studies environmental issues and laws outside the U.S., impact of free trade, and multinational corporations.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 428 or ERM 528
ERM	532	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): Fulton Schools of Engineering or School of Sustainability or Urban and Environmental Planning graduate student or enrolled in ERM 4+1 program; Credit is allowed for only EGR 426 or ERM 432 or ERM 532
ERM	533	Water/Wastewater Treat. Tech.	Covers the most essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies to graduates in environmental and resource management and other interested parties. Provides a fundamental basis for understanding sustainable water and wastewater treatment operations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework in the lectures to strengthen and emphasize the importance of adequate practices used in the management of engineered water and wastewater treatment systems. Incorporates lectures, field trips and professional guest speakers.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): graduate student in Ira A. Fulton Schools of Engineering, the School of Sustainability, or Urban Planning
ERM	535	Water Law and Policy	Regulatory framework that governs use of surface water and groundwater, including federal and state laws, interstate compacts and international treaties. Emphasizes the history and development of water resources in the arid American West. Explores the impact of climate change, population growth and competing interests of sectors such as agriculture, municipalities, tribes and hydropower in terms of policy implications for water use.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	540	Intl Environmental Law/Policy	Studies international environmental agreements, enforcement mechanisms, and the role of NGOs and international organizations.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	501	Social Theory and Environmnt	Investigates key conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	502	Politlcl Ecology: Thry & Rsrc	Investigates key theories and research of political ecology through the conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	513	Institutions	Studies formal and informal institutional arrangements for the governance of natural resources using case studies, experiments, and formal models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
ESS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EST	210	Circuit Analysis I	Parallel/series circuits, ohm's law, network theorems, capacitors/inductors and transient analysis. Overview of electronic devices, BJTs, FETs, op-amps.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisites: MAT 266 (or 271); PHY 112 (or 131)
EST	310	Circuit Analysis II	Electronic device analysis and introduction to design. Power supplies, diode circuits, FETs, BJTs, op-amps. Emphasizes frequency response.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210
EST	315	Digital Systems II	Digital electronics systems, HDL circuits and systems design techniques, and device applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 115 and 210; Credit is allowed for only EST 315 or 394 (Digital Electronics II)
EST	350	Microcontroller Applications	Interfacing of microcontrollers to sensors, switches, indicators, and other human interfaces using the C programming language. Applications involve the integration of both hardware and software. Also addresses applications dealing with open- and closed-loop applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 315; Credit is allowed for only EST 350 or 394 (Adv Micro Controllers)
EST	370	Sensors	Overview of sensor technology, including mechanical, magnetic, radiation, thermal, chemical, and biological applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 200; EST 210; UET 331

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EST	380	Electronic Devices	Covers materials, structures, and technology for the design, production, and application of the major categories of electronic devices.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: UET 331; Credit is allowed for only EST 380 or 394 (Intro to Electronic Devices)
EST	410	Electronic System Design	Analysis and design of Op-amps, power amplifiers, and digital logic families. Feedback design using frequency response. Computer analysis and design.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 310; Credit is allowed for only EST 410 or 494 (Electronics Systems Design)
EST	465	Statistical Process Control	Introduces statistics, seven OC tools, and control charts for data analysis and interpretation; process capability, 6-sigma, lean manufacturing, and quality system.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering undergraduate student; Senior standing; Credit is allowed for only EST 465, 494 (Statistical Process Control) or 565
EST	470	Capstone Design I	Small-group projects designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 345; EST 370; EST 372
EST	471	Capstone Design II	Continuation of a small-group project encompassing designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EST 470
EST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
EST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
ETH	100	Ethnic and Indigenous Lives	Undertakes an introductory comparative analysis of ethnic groups to understand cultural diversity within the United States.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	
ETH	300	Principles of Ethnic Studies	Familiarizes students with a range of analytical and theoretical frameworks in the field of ethnic studies.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	
ETH	310	Critical Research Methods	Examines methodological approaches common to programs in such disciplines as American Studies, Ethnic Studies, and Women's Studies. Critical qualitative, historical, archival, and feminist methodological approaches to the study of diverse United States populations comprise the focus of this course.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Pre-requisite: Minimum 40 hours
ETH	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334
ETH	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
ETH	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ETH	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
ETH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ETH	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student

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ETH	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
ETH	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Mvt)
ETH	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
ETH	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
ETH	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
ETH	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
ETH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
ETH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ETH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ETH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
EVE	214	Envr Engineer Mechanics	Concepts of engineering statics and dynamics in the context of environmental processes. Includes application of calculus-based physics, where differentiation and integration are applied to basic physical relationships; introduces hydrostatics; and material, force and energy balances.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): MAT 266 or MAT 271; PHY 121; PHY 122 OR Visiting University Student

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EVE	261	Intro to Environmental Process	Environmental laws and regulations; mass and energy balances; concepts of water and wastewater treatment, air quality and control, and solid and hazardous waste management.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): CHM 116 OR Visiting University Student
EVE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	302	Env/Engineer Fundmnts:Phys/Chm	Physical and chemical processes in the environment emphasizing environmental chemistry, and fate and transport of substances in and between water, air, soil, and sediment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	303	Envrn Engr Fund: Microbio Proc	Role of microbiology in the environment including detection and identification of organisms, bacterial growth, microbial metabolism, biogeochemical cycles, and applications to environmental engineering	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	304	Environ Engineer Processes Lab	Laboratory experiments, data analysis and interpretation of environmental processes in air, water, and other environmental engineering focus areas.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	2		Prerequisite(s): EVE 302; EVE 303 OR Visiting University Student
EVE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	452	Environ Investgtn Remediation	Engineering practice and design covering environmental laws and regulations, environmental sources of contamination, contaminated site investigation and characterization, risk assessment, and remediation technologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 302; EVE 303 OR Visiting University Student
EVE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): minimum 45 hours
EVE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6		Prerequisite(s): Barrett Honors student
EVE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EVE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-7		Prerequisite(s): minimum 45 hours
EVE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-3		Prerequisite(s): minimum 45 hours
EVE	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	568	Environmental Risk Assessment	Risk assessment is an increasingly important set of tools used to inform environmental, engineering and public health regulatory decisions. Additionally, risk assessment can be used to navigate complex decisions and prioritize resource allocation when those resources are scarce. Framework for analyzing risks in engineering and environmental health applications including microbial, chemical and engineering failure risks. Probability and statistics concepts needed to complete a risk assessment including curve-fitting, Monte Carlo analysis, sensitivity analysis, and techniques for interpreting both sparse and large datasets. Additionally, summarizes the principles of toxicology and microbiology to inform case study projects. Explores risk perception, management and communication approaches for applications to multiple scenarios including water and wastewater treatment, indoor air quality and failure analysis.	N	IND	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student
EVE	571	Water Quality Modeling	Identifies point and nonpoint source pollution in urban and agricultural watersheds, models the fate and transport of this pollution in watersheds, and evaluates strategies for their mitigation. Additionally, touches on water quality standards and the U.S. regulations governing the pollution sources and control strategies. Focuses on nutrient and sediment pollution of surface waters, but also introduces these concepts for other pollutants and groundwater systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student

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EVE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
EVO	501	Current Topics in Ev. Biology	Broadly conceived presentation of papers and current research in evolutionary biology in a journal-club style format.	N	LEC	N	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
EVO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
EVO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EVO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	601	Principles of Evolution	Introductory course for graduate students; covers the principles of evolutionary biology from theoretical, empirical, and historical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	610	Research Areas of Evolution	Broadly conceived description of the current research areas of evolutionary biology. Expected of all first-year evolution students.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	101	Found of Health & Fitness Sci	Student-centered instructional course designed to excite and propel the student into the development of a successful academic and professional career path in the fields of health coaching, fitness or wellness. Presents a general overview of the career opportunities for students in the health and fitness fields with group and individual assignments that enable participants to more thoroughly explore options related to their goals. Divided into 3 major sections: academic preparation, professional development and career exploration. Assists students to develop their own individual blueprint for accomplishing their professional goals and understand the skills they need to develop along the way to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 101 or EXW 290 or EXW 300 OR Visiting University Student
EXW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	214	Flex Instruct Comp Lab	Science and methods of instruction related to flexibility exercises and activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate

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EXW	215	Resistance Training & Recovery	Detailed instruction designed to teach students to safely and properly perform a variety of muscular strengthening exercises. Introduces and reviews fundamental principles of physiology and kinesiology underlying the ability to properly perform a wide variety of resistance training exercises and to properly instruct individuals of varying ages and physical abilities in safe and effective performance of those movements. Additionally, covers the purpose for the cool-down and recommendations for recovery techniques to allow participants to prepare for additional bouts of physical activity.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	216	Musc Str Instr Comp Lab	Science and methods of instruction related to resistance training and muscular strength activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	217	Cardio & Flexibility Training	Comprehensive foundational course designed to teach students how to safely and effectively instruct a wide variety of cardiorespiratory and flexibility exercises one-on-one, and to groups of individuals of varying ages and physical abilities. Provides a basic understanding of the effects of cardiorespiratory exercises on the body and the general scientific principles relative to improving cardiorespiratory fitness. Prepares students to assess joint range of motion and provide specific recommendations for flexibility routines designed to increase joint range of motion and improve the comfort of a client participating in physical activity programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	218	CV Instruct Competency Lab	Science and methods of instruction for cardiovascular exercise and fitness activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	302	Fundamentals of Wellness	Overview of fundamental health, exercise and wellness concepts. Emphasizes personal wellness assessment and application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
EXW	321	Consumer Health	Provides preprofessional primary/secondary educators and community health education specialists with (1) a model for making informed consumer health-related decisions; (2) current information involving consumer related topics, emphasizing necessity of current information for making informed decisions; (3) mechanisms for continued consumer awareness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361)
EXW	325	Fitness for Life	Analyzes physical fitness and benefits of exercise with emphasis on application of strategies for fitness and wellness evaluation, behavior change, and lifelong program planning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101; minimum 30 hours OR Visiting University Student
EXW	330	Kinesiological Found of Mvmt	Study and consideration of human movement with emphasis on kinesiology principles and their application to movement and fitness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Recreational Therapy BS major; BIO 160 or 201 with C or better OR BIO 160 or 201 with C or better; Pre- or corequisite(s): EXW 101 with C or better or KIN 101 with C or better OR Visiting University Student
EXW	331	Violence Prevention	Examines violence prevention strategies and violence prevention content. Examines the literature to understand principles for use in the development of violence prevention curriculum in school and community settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)
EXW	335	Phys Activity & Physio Concept	Specifically designed instruction in human physiology for the health and fitness professional with focus on application of basic exercise physiology and bioenergetics in the design and implementation of exercise and physical activity programs to increase physical function and improve overall health.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EXW	342	Health Behavior Change	Examines major theories of health behavioral change. Develops intervention strategies and techniques employed to facilitate health behavioral change.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 45 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
EXW	344	Phys Activity in Hlth&Disease	Examines the influence of physical activity and fitness on the development of chronic disease and improvement in life expectancy.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better OR Visiting University Student
EXW	351	Substance Abuse Prevention	Prepares preprofessional primary/secondary school and community health educators to prepare and deliver substance abuse prevention education and programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 251 (or EXW 312) or EXW 351
EXW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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EXW	400	Stress Management for Wellness	Examines the stress response and management from a behavioral perspective as it pertains to individuals or groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 60 hours OR Visiting University Student
EXW	412	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)
EXW	420	Exercise Testing	Theoretical basis and practical application of pre-exercise screening, exercise testing, estimates of energy expenditure, and interpretation of results.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s) with C or better: EXW 214; EXW 216; EXW 218; EXW 330; SSP 315 (EXW 315); SSP 316 (EXW 316); minimum 60 hours OR EXW 215; EXW 217; EXW 330; KIN 340; KIN 352; minimum 60 hours OR Visiting University Student
EXW	425	Exercise Rx Hlth & Wellness	Comprehensive course allowing students to learn and apply the principles of exercise prescription for individuals of various ages, fitness levels and health states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 335 or SSP 315 (EXW 315) with C or better OR Visiting University Student
EXW	426	Exercise for Neuromuscular Con	Studies the impact of various neurological and neuromuscular conditions on the physiological function, motor control, exercise capacity and health of the human body. Researches and applies evidence-based best practices for exercise prescription for persons with such conditions with the goal of maximizing functional abilities and capacity, independence, and health-related physical fitness and preventing or treating secondary conditions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 330, KIN 334, or PRM 364; KIN 340 or SSP 315 (EXW 315); Credit allowed for only EXW 426 or EXW 494/KIN 494/EXW 598 (Neuromuscular Exercise Prescrip) or EXW 598 (Exercise for Neuromuscular Conditions) OR Visiting University Student
EXW	442	Motivational Interviewing	Provides a structure for understanding, critiquing and application of core concepts associated with motivational interviewing. Assigns each student to formally interview a volunteer, review the audio/visual stream, and evaluate the efficacy via accepted software and hardware instruments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 or EXW 342 with C or better; Credit is allowed for only EXW 442 or EXW 494 (Motivational Interviewing)
EXW	446	Worksite Wellness	Provides insights and tools to effectively promote the transformation of workplaces into communities that care for their employees while improving productivity and moderating increases in health care costs through sustainable wellness programming.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 with C or better; Pre- or corequisite(s): EXW 342
EXW	450	Soc Deter of Health and Beh	Examines broad determinants of health that influence the well-being of individuals and communities (e.g., early life, education, employment, culture, policy, the built and food environments, stress and socioeconomic status).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 60 hours OR Visiting University Student
EXW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Wellness major; EXW 420 with C or better; minimum 2.00 GPA OR Health Education and Health Promotion major; EXW 284 with C or better; EXW 476 (or EXW 436) with C or better
EXW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
EXW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EXW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
EXW	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	501	Research Statistics	Statistical procedures; sampling techniques, hypothesis testing, and experimental designs as they relate to research publications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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EXW	510	Obesity Persp and Prescrip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. In addition, explores applications for prevention and treatment of obesity. Challenges students to examine a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410)
EXW	535	Adv Exercise & Prescription	Theory and practice of laboratory methods in applied exercise physiology. Procedures for assessment and prescription for individuals with chronic disease.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	536	Physiological Aspects/Phys Act	Role of physiological mechanisms associated with acute and long-term physical activity and its influence on chronic disease and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	538	Obesity, Exercise and Health	Critically examines scientific and medical evidence concerning obesity, exercise, and health across the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	540	Mindfulness, Stress and Health	Overview of the theory, measurement, research and efficacy of mindful awareness practices and programs on stress reduction, health outcomes and health behavior. Includes an experiential learning component focused on practices and content consistent with mindfulness-based stress reduction.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 540 or EXW 598 (Mindfulness Stress and Health)
EXW	542	Health Promotion	Theory and research concerning fitness and wellness programs in nutrition, physical activity, smoking cessation, and stress management.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	544	Fitness/Wellness Management	Development of the fitness/wellness industry. Planning, organizing, promoting, and managing fitness/wellness programs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	554	Plan Implem Health Promotion	Covers selected topics in health promotion across a variety of domains of health. Program planning concepts include the application of planning frameworks, needs assessments, and theory in health promotion program planning and development. Also focuses on practical issues related to health promotion program implementation such as implementation planning, resource management and program marketing. Also covers process evaluation and quality improvement strategies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 554 or HEP 454 (EXW 454)
EXW	556	Program Eval Health Prom	Comprehensive and systematic introduction to the key concepts and methodologies of program evaluation, specifically related to health programs. Discusses approaches to program evaluation in relation to the program's stage of development, resources and informational needs for decision-making. Focus includes program evaluation literature related to physical activity and nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 556 or EXW 598 (Program Evaluation) or HEP 456 (EXW 456)
EXW	560	Cardiopulmonary Rehab	Exercise testing and prescription for cardiac and pulmonary patients as well as pharmacology, electrocardiography, pathophysiology of chronic diseases, and leadership of patients in cardiac rehabilitation and pulmonary rehabilitation programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	562	Funct Assmt Ex Presc Older Adu	Assessment of functional capacity and prescription of exercise that is appropriate for older adults including healthy, frail, diseased and very old.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Clinical Exercise Physiology or Exercise and Wellness major
EXW	564	Aging and Lifestyle Behav	Provides an overview of health behaviors in older adults. Centers on the perceptions and behaviors of older adults in reference to illness prevention, health promotion and reactions to acute and chronic illness and the context in which these behaviors occur. Specifically examines the psychological, familial, cultural and contextual factors which influence older adults' personal health practices and illness behaviors. Considers the older person as an individual in a complex system, engaged in decision making and his/her subsequent actions to maintain or improve health status. Solidifies concepts through the use of in-class case studies and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 542
EXW	565	Cardio-Pulmonary Physiology	In-depth study of the physiology of exercise with special regard to cardiovascular and pulmonary responses in healthy and chronically diseased individuals.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Clinical Exercise Physiology MS students
EXW	568	Mgmt Trtmt Chronic Disease CEP	Investigates the physiology, pathophysiology and treatment options for a variety of diseases that the clinical exercise physiologist routinely encounters in the work environment. Prepares students to qualify for ACSM Clinical Exercise Physiologist certification.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 560

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EXW	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	597	Capstone Project	For non-thesis students in the MS degree program to provide a culminating field experience or non-research project for students to apply the coursework and healthy aging concepts.	N	RSC	N	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): EXW 500; EXW 501; EXW 536; EXW 542; EXW 591
EXW	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	635	Physical Activity and Aging	Examines and discusses the theoretical and applied health-related research on physical activity and aging.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	640	Analy of Variance for Exercise	Analyzes variance methods with an emphasis on research measures of human performance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	641	Qualitative Research Methods	Introductory overview of qualitative research methods frequently used in education and health. Emphasizes analysis of research and practical application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	642	Exercise Epidemiology	Physical activity, exercise, and physical fitness and the development of chronic disease.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500 with C or better; EXW 501 with C or better
EXW	643	Correlation/Regression/Multiva	Graduate-level statistics course for PhD/master's students who will be doing research in the area of exercise and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	645	Adv Applied Methods & Analysis	Heavily applied focus on implementing research methods and statistical modeling techniques in the health promotion sciences. Addresses practical issues in specifying, interpreting and presenting research findings using appropriate statistical techniques. Addresses reporting standards (e.g., CONSORT, STROBE, PRISMA) and practical issues related to manuscript submission. Covers analytical methods including multiple regression and logistic regression, ANOVA, mediation and moderation, exploratory factor analysis, multilevel models for hierarchical data and intensive longitudinal data, basic time-to-event analyses (i.e., survival), and meta-analysis; also remains flexible to address critical and emerging methodologies in the health promotion sciences. Covers statistical methods in a conceptual nature with a focus on the use of statistical software packages (primarily SPSS) and interpretation of outputs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 640
EXW	655	Phys Activity Public Health	In-depth analysis of the role of physical inactivity as a public health problem and public health approaches to the study and practice of increasing physical activity. Includes analysis of public health strategies for increasing physical activity at the community, national and international levels.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 655 or EXW 598 (Pa Pub Health)

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EXW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	701	Advanced Research Methods	Provides doctoral students in Nutrition and Health Promotion with instruction in methods to enhance scientific writing skills in the health sciences and guidance through the process required to organize and submit a fundable research grant proposal.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 700
EXW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
EXW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	101	Personal Growth Human Relatnsp	Personal development and behavior as related to competency in interpersonal relationships with the family. Processes of family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshman Standing; Maximum 25 hours
FAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
FAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	301	Introduction to Parenting	Integrated approach to understanding parenting and parent-child interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
FAS	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
FAS	331	Marriage/Family Relationships	Issues, challenges, and opportunities relating to present-day marriage and family living. Factors influencing interrelations within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	332	Human Sexuality	Relationship of sexuality to family life and to major societal issues. Emphasizes developing healthy, positive, and responsive ways of integrating sexual and other aspects of human living.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	361	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student
FAS	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student
FAS	390	Supervised Research Experience	Practical, firsthand experience within current faculty research projects in family studies or child development. Y grade only; may be repeated for total of 6 hours.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		

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FAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	410	Military Families	In-depth overview of recent research, issues, trends relating to military families and the interactions within the military culture and societal cultures.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 101 or PSY 101 or SOC 101; minimum 30 hours OR Visiting University Student
FAS	435	Adv Marriage/Family Relatnshps	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
FAS	436	Sexuality Mid-Life & Beyond	Analyzes physical changes, myths and stereotypes, gender issues, and relationship issues pertaining to sexuality in the middle and older adult years.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 60 hours; 6 hours of PSY and/or SOC courses
FAS	440	Fund Marriage/Family Therapy	Introduces the fundamental orientations of marriage and family therapy.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
FAS	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
FAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
FAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
FAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
FAS	500	Research Methods	Course on research methods in a specific discipline.	Y		LEL	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	503	Academic Professional Dvlpmnt	Becoming and working as a academic, including how to write a vita, choose a thesis topic, or find dissertation data.	N		REC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 505
FAS	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 507
FAS	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 508
FAS	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 509

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FAS	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
FAS	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
FAS	531	Theoretical Issues Family	Historical and current approaches to theory development, evaluation, and application in family studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	539	Rsch Issues in Family Interact	Critical review of current and past research in the area of family dynamics. Emphasizes interactional processes within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	570	Introduction to MFT	Introduces major marriage and family therapy orientations. Reviews history, theory, application, and outcome research for each orientation.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	571	Assessment in MFT	Assessment and outcome evaluation of couples and families involved in marital and family therapy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	572	Advanced Techniques in MFT	In-depth review of assumptions and advanced techniques associated with contemporary marriage and family therapy approaches.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	573	Dysfunctional Families	Critical review of current theory and empirical evidence connecting marital and family interaction patterns with aberrant behavior.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	574	Family Theory for MFT	Examines the theoretical orientations within the family therapy field, including the evolution, premises, and assumptions of each.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	575	Appl Issues in Couples Therapy	Examines issues unique to therapeutic work with couples, including lifespan transition, multicultural issues, divorce, parenting, and remarriage. Seminar. Enroll requirements: Pre-requisites: Admission into MAS-MFT program.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	576	App Iss in Hum Dev MFT Psych	Recognition and diagnosis of maladaptive behavior according to DSM criteria across human development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	577	App Iss in Child & Ado in MFT	Examines developmental factors that lead to disorders in children and adolescents, with an emphasis on a systemic framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	578	Issues in Sexuality for MFT	Examines the major methods used to assess and treat sexual issues and the treatment of sexual disorders.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	579	Applied Research in MFT	Critical examination of research concepts, quantitative and qualitative research designs, and applicability in clinical settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	581	Professional Issues and Ethic	Examines legal and ethical concerns of marriage and family therapists, emphasizing licensing standards and the Code of Ethics.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
FAS	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587

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FAS	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588
FAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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FIN	123	ASU Financial Literacy	A practical approach to financial challenges faced by ASU students. Emphasizes financial choices likely to be encountered while at ASU, as well as issues to be encountered immediately upon graduation. Topics include credit cards, student loans, credit scores, saving, investing, insurance, transportation, housing, taxes, goal setting and budgeting.	N	LEC	N	YGB	W. P. Carey School of Business	Department of Finance	1		Credit is allowed for only FIN 123 or 191(ASU Financial Literacy)
FIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	300	Fundamentals of Finance	Theory and problems in financial management of business enterprises.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better:WPC maj or non-WPC maj w/min 2.5 GPA &min 56 hr; ACC 231,232 or 261; ECN 212; ECN 221,231,IEE 380 or STP 280; MAT 210,251,265 or 270; Pre/coreq;ACC 241,242 or 271; Credit allowed for FIN 300,302 or 303 OR Visiting University Student
FIN	302	Managerial Finance	Theories and techniques used for business decisions in working capital management, capital budgeting, financial control, and long-term financing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: WPC Finance major; ACC 231, 232, 261; ECN 211, 213; ECN 212, 214; ECN 221, 231; MAT 211, 266, 271; Pre/coreqs: ACC 241, 242, or 271 w/C or better if complete; Credit allowed for only FIN 302 or 303 OR Visiting University Student
FIN	303	Honors Finance	Covers basic principles of finance, practical tools for financial decision making, and evaluation methods employed by the firm.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s) with C or better: WPC Honors student; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211 or 271; Pre- or corequisite(s): ACC 241, 242 or 271 with C or better if completed; Credit allowed for only FIN 302 or 303
FIN	331	Financial Markets/Institutions	Analyzes financial markets and intermediaries. Theory of financial intermediation, interest rate theory, money and capital market instruments, and government regulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: W.P. Carey BS major or Business minor; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211, 266, or 271; Pre/coreqs: ACC 241, 242, or 271 with C or better if completed OR Visiting University Student
FIN	361	Advanced Managerial Finance	Builds on FIN 302. Advanced material on capital budgeting, cost of capital, CAPM, asset valuation, capital structure, and financial policy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P.Carey Finance BS student; FIN 302 with C or better OR Visiting University Student
FIN	380	Personal Financial Management	Dynamic analysis of personal financial planning, including time value of money, stock and bond investment, and retirement and estate planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student; Not for Finance major credit OR Visiting University Student
FIN	385	Personal Insurance Planning	Fundamentals of personal risk and insurance. Understanding and evaluating personal insurance coverage. Helpful for an insurance license.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300, 302, or 303 with C or better OR Visiting University Student
FIN	386	Estate Planning Strategies	Estate planning concepts, issues and strategies. Evaluates a personal estate plan and identifies needed components. Planning for client objectives and wealth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300, 302, or 303 with C or better; FIN 380 with C or better; Pre- or corequisite(s): FIN 385 with C or better if completed OR Visiting University Student
FIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey BS non-Finance major; FIN 300, 302 or 303 with C or better
FIN	420	Personal Portfolio Management	Managing a portfolio of securities through the investment process. Valuing stocks, bonds, managing risk, and considering tax and inflation consequences.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; FIN 300, 302, or 303 with C or better; FIN 380 with C or better OR Visiting University Student
FIN	421	Security Analys Portfolio Mgmt	Security analysis theory and practice. Selection and management of financial asset portfolios. Securities markets and portfolio risk-return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student

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FIN	427	Derivative Financ'l Securities	Study of stock options, index options, convertible securities, financial futures, warrants, subscription rights, and arbitrage pricing theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	431	Management of Financial Insts	Asset/liability and capital management in financial institutions. Influence of market factors and regulatory agencies. Emphasizes commercial banks.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	455	Entrepreneurial Finance	Examines principles of entrepreneurial finance with a focus on the underlying economics and institutions involved. Provides insight into evaluating new ventures and practical financial tools for the entrepreneur.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 261 or 340 with C or better; FIN 303 or 361 with C or better; Credit is allowed for only FIN 455 or FIN 555 OR Visiting University Student
FIN	456	International Financial Mgmt	Exchange rate determination, financial markets, managing multinational corporations, capital budgeting, and hedging currency risk exposure from an international perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	G	Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Barrett Honors student; Finance BS major; FIN 303 with C or better OR Visiting University Student
FIN	460	Personal Fin Cases & Modeling	Capstone course. Case method training to simulate situations as a financial planner for self and for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; ACC 435 with C or better; FIN 385 with C or better; FIN 386 with C or better; Pre- or corequisite(s): FIN 420 with C or better if completed
FIN	461	Financial Cases and Modeling	Case-oriented capstone course in managerial finance. Contemporary issues of liquidity management, capital budgeting, capital structure, and financial strategy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	L	Prerequisite(s): Finance BS major; ACC 340 with C or better; ENG 101, 105, or 107 with C or better; FIN 303 or 361 with C or better; minimum 87 hours; Pre- or corequisite(s): FIN 421 with C or better if completed OR Visiting University Student
FIN	471	SIM Fund	Under faculty supervision, students manage over \$500,000 of the ASU Foundation's assets over the course of the year. Must take for a total of 3 hours.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): FIN 303 or 361 with C or better OR Visiting University Student
FIN	472	Invstm Bnk Industry Schol	Provides conceptual basis for performing analysis, providing advice and making decisions in elite financial services firms. Must take for a total of 3 hours.	N	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): application and selection process; Credit is allowed for only FIN 472 or FIN 494 (Investment Banking Industry Scholars)
FIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): W.P. Carey BS student; FIN 300, 302 or 303 with C or better
FIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-6		Prerequisite(s): Barrett Honors student
FIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Finance	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance BS major; ACC 261 or 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Pre-requisites: W.P. Carey Finance students with professional status
FIN	501	Basics of Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree-seeking graduate student
FIN	502	Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2-4		Prerequisite(s): W. P. Carey MS Finance or MBA student; ACC 502 with C or better
FIN	509	Quantitative Methods Fin I	Empirically investigates properties of financial data such as basic probability theory, matrix algebra, ordinary least squares, and maximum likelihood estimation. Explores these methods both through algebraic derivation and programmed implementation in PYTHON. Provides the basis for portfolio optimization by focusing on the estimation and testing of financial factor models.	N	SEM	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student

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FIN	520	Valuation Techniques	Improves the understanding of valuation concepts and how to apply them. Shows how to value assets using free cash flow and economic value-added methods.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	525	Investment Strategies	Presents the fundamental principles of risk and return, portfolio diversification, asset allocation, efficient markets, active portfolio management, portfolio evaluation. Reviews selected alternative investment strategies such as hedge fund investments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance MS or MBA student; FIN 502 with C or better
FIN	530	Derivatives	Intermediate- to advanced-level course in derivative assets such as options, forward and futures contracts, swaps and financial engineering.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance MS student; FIN 502 with C or better
FIN	535	Quantitative Methods Fin II	Investigates financial data by using techniques such as autoregressive and vector-autoregressive models, dimension-reduction techniques motivated by latent factor models and machine learning dimension-reducing techniques. Explores these methods using algebraic derivation and implementation in PYTHON. Builds on the statistical and programming skills developed in FIN 509 and emphasizes forecasting for the optimization of portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student; FIN 509; Credit is allowed for only ECN 502 or FIN 535
FIN	540	Advanced Financial Management	Offers a comprehensive exploration of the revolutionary developments occurring in the world's financial markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	545	Advanced Corporate Finance	Studies major decision-making areas and selected topics in corporate finance. Attempts to develop decision-making ability in these areas using both lectures and cases.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 545 or 591 (Advanced Corporate Finance)
FIN	550	Fixed Income	Intermediate- to advanced-level course in fixed income instruments and associated relative valuation of the securities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	555	Entrepreneurial Finance	Provides an overview of the economics and institutions involved in entrepreneurial finance. Focuses on the financing of new ventures. Consists primarily of case analysis, supplemented with in-class exercises and lecture material.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey degree-seeking graduate student; Credit is allowed for only FIN 455 or FIN 494 (Entrepreneurial Finance) or FIN 555
FIN	560	International Finance	Examines the financial issues of an international investment decision. Main topics include foreign exchange market, investment alternatives in the international capital markets, and the management of foreign exchange risk.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	565	Risk Mgmt in Banks & Fncl Inst	Provides a risk management view of financial institutions (also known as financial intermediaries). Traditionally, banking courses have focused on an overview of the financial services industry, sector by sector, concentrating on balance sheet presentations and overlooking management decision making and risk management. In contrast, this course emphasizes a risk management approach.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	575	Finance Capstone	Provides a culminating experience as a step in completing the degree. Applies finance principles related to the investment, risk management and financing policies of the firm to develop decision-making ability in these areas. Emphasizes analysis of finance problems through selected readings and case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 575 or 591 (Finance Capstone)
FIN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): FIN 502 with C or better
FIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	781	Theory of Finance	Fundamental tools of financial economics; asset pricing, arbitrage, option pricing, capital structure, dividend policy, asymmetric information, and transaction-cost economics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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FIN	782	Theory of Finance II	Fundamentals of corporate finance, contract theory, agency problems, and game theory applications in Finance.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	783	Empirical Asset Pricing	Asset pricing models in finance; efficient market hypothesis, empirical factor models, option pricing basics.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	785	Financial Econ of Cap Mkts	Asset pricing theory, equilibrium asset pricing models, and the equity premium puzzle; incomplete and imperfect markets.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	786	Corporate Finance	Issues in corporate finance covering topics that impinge on corporate finance, financial contracting, intermediation; empirical corporate finance; microstructure.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIS	101	SFIS: The ASU Experience	Welcomes freshman students enrolled in the Innovation in Society major at ASU. Introduces the array of resources available to them as ASU students, stimulates them to reflect on their choice of major, and provides an opportunity to hear about the career trajectories and interests of faculty and alumni from the School for the Future of Innovation in Society. Capped at sections of 20 students to promote discussion and a sense of community.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		
FIS	111	Welcome to the Future	Explores the ways in which the future inspires, shapes and motivates the present. Illustrates how possible futures are used by people and institutions to advance agendas, shape conversations and sell products. Examines how science, technology and other forces are mobilized to create change. Empowers students to play a role in shaping our collective future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	201	Innovation in Society	Examines the vast implications of innovation, why it is so powerful, and why it really matters. Introduces the theories and processes of innovation as they relate to socio-political change. Students gain knowledge about the history and future of innovation and explore how innovation is entangled with social, political and ethical issues. By identifying and applying analytical tools, students learn to account for the diverse workings and effects of innovation. This course strives to debunk the myth that innovation happens automatically. Rather, different actors rally to create innovations that shape our society, economy and cultures--and that those innovations are not inevitable and could be otherwise.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	H	
FIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		

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FIS	305	Ways of Knowing	Students research, beginning with the concept of research itself and its various purposes, highlighting knowledge and how it is created in different disciplinary approaches. Exposes historical and philosophical underpinnings of how research is conceptualized, presented and implemented, including what constitutes information, knowledge and evidence. Introduces material that is in a traditional research design and methodology course; however, the emphasis uniquely focuses on knowledge creation, innovation, the nature of disciplinary knowledge and its impact on society. Explores the epistemological differences in problem identification and approaches to inquiry in the disciplinary perspectives of engineering, the sciences and in the social sciences.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
FIS	307	Navigating Futures	Foresight methods and their potentials as entry-points into public discussions about near- and mid-range technoscientific developments. Four elements constitute the organizing axis of the course: (1) the history of foresight exercises in government agencies and business organizations; (2) the methods of four forms of foresight exercises (technology foresight, science and technology studies, anticipatory governance and scenario development); (3) a comparative assessment of these dominant forms; and (4) a group-based application exercise using one of the foresight methods.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	308	Politics, Markets, and Innovat	Studies the roles that governments, markets and other factors play in promoting, disseminating and regulating science-based technological innovation. Includes examining the theoretical literature on factors that structure markets and shape diffusion, as well as case studies that illustrate the processes and mechanisms that govern innovations in society. In addition to studying the role of governments, firms and universities, also considers the role of publics as consumers who adopt innovations but also as citizens who may be skeptical of them. Includes case studies in agriculture, health care, biotechnology and digital rights.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	331	Technology and the Modern Worl	Explores how technological systems are developed and embedded in the modern world with an eye to playing a role in creating better futures. Examines how machines and techniques can shape institutions, relationships and values. Challenges students to envision futures that they want and work to develop strategies for moving us (and our systems) toward those futures. Analyzes technologies past, present and imagined, and describes the ways in which technologies shape our world and the ways in which we shape those technologies. Through repeated practice in class students play a productive role in and even facilitate conversations that tease out the relationships between values and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	332	Risk and the Future	Examines the evolving global risk landscape that is resulting from rapidly increasing global connectivity, tight coupling and massive complexity. Develops an understanding of how innovation in society is changing the risk landscape and considers how innovation in approaches to risk can help navigate this emerging landscape. Topics include technological risk, sociopolitical risk, catastrophic risk, existential risk, converging technologies, perception and uncertainty, anticipation, precaution, uncertainty and risk innovation.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
FIS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334

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FIS	335	Designing Knowledge	Provides a foundational understanding of how social organizations make and use knowledge. From research laboratories to biotechnology companies to statistical agencies, many organizations are specifically designed to be knowledge enterprises, enterprises whose primary purpose is to produce knowledge. All organizations in modern societies also operate knowledge systems: systems whose purpose is to create, validate, circulate, communicate and apply knowledge in the making of decisions. Examines how these forms of organization work and contribute to modern societies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	336	Science and Technology Policy	Science and technology are powerful forces in the modern world. They have been hailed as a way to address everything from world hunger to old age. This does not, however, happen automatically, nor does it always work out the way one presumes. Governments make numerous decisions that affect the direction and application of science and technology, and government policies are affected by a myriad of social, political, and cultural factors. This class will explore the variety of ways in which governments make these policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures. Governments around the world have coalesced around the idea that science and technology are necessary for the promotion of the good life. We will examine how they put this idea into action by looking at five interrelated topics: Food, Security/Military, Health, Economy, and Sustainability.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	337	Innovation and Global Developm	Persistent inequality and poverty continue to plague nations including the USA even in the 21st century. Global development is a complex idea that attempts to address interrelated paradigms of culture, economy, equity, governance, history, societal dynamics, as well as technological issues. Using the framework of the Sustainable Development Goals 2030 (SDGs) this course examines, analyzes and critiques indicators of SDGs as well as explores innovative measures of development that nations around the world are planning and implementing in order to improve the lives of their citizens now and for the future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	351	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student
FIS	371	Impact Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Innovation allows for amazing possibilities, and within each one of us is the potential to create, apply, research and scale innovation to realize impact goals. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on what constitutes and how one achieves sustainable and scalable outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	372	Inquiry Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on meaning making, grounded claims, and what it means to gather, analyze, construct and advance meaningful assertions and storied truths that advance productive claims about the potential of an innovation to realize impact goals.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours
FIS	373	Innovation Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a focus on imagining, designing, developing and optimizing a particular innovation such that it is likely to realize impact goals. Beyond product-centric perspectives that locate change within the innovation, this journey emphasizes an ecological perspective that positions innovation as a shared accomplishment distributed across the designed innovation, engaged participants, prepared facilitators and a responsive ecosystem.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		

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FIS	403	Governing Emerging Technologie	Examines the variety of ways in which societies make collective decisions or govern science and technology. Focuses on a particular category of science and technology: the set of emerging technologies like nanotechnology, artificial intelligence and robotics, genetic modification and synthetic biology, cognitive science and neurotechnology, geoengineering, and others that pose particular problems of high stakes, high uncertainty and ambiguous novelty. Closely allied with the research agenda of numerous faculty in the School for the Future of Innovation in Society, especially those in the Center for Nanotechnology in Society, the Risk Innovation Lab, and others; exposes students to inquiry and skills directly from the research front. Students perform numerous research tasks.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	431	Technology, Security and Insec	Focuses on the international political aspects of technological change; examines the impact of technological innovation and political change on the international political system. The overall goal is to create an awareness of and ability to analyze and synthesize world events, the particular role of technology, and consider the myriad ways that globalization and technology as a main driver could be changing the international system of nation-states. Technological innovation often takes place within a political context, including international politics, as nation-states and other entities develop technologies within the context of competition and power. There are several issues that run throughout the course as major themes. One is the role of technology in political and social change, and the impact of the latter on the former.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	432	Prob Solving-StrategicThinking	Students learn how to ask questions, brainstorm and communicate ideas, while dealing with uncertain outcomes and unpredictable risks caused by the ideas and solutions they propose. In understanding which ideas and solutions stick and which don't, students learn how different factors influence the birth, life and death of ideas and the socio-technical systems in which ideation exists. Does it matter who asks the questions and proposes the ideas, who is trying to participate, who was there first, if there is a profit or other conflicting motive and the context and the interests that result in certain solutions being picked over others? This course uses exploration learning approaches, where students follow a progression through what they discover, from understanding who they are as individuals, to how ideas are formed and hypothesis made about proposed solutions.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
FIS	480	Innovation Studio	Facilitates experiential learning and allows students to work with clients in the field of technology, innovation and sustainability. Through team projects with identified stakeholders, students engage, plan, design, implement and assess projects while learning interpersonal skills and managing client relationships. Students gain real-world experience and develop skills in project management, including planning, implementing and evaluating a complete project cycle. Allows students to manage both client-based projects and team relationships to complete projects. Students carry out project-based research, conduct interviews and meetings, make site visits, develop work plans and scope of works, negotiate clear deliverables with clients, implement projects and give public presentations. Presentations are grounded in the idea of conducting effective science communication.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 305

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FIS	481	Application Journey	As a culminating experience, course brings together the previous experiences and emerging expertise to investigate, innovate and cultivate an impact innovation to achieve impact goals. Starting with building a grounded appreciation for a particular impact outcome, participants then design an innovation to realize a better future state, grounding this work in lessons with respect to logic models, design fictions, agile startups, and rapid prototyping. Some participants simply test a component and produce a reflective analysis, while others expand credit requirements and iterate to achieve transformative outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 371; FIS 372; FIS 373
FIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		
FIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6		Prerequisite(s): Barrett Honors student
FIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	RSC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-7		
FIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-3		
FMP	180	Prin of Production Technology	Introduces the basic terms, functions, theories and applications of film and media-making equipment and technology related to camera, sound and editing.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		
FMP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	201	Film: The Creative Process I	History, elements, and techniques of theatrical film: cinematography, directing, acting, scriptwriting, producing, and criticism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	
FMP	210	Principles of Filmmaking	Introduces majors to the world of professional film and media production. Examines all aspects of the process from a practical, real-world perspective. Students learn the importance of each phase of the creative process through the five stages of filmmaking: development, preproduction, production, postproduction, and marketing/distribution.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production BFA major; FMP 180 with C or better OR Visiting University Student
FMP	211	Film Spark Campus Intensive	Dynamically dated courses and experiences designed to bring students in contact with working industry professionals via Film Spark.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Credit is allowed for only FMP 211 or FMP 294 (Producing Independent Film and Media) or FMP 294 (Pro Casting Practices: Advice from Professionals)
FMP	215	Beg Post-Production Film & TV	Introduces the basics of post-production for digital narrative media, including instruction on Adobe Premiere Pro.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 215 or FMP 394 (Non-Linear Editing for Film and Media)
FMP	220	Film & Media Post-Production I	Required 45-hour lab designed to teach students how to use the Avid Media Composer editing program and supporting software with an emphasis on editing techniques and workflow. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor. Satisfies the Media Composer 100-level certification as part of Avid's official curriculum. Upon completion of this course, students take an exam to become an Avid Certified User.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production student OR Visiting University Student
FMP	222	Education in Film	Critically examines how teachers, students, administrators and educational issues are dramatized and represented in popular media. Explores professional teacher preparation, socio-cultural contexts of education systems and learning, and the use of cinema as social critique.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	L	Prerequisite(s): ENG 101 (or ENG 102) with C or better. Credit is allowed for only FMP 222 or FMP 294 (Education in Film)

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FMP	225	Intro VFX	Introductory look into the theory and practice of creating visual effects for film, television and games. Focuses on principles of 2D visual effects as derived and modernized from traditional special effects practices as seen in pre-digital film making. Students view, discuss and critique effects from films in the 20th and 21st centuries and engage in the creation of visual effects shots in a variety of styles employing a number of standard techniques. Covers the use of Adobe Photoshop and After Effects; however, considers some use of 3D applications in the second half of the semester. At the heart of good visual effects is a critical eye and attention to detail that is gained through critique of professional and student works on a weekly basis.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 225 or FMP 394 (Introduction to Visual Effects)
FMP	240	Intro Animation	Introduces history, theory, technique and practices of 2D and 3D animation. Covers types of animation and how to create projects for a broad variety of end uses (e.g., motion graphics, TV/film, Web, games). Students create short projects that serve as exercises to study animation techniques as well as more in-depth projects of student design.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 240 or FMP 294 (Introduction to Animation)
FMP	250	Ethics Survey Film & TV	Sex and violence portrayals in media; examines societal evolution, technological development, market imperatives, production codes, and industry realities and practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		
FMP	255	Media Authorship	Surveys the manipulation, editing, compression, encoding and search engine optimization of digital sound and video media.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	CS	Credit is allowed for only FMP 255 or FMP 294 (Media Authorship) OR Visiting University Student
FMP	261	Principles of Screenwriting	Explores fundamental skills of script writing for entertainment industry screen media, including: standard script writing software, formatting and technical standards; exercises in character creation and dramatic conflict; and analysis and understanding of common narrative structures of feature-length, series and short-form content.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): THF 160 OR Visiting University Student
FMP	280	Intro to Film/Media Production	A hands-on production course where students learn first-hand how to make films in a structured, informative environment that works through all phases of production, focusing on collaboration and application of basic mediamaking skills and technology.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Pre- or corequisite(s): FMP 180; Credit is allowed for only FMP 280 or FMP 294 (Intro to Film Production) OR Visiting University Student
FMP	285	Portfolio Prep and Rev I	Introduces the basics of Digication e-Portfolio platform, including preparation and presentation of sophomore portfolio milestone for faculty review and admission to upper-division.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): Film and Media Production BFA major; minimum 32 hours OR Visiting University Student
FMP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	300	Short Film Production	Specialized study of conventional film techniques; emphasizes the creative process through project-based, hands-on learning. Group and individual exercises cover all phases of short film production from creative inspiration to online distribution.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA major or Film and Media Production BFA major; FMP 280 with C or better OR Visiting University Student
FMP	315	Sound Design Film & Media I	Introduces creative and technical aspects of sound design for film and digital media production, including introduction to Avid Pro Tools software.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prereq(s): Film (Film & Med Prod) BA, Film (Filmmak Pract) BA, or Film and Media Production BFA major; Pre- or corequisite(s): FMP 280 or 300; Credit is allowed for only FMP 314 or FMP 294 (Sound Design: Film) OR Visiting University Student
FMP	318	Directing for Film and Media I	In-depth analysis of directing theory, textual analysis, visualization, shot composition and spatial connection, staging, rehearsal techniques, and camera movement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 300 with C or better OR Visiting University Student
FMP	320	Film&Media Post-Production II	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and equipment, basics of visual and audio effects and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 220 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student

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FMP	325	Guerilla VFX	Offers the opportunity to work with a broad variety of projects with assets ranging from excellent quality to those that are more difficult to work with. In addition to work with pre-prepared assets, students also get the opportunity to create their own effects sequences from scratch (including capturing footage). Students learn best practices for capturing all needed elements on the day of the shoot as well as planning the sequence before recording. Covers work in both 2D and 3D visual effects including: matte painting (2D and 3D), set extensions and additions, blue/green screen compositing, and 3D animation for the addition of elements into a shot. The first section of the class consists of short individual assignments aimed at teaching basic core VFX skills, finishing with the production of a class-produced VFX short film. Class member assignments are based off of individual skill and interest.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 225 with C or better; Credit is allowed for only FMP 325 or FMP 294 (Guerilla VFX) OR Visiting University Student
FMP	330	Pro & Tech Writing for Film/TV	Professional (noncreative) writing skills that prepare students for a career in the entertainment industry.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): THF 220 with C or better; Minimum 56 hours; Credit is allowed for only FMP 330 or 494 (Prof & Tech Writing for Film, Media & TV Industry)
FMP	335	Careers in Film/Media Ind	Basics of starting a freelance career in the film and media industry; the necessary tools and skills needed to move that career forward through the creation of various business and professional tools; and the various techniques needed to succeed in a variety of production environments.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Digital Culture (Film) BA, Film BA, or Film and Media Production BFA major; FMP 201 or 285 with C or better OR Visiting University Student
FMP	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
FMP	345	Cinematography I	Cinematographer's role, photographic and visual theory, framing, shot composition, cameras and equipment, crew management, basic lighting for film and video.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): The Sidney Poitier New American Film School major; FMP 201 or 280 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student
FMP	350	Directing Documentary Media	Introduces directing students to the various practices, approaches and techniques of professional documentary media making, including creation of short-form projects that highlight both individual and collaborative perspectives on real-life figures, events and communities.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 280 or 300 with C or better; Credit is allowed for only FMP 350 or FMP 394 (Documentary Production) OR Visiting University Student
FMP	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)
FMP	360	The Filmmaker's Voice	Explores the various ways in which film artists demonstrate their unique perspective and ability, via extended analysis of noted works defined by strong artistic vision, discussion of cultural and historical values, and development of each student's creative voice.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Dance BFA, Digital Culture (Film) BA, Film BA, Film (Film and Media Production) BFA, or Theatre BA major or Film minor; minimum junior standing OR Visiting University Student
FMP	361	Int Screenwriting	Explores the basic components of feature screenwriting: story creation, story structure, character development, conflict, pace, tone, dialogue. Each of these skills will be revisited in more detail, culminating in a series of writing exercises (10-20 pages each), verbal pitch exercises and other focused exercises designed to develop the student's unique writing voice.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 261 with C or better; Credit is allowed for only FMP 361 or FMP 394 (Intermediate Screenwriting) or FMS 394 (Intermediate Screenwriting) OR Visiting University Student
FMP	365	Developing a Series	Acquaints students with the development process for episodic series (network, cable, Web, on-demand). Also explores the many facets of the television industry (creative, financial, cultural, historical) and surveys the advances in television content along with an analysis of the cultural impact of television on society.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Digital Culture (Film) or Film major or Film & Media Production minor or Film & Media Production concentration; FMP 261 w/ B or better; Credit is allowed for only FMP 365 or FMP 394 (Developing a TV Series) OR Visiting University Student

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FMP	370	Producing	Provides the information and techniques to understand the process of being a producer in the film and media industries.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 300 with C or better; Credit is allowed for only FMP 370 or FMP 494 (Producing Film) OR Visiting University Student
FMP	380	Film Production Crew	Provides practical, on-set experience in the creation of film and digital media, for all students in the BA Film or BFA Film and Media Production programs, in support of projects required by upper-division coursework or otherwise approved and supervised by faculty.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Prerequisite(s): Film (Filmmaking Practices) BA, Film (Film and Media Production) BA, or Film and Media Production BFA major; FMP 300 with C or better; minimum 2.50 cumulative GPA OR Visiting University Student
FMP	385	Portfolio Project Development	Provides the opportunity for all Film and Media Production majors to conceive, develop and complete the intellectual property that will form the basis of their senior portfolio projects.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 285 with C or better; Credit is allowed for only FMP 385 or FMP 398 OR Visiting University Student
FMP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	398	Capstone Development	Provides the opportunity for all Film and Media Production majors to conceive, develop and complete the intellectual property that will form the basis of their required final capstone projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 300 with C or better; minimum junior standing; Credit is allowed for only FMP 385 or FMP 398 OR Visiting University Student
FMP	400	Advanced Short Film Production	Advanced production course for students to make short films in support of senior portfolio.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 300 with C or better OR Visiting University Student
FMP	401	Senior Practicum	Weekly advising and consulting with faculty and peers on senior portfolio projects, professional development and career planning.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): FMP 385 with C or better; senior standing
FMP	403	Independent Film	Considers the history of avant-garde, alternative and independent film making in American cinema, with an emphasis on shifting technology, industrial practices and cultural innovations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	404	World Cinema	Films and filmmakers from Europe, Asia, Australia, the Far East, South America, and the Caribbean. Emphasizes cultural content and filmmaking philosophies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	G	Prerequisite(s): ENG 102, 105 or 108 with C or better
FMP	405	Film & TV: Pioneers, Practices	Examines major historical figures, generic conventions and institutional practices in the global film, television and media industries.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	411	Film Sprk Welcome to Hollywood	Students gain a sense of how the entertainment industry works by examining the product life cycle of filmed entertainment products including inception, development, casting, packaging, financing, production, marketing and distribution.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum junior standing; Credit is allowed for only FMP 411 or FMP 494 (Welcome to Hollywood) OR Visiting University Student
FMP	415	Sound Design for Film&Media II	Advanced sound design and delivery for film and media, including post-production sound, music, effects, ADR, and other elements; advanced use of Avid Pro Tools and other industry standard audio recording and producing hardware and software.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 315 with C or better; Credit is allowed for only FMP 415 or FMP 494 (Advanced Sound Design Film and Media) or FMP 598 (Advanced Sound Design Film and Media) OR Visiting University Student
FMP	417	Bus & Legal in Entertainment	Examines standard business and legal elements of the film and media entertainment industry, including historical, theoretical and ethical frameworks for understanding current practices.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
FMP	418	Directing for Film & Media II	Expands on effective techniques for working with actors and on the director's preparation for shooting scenes and films. Students learn while directing with professional set protocols in this hands-on, set-driven class.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 318 with C or better OR Visiting University Student
FMP	420	Post-Production III	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and software, advanced sound design and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Students receive critiques of their work after each project to determine the development of their proficiency of craft and creativity.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 320 with C or better OR Visiting University Student
FMP	445	Cinematography II	Advanced cinematographic and motion picture photography techniques, including study of advanced lighting, integration of digital technologies, new hardware and software, and professional development for directors of photography, camera assistants, and grip/electric department personnel.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 345 with C or better; Credit is allowed for only FMP 445 or FMP 494 (Advanced Study: Cinematography) OR Visiting University Student

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FMP	461	Advanced Screenwriters Wrkshp	For advanced screenwriting students to create screenplays for television, film and new media in support of senior projects and professional portfolios.	N		LEL	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 385, FMP 398, or THF 397 with C or better; Pre- or corequisite(s): FMP 361; Credit is allowed for only FMP 461 or FMP 494 (Writing the Feature) or FMP 598 (Writing the Feature) OR Visiting University Student
FMP	465	Series Writers Workshop	Offers selected students the opportunity to develop and refine material for a proposed episodic series through collaborative workshops and writing sessions that are equivalent to the development processes utilized in various industry paradigms (network, cable, Internet/on-demand).	N		LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 365 or 394 (Developing a TV Series) with C or better; Digital Culture (Film) or Film major or Film & Media Prod. minor or BIS (Film & Media Prod.); minimum junior standing. Credit for only FMP 465 or 494 (Television Writing Workshop)
FMP	475	Producing Series	Function and responsibilities of episodic series producers and production executives for television-based platforms (network, cable, internet/on-demand). Explores a close examination of the business of television, specifically budget, license fees, distribution, and union obligations. Other topics include the structure of studios and networks, producing and marketing series for traditional and new media platforms, and general entertainment business practices.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film & Media Production) BA, Film (Filmmaking Practices) BA, or Film and Media Production BFA major; minimum junior standing OR Visiting University Student
FMP	480	Film Lab I: Production	Production and principal photography for student-generated collaborative short film/media projects for senior portfolio.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 385 or 398 with C or better OR Visiting University Student
FMP	481	Film Lab II: Post-Production	Completion of principal photography and all phases of editing/post-production on student-generated collaborative short film/media projects for senior portfolio, including final delivery and exhibition.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 480 with C or better OR Visiting University Student
FMP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): minimum 45 hours
FMP	485	Portfolio Prep and Rev II	Helps students in the advanced development, design, preparation and presentation of senior portfolio milestone for faculty review, as well as mentors fellow students in early portfolio development.	N		PRA	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): Film and Media Production BFA major; senior standing OR Visiting University Student
FMP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6		Prerequisite(s): Barrett Honors student
FMP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FMP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Prerequisite(s): Film and Media Production student or Filmmaking Practices student or Film and Media Production minor OR Visiting University Student
FMP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-7		
FMP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Pre-requisites: Film & Media Production or Filmmaking Practices student
FMP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		SEM	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		RSC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Pre-requisite: Fine Arts Graduate student
FMS	100	Intro to Film & Media Studies	Introduces the narrative structure, visual style and cultural elements of film and media.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	

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FMS	110	Introduction to New Media	Explores the cultural effects of new media technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
FMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	200	Film and Media History	Introduces the technological, aesthetic, social and economic aspects of media history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
FMS	209	Screenwriting Fundmntls	Studies the creativity and the technique of screenwriting for the conventional narrative film and for TV; student writing exercises culminate in a script for micro cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		
FMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	300	Television Studies	Examines approaches to studying the culture and history of American television.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	302	U.S. Media Industries	Examines the business of contemporary U.S. film, television, and new media and its relationship to artistic vision and production through research and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 OR Visiting University Student
FMS	309	Intermediate Screenwriting	Utilizing the elements of storytelling, students develop and write a treatment and the first act of a screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMP 261, FMS 209 or THP 261 with C or better OR Visiting University Student
FMS	340	Contemp Amer Film/Pop Culture	Analyzes American films, television programs, and music as popular cultural documents.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better OR Visiting University Student
FMS	341	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
FMS	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
FMS	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
FMS	351	Emerging Digital Media	Analyzes modern cultural and digital technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS 352 or TCL 352
FMS	354	Critical Studies in Animation	Provides critical and practical tools for analyzing mainstream, experimental, and hybrid animation aesthetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): FMS 100 OR Visiting University Student

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FMS	360	Media Genres	Studies in select media genres.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR FMS 100 or 200 with C or better OR minimum 45 hours OR Visiting University Student; Credit is allowed for only FMS 360 or FMS 394 (Sci Fi Cinema: Technology, Genre & Culture)
FMS	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Credit is allowed for only FMS 370 or TCL 370
FMS	374	Film and Media Visionaries	In-depth examination of the career and body of work of an innovator in media, whether a producer, director or screenwriter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
FMS	375	LGBTV: TV and Sexuality	Some of TV's most popular shows now feature lesbian, gay, bisexual and transgender (LGBT) characters. This course looks at representations of LGBT characters and personalities, with a focus on the specificities of the television industry. Looks at LGBT representations on reality shows, sitcoms and dramas in relation to the economic and regulatory structures of the TV business to understand the complex functions of sexual identity in the television industry. Addresses particular texts and images as they relate to TV's industrial practices, paying attention to cultural, political and aesthetic issues of minority representations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 375 or FMS 394 (LGBTV: Television and Sexuality)
FMS	377	Baseball, Film & America Dream	Critical viewing and analysis of both narrative and documentary baseball film. Genre typically explores American values and national culture, and changes in our concepts of gender roles, race, aging, social class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 OR Visiting University Student
FMS	380	Race and Gender in U.S. Media	Critical analysis of how media shapes perceptions of race and gender in U.S. society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	409	Advanced Screenwriting	Utilizing the elements of storytelling, students outline, develop, and write a feature-length screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMS 309 with C or better
FMS	411	Screenwriting Adapt Studies	Explores the many issues related to narrative adaptation across movies and other media such as television, various Internet phenomena and gaming.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor or BIS Film and Media Studies concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 411 or FMS 494 (Screenwriting Adaptation Studies)
FMS	412	Story Analysis for Film & TV	Investigates Hollywood's creative development process from submission to shooting script. Critiques the scripts of award-winning films, and evaluates the necessary elements of a well-told story.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor, or Film and Media Studies BIS concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 412 or FMS 494 (Story Analysis for Film and TV)
FMS	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student

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FMS	426	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
FMS	427	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
FMS	430	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430
FMS	440	Los Angeles: Movies and Culture	Explores film treatment of the historical culture of Los Angeles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): BA Film and Media Studies major or minor or BIS Film and Media Studies concentration; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	441	Global Cinema	Examines how film represents three important dimensions of globalization: its relationship to national culture, terrorism, and immigration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	442	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
FMS	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
FMS	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
FMS	450	Technology, Culture, and Media	Studies the socio-political relationships among technology, culture, and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	455	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension on the big and small screens. By examining how comic conventions, personae and sensibilities in standup respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences—often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 455 or FMS 494 (Comedy as Social Discourse)
FMS	460	Masculinity and Film	Examines the representation of masculinity and the male body in film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	461	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student

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FMS	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
FMS	466	Constructing Border on Film	Explores the U.S.-Mexico border on film, examining how border images have been constructed and shaped over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS 466 or TCL 466
FMS	468	Crime & Violence American Film	Addresses three primary aspects of crime and violence in film: representation, societal attitudes, effects on audience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	471	Latinos in Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
FMS	474	Women and Power in Media	Examines the relationship between power and gender for women and other feminized subjects in media.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, 108, FMS 100, or 200 with C or better; OR minimum 45 hours; Credit is allowed for only FMS 474 or FMS 494 (Fighting Femmes: Women and Power in PopularCulture) OR Visiting University Student
FMS	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
FMS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		
FMS	490	Capstone Seminar	Capstone seminar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): BA Film and Media Studies major; minimum 56 hours; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
FMS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7		
FMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	502	Hollywood Film Historiography	This course is offered online only. Explores historiographic and critical scholarship on Hollywood as an industrial, cultural, and aesthetic enterprise.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	503	Media Industries	Examines the business of contemporary U.S. media practices including film, television, Web-based media, music, video games, mobile phones, and other interactive media. Explores the changing economic structures of these media industries and their relationship to artistic vision and production.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Master of Liberal Studies student or MAS in American Media and Popular Culture student. Credit is allowed for only MLS or FMS 504
FMS	507	Crime & Violence American Film	This course is available online only. Focuses on historiographic and critical scholarship on three aspects of crime and violence in American film: (1) regulation and censorship; (2) representation and society; and (3) theories about the effects on audiences of viewing crime and violence in films.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student

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FMS	508	Race,Gender&Sexuality in Media	Investigates the diverse ways in which race and gender are represented in American film history and culture. In a broader context, also analyzes how the meaning of race and gender, and their intersectionality, has shifted and changed across time and space, and how cinema has contributed to these shifts. Gives attention to the relationships among visual style, narrative structure, generic convention and identity. Students become more literate about the power of film to reflect and refract ideologies of race and gender, and to analyze how these identities impact the experiences of individuals and groups in our society.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	510	Digital Media Studies	Digital media technologies have radically shifted U.S. society and culture. Almost all forms of media are now digital, even broadcast television and movie theatres now use digital technologies. To understand our new media landscape, we must understand technology and computation in addition to media theory. Provides the interdisciplinary tools necessary for analyzing digital media. Outlines foundational concepts with particular emphasis on analyzing hardware and interface design and understanding computational elements such as algorithms. Then examines these issues by exploring algorithm advertising and marketing as well as interactivity and collaboration in videogame spaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	511	Fund Cinema Telev Narr Online	Studies the creativity and the technique of screenwriting for the conventional narrative film and for television. Student writing exercises culminate in a script for micro-cinema. Seminar. Pre-requisite: online student in MAS American Media and Popular Culture	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	512	Inter Cinema & Tv Narrative	Focuses on the feature-length screenplay; students complete the first act and treatment of an original feature.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	520	Cultrl Hst US TV:Theory & Mthd	Engages both the theory and methods of cultural studies as implemented in television studies and U.S. television history (from the 1940s to the present).	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
FMS	522	Los Angeles: Movies & Culture	Focuses on historiographic and critical scholarship of industry, genre and representation in post-war, self-reflexive Hollywood cinema.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	523	Authorship in Film and Media	Explores the notion of authorship in film, television, and digital media by engaging with a number of critical methodologies such as auteurism, structuralism, post-structuralism, feminism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	527	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critiques stereotypes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
FMS	535	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension, on the big and small screens. By examining how comic conventions, personae and sensibilities in stand-up respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences--often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FMS 535 or FMS 598 (Comedy as Social Discourse)
FMS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)

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FMS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
FMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	105	Phys Evid and the Crime Scene	First course in a two-semester series of laboratory and lecture courses focusing on introducing non-scientists to forensic science. Explores the investigative and laboratory technologies behind common forensic techniques utilized in crime scene documentation and reconstruction, the identification and value of physical evidence, documentation and collection of evidence, comparative analysis, and the latest technologies in mobile device forensics.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	106	Biol Behind the Crime Scene	Second of two courses offering the non-scientist an introduction to the forensic sciences. Focuses on the biology and chemistry in analytical techniques used in the crime lab such as quantitative DNA analysis, toxicology and controlled substance analysis. Also covers topics related to death investigation, as well as plant and pollen identification as they relate to forensic science and criminal investigations.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
FOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
FOR	286	Prin. of Forensic Science	Introduces the ways in which science is applied within the legal system. In particular, students examine the diverse disciplines and techniques that comprise forensic science through detailed discussion of each of the major sections recognized by the American Academy of Forensic Sciences (AAFS): anthropology, criminalistics, digital & multimedia sciences, engineering & applied sciences, general, jurisprudence, odontology, pathology/biology, psychiatry & behavioral science, questioned documents and toxicology. Defines and discusses the roles of these disciplines along with ethics and best practices in their application. Students also participate in laboratory activities related to these disciplines and gain an understanding of how to write a case report and provide expert testimony.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116 OR Visiting University Student
FOR	290	Hist Perspect of Forensic Sci	Explores the history and evolution of forensic science and its use in criminal investigations. Topics include: the "discovery" of DNA, the societal impact of forensic science, increased use of forensic science in criminal investigations, and a timeline of technological advances that has helped propel forensic science into popular culture.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Credit is allowed for only FOR 290 or FOR 294 (Historical Perspectives of Forensic Science)
FOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N		PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student

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FOR	350	Computer Forensics	Concepts of computer forensics, forensic analysis techniques, computer forensic tools and software for forensic investigators, network forensics, data forensics, mobile device forensics, malware forensics, cyber crimes and fraud, computer security incident response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 100 or higher with C or better OR CIS 105 with C or better
FOR	370	Mod Practices in Forensic Sci	In-depth treatment of the practices and procedures used by forensic scientists in the modern crime laboratory. Students apply lecture topics to forensic-themed laboratory activities.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181; BIO 182; BIO 305 or FOR 286; CHM 113; CHM 116
FOR	377	For Analyt Chem Lab	Focuses on common analytical techniques currently used in forensic laboratories and provides further hands-on experience with methods and instrumentation utilized in a modern crime laboratory. Applies gained knowledge to lab exercises designed with crime laboratory evidence types and protocols in mind.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): FOR 375 or LSC 375 with C or better; FOR 376 or LSC 376 with C or better
FOR	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347; Credit is allowed for only FOR 380 or LSC 380
FOR	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
FOR	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
FOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	400	Comparative Forensics	Familiarizes students with the comparative methods used in the forensic analysis of fingerprint, questioned document and firearms evidence. Discusses the theory and principles of individualization as assessed in forensic casework. Exposes the operation and theory of the scientific instruments used when performing comparative analysis. Reinforces learning objectives through case studies, practical exercises, outside projects and guest lectures.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; Credit is allowed for only FOR 394 (Comparative Forensics) or FOR 400 OR Visiting University Student
FOR	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology, the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286 OR BIO 353; LSC 347; Credit is allowed for only FOR 394 (Forensic Toxicology) or FOR 401 or PTX 401
FOR	402	Forensic Biology	Focuses on molecular genetics and biology pertaining to forensic science. Course subject matter includes: the history of forensic biology, serological techniques, DNA and DNA analyses, topics in molecular genetics, and forensic biology in the crime lab. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic biology). Addresses other topics such as current court cases and topics related to forensic biology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; LSC 347; LSC 348; Credit is allowed for only FOR 402 or FOR 394 (Forensic Biology) OR Visiting University Student
FOR	403	Comparative Forensics Lab	Largely focuses on the application of physical examination of various types of evidence including fingerprints, tape, footwear, handwriting, paper, cartridge casings and bullets. Provides hands-on experience in latent print, trace, questioned document and firearms analysis. These analyses include the utilization of stereozoom microscopes, comparative microscopes, compound microscopes, alternative light sources and other hand tools employed by forensic scientists.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; FOR 400 OR Visiting University Student

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FOR	404	Forensic Toxicology Lab	Focuses on best practices and contemporary protocols and practices used by forensic toxicology labs. Offers topics and exercises dealing with drugs of abuse including alcohol, prescription medications, over the counter medications, and other substances which may be found in the body by the forensic toxicologist.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; FOR 401; Credit is allowed for only FOR 404 or PTX 404 OR Visiting University Student
FOR	405	Techniques in Forensic Bio Lab	Covers the basic practical concepts of forensic biology and those used in a biological context at crime scenes. Laboratory exercises include blood pattern analysis, serology, presumptive tests, comparison of hair evidence and DNA analysis.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s) with C or better if completed; BIO 305 or FOR 286; FOR 402; LSC 347; LSC 348 OR Visiting University Student
FOR	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
FOR	410	Testimony&Ethics Forensic Sci	Focuses on the relationship between forensic science and the courtroom. Students learn the accepted standards and professional practices as they relate to forensic scientists and other forensic practitioners. Topics include ethical obligations of a forensic scientist, quality assurance practices and the accreditation process. Students also review the role the expert witness plays within the court system while obtaining an understanding of behavioral and ethical issues that can be encountered from crime scene investigation through to the courtroom. Includes mock trial scenarios.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 305 or FOR 286 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student
FOR	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
FOR	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
FOR	426	Analytical Chemistry Lab	Students learn basic principles of analytical chemistry and explore a wide range of common techniques and methods with applications to forensic science and life sciences. Places specific focus on techniques common in modern analytical laboratories, including gas chromatography, mass spectrometry, FTIR and NMR spectroscopic techniques. Other topics include interpretation of analytical data and evaluation of error and uncertainty in measurements.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
FOR	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
FOR	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
FOR	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
FOR	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456

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FOR	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
FOR	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; LSC 347; Credit is allowed for only FOR 480 or FOR 494 (Advanced Topics in Human Forensic DNA Typing) or LSC 480 or LSC 494 (Advanced Topics in Human Forensic DNA Typing)
FOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
FOR	485	For Sci Capstone	Culmination course integrating all components of Forensic Science major courses demonstrating knowledge and competency in the field of forensic science. Includes Forensic Science Assessment Test (FSAT) preparation and FSAT completion.	N		LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 305 or FOR 286; FOR 410; 6 additional hours of upper-division FOR coursework; senior standing
FOR	486	Peer Mentor Forensic Sci	Advanced students learn and apply mentoring skills in teaching labs.	N		SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
FOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
FOR	500	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	501	Forensic Toxicology	Includes the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body, as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology).	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	502	Forensic Botany	Teaches students the historical and potential uses of plants and other organisms traditionally included with plants as evidence in forensic investigations.	N		LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	503	Forensic Entomology	Presents current information on the role of arthropods in decomposition, the role of forensic entomology in criminal and civil investigations and the increasing importance of science on society. Provides an understanding of the importance and role that arthropods play in civil and criminal investigations.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	525	Forensic Science & Governance	Focus on quality assurance and control within a crime laboratory and covered topics specific to laboratory directors and the management of all activities within the laboratory critical to meeting local, regional and national standards.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	532	Principles/Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N		LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
FOR	540	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	550	Ethics in Forensic Science	Covers several professional codes of ethics and common ethical dilemmas that may confront criminalists and other forensic scientists.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	560	Quant Methods/For Sci Research	Focuses on developing foundations for using statistical analyses as research tools in the forensic sciences, with special emphasis placed on the fundamentals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	565	Lab Leadership, Policy & Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
FOR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	101	Elementary French I	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in FRE 101 if credit with C or better earned in FRE 102, FRE 110, FRE 201, FRE 202 or FRE 210 OR Visiting University Student

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FRE	102	Elementary French II	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 101 with C or better OR French Placement Test score of 281-340; Students may not enroll in FRE 102 if credit with C or better earned in FRE 110, 111, 201, 202, 210, 305, 311, 312, 321, 322, 411, or 412 OR Visiting University Student
FRE	110	Intensive French I	Proficiency-based course that provides an intensive introduction to the French language and culture. Introduces the language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative skills. Class time is spent mainly on communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only FRE 110, FRE 101 or FRE 102 with a C or better OR Visiting University Student
FRE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	201	Intermediate French I	Grammar review, with emphasis on development of skills of speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 102, 110, or 111 with C or better OR French Placement Test score of 341-394; Students may not enroll in FRE 201 if credit with C or better earned in FRE 210 OR Visiting University Student
FRE	202	Intermediate French II	Continuation of grammar review with emphasis on development of skills in speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 201 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 202 if credit with C or better earned in FRE 210 OR Visiting University Student
FRE	210	Intensive French II	Second semester of an intensive, proficiency-oriented language course designed to develop functional proficiency in French in a dynamic communicative environment. Class time is spent mainly on a variety of communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): FRE 102 with B or better OR FRE 110 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 210 if credit with C or better earned in FRE 201 or FRE 202
FRE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	305	Readings in French Literature	Survey of francophone literature designed to teach reading with facility and comprehension. Vocabulary building, familiarity with literary terms, their meaning and use, and introduction to textual analysis of literary genres are major elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better; Students may not enroll in FRE 305 if credit earned in FRE 321 or FRE 322 OR Visiting University Student
FRE	311	Oral and Written Expression I	Practices interpersonal and interpretive writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better OR French Placement Test Score of 477+ OR Visiting University Student
FRE	312	Oral and Written Expression II	Practices presentational writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better or Visiting University Student
FRE	315	French Phonetics	Practice and theory of French pronunciation. Emphasizes standard French, although an overview of regional varieties is offered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisites: FRE 311
FRE	319	Business French	Introduces the structure, vocabulary, and practices of the French business world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; FRE 312
FRE	321	Fre Cultural Masterpieces I	Masterpieces of French literature of the Middle Ages through the 18th century, and related films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): FRE 305 with C or better; FRE 311 or 312 with C or better OR Visiting University Student
FRE	322	Fre Cultural Masterpieces II	Masterpieces of French literature and film from the 19th to 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): FRE 305; FRE 312 OR Visiting University Student
FRE	325	French Lang & Cult thru Film	Reviews French vocabulary and grammar through French films, with emphasis on listening comprehension and oral and written production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s) with C or better: FRE 311, FRE 312
FRE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	411	Advanced Spoken French	Improvement of spoken French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; 6 hours of 300-level French OR Visiting University Student
FRE	412	Advanced Written French	Improvement of composition skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 312; 6 hours of 300-level French

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FRE	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
FRE	415	French Civilization I	Political, intellectual, social, economic, and artistic development of France from its origins to the end of the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites:6 hours of upper-division French
FRE	416	French Civilization II	Political, intellectual, social, economic, and artistic development of France from the 18th century to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	pre-requisites:6 hours of upper-division French
FRE	421	Structure of French	Phonology, morphology, syntax, semantics, and varieties of French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): FRE 311, 312; SLC 201
FRE	453	Theater of the 19th Century	From Romantic drama to the Symbolist Theater. Representative plays of Hugo, Musset, Vigny, Dumas, Becque, Rostand, Feydeau, and Mirbeau.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	461	Modern Narrative	Representative authors from Gide to the new Nouveau Roman.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
FRE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
FRE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FRE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
FRE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	521	History of the French Language	Principal phonological, morphological, and semantic developments of French from Latin to present, with emphasis on Old and Middle French. Some familiarity with Latin is recommended.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	550	French for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FRE 494 (French for Reading Knowledge) or FRE 550 or FRE 598 (French for Reading Knowledge)
FRE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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FRE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	100	Introduction to Engineering	Introduces the engineering design process; working in engineering teams; the profession of engineering; engineering models, written and oral technical communication skills.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	2		
FSE	104	EPICS Gold I	First of a sequence of two one-credit service-learning courses in which EPICS GOLD groups are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students work together to assess the feasibility and sustainability of their proposed plans for long-term projects that solve problems and benefit clients and often, the larger community. Project work centers on the engineering, technology, computing, sustainability, business and other needs of a not-for-profit community partner; interdisciplinary group interaction is an integral element for the project success.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student; Credit is allowed for only FSE 104 or FSE 194 (EPICS Gold I) OR Visiting University Student
FSE	150	Grand Challenges for Engrg	Explores social dimensions of developing engineering solutions to meet local and global challenges. Introduces National Academy of Engineering (NAE) Grand Challenges for engineering and Grand Challenge Scholars Program.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	SB	Prerequisite(s): Admission to the Engineering Grand Challenge Scholars Program OR Visiting University Student
FSE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	HU	Credit is allowed for only SOS 181, FSE 181, or CEE 181
FSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	201	Engineering Undergraduate TA	Theory and rationale of active learning and teaching strategies that stimulate intellectual development. Leadership, teaching, teamwork and communication skills needed to facilitate effective undergraduate learning in engineering. Implementation of these skills in a classroom setting.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Ira a Fulton School of Engineering major; minimum sophomore standing OR Visiting University Student
FSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	301	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Prereqs: Business student; ACC 241, 242 or 271 with C or better OR Engineering student; minimum junior standing OR non-business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
FSE	310	Transfer Success in FSE	Introduces the unique elements, culture, challenges and opportunities at ASU and within the Ira A. Fulton Schools of Engineering. Helps students succeed as engineering students and ultimately as engineers.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Engineering undergraduate student; Credit is allowed for only FSE 310 or FSE 394 (Transfer Success in Engineering) OR Visiting University Student
FSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
FSE	399	Cooperative Work Experience	Work periods with industrial firms or government agencies alternated with full-time course work. Not open to students from other colleges.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-15		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student

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FSE	404	EPICS Gold: EPICS in Action	Second of a sequence of two one-credit service-learning courses in which Engineering Projects in Community Service (EPICS) teams are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students in this class work together to develop design solutions for representatives of community partners. The students are expected to continue their prior work in designing engineering solutions that solve problems and benefit clients and often, the larger community. Interdisciplinary group interaction is an integral element for the project success. Students may be continuing a project from a previous FSE 104 or FSE 404 class, or they are invited to begin work on a new project. Encourages student participation for multiple consecutive semesters on a project. Groups are composed of freshmen through seniors.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-2		Prerequisite(s): Fulton Engineering student; minimum junior standing OR FSE 104 OR FSE 494 (EPICS Gold: EPICS in Action) OR Visiting University Student
FSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		
FSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6		Prerequisite(s): Barrett Honors student
FSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-3		
FSE	501	Technology Entrepreneurship	Fundamental principles and concepts of technology entrepreneurship.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
FSE	502	Strategic Enterprise Innovatin	Strategies, techniques, and practices of process, product, and management innovation across the enterprise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: School of Engineering Graduate student
FSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		Prerequisite(s): Fulton Engineering graduate student
FSH	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Credit is allowed for only FSH 125 or HDA 125
FSH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	201	Textiles Survey	Offers a broad survey of textiles as they relate to art, fashion and their place in human culture. Topics explore material content, weaves and textile properties; the artistic and social history of textiles; modern textile manufacturing and consumption; and innovations in textile invention for science and industry. The goal of this semester is for you to more fully understand the underlying content and structure of textiles in order to better appreciate the overwhelming variety of textiles that have been created over time, place, gender, ethnicity, purpose and methodology.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 201 or ART 294 (Textiles Survey) OR Visiting University Student

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FSH	202	Apparel Construction	Prepares students for a career in the apparel industry or for continued study in graduate school. Introduces core concepts of fashion materials and construction: cutting, sewing and finishing techniques for creating garment prototypes. Focuses on the fashion industry as well as apparel construction and production.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
FSH	203	Fashion Illustration	In this studio setting, students practice drawing the fashion figure from a live model, both in leotard and in clothing, facilitating understanding of drape, shape, shadow, silhouette and how it relates to fashion design. Demonstrates and practices fundamental skills of visual communication and problem solving, including fabric rendering and proportion and how it relates to the fashion designer's sketch. Brief lectures, demos and critiques are an integral component of each class. Materials used in class include, yet are not limited to, charcoal and gouache.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or ART 111; Credit is allowed for only FSH 203 or FSH 294 (Fashion Illustration) OR Visiting University Student
FSH	204	Social Aspects of Fashion	Introduces ways of examining clothing and fashion in context. How do we read images and representations of clothing and how do they manipulate the meaning of the garment and its wearer? In what ways is this visual language used to select and produce fashion? What influences how we dress on a daily basis and over time? These are just some of the questions about appearance, clothing and culture that are used to embark on a participatory research project and as a point of departure for class discussions and related readings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	L or HU or SB	Prerequisite(s): ENG 101, 102, 105, 107, or 108; FSH 125 OR Visiting University Student
FSH	206	Fashion Design	Provides a foundation for the design process through drafting, flat pattern, construction and draping the professional way. In this hands-on setting, students apply principles of art to clothing design. Develops an understanding of the design concept based on the relationship of the two-dimensional pattern shape to the three-dimensional body.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 202 OR Visiting University Student
FSH	208	Fashion Technology	Introduces the fundamental concepts, procedures and techniques used for manipulating images and documents in digital imaging software and data management software for fashion applications.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): INT 121 OR Visiting University Student
FSH	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 280 or MKT 280
FSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	300	Global Fashion Industry	Considers the textile and apparel industries in a global context. Examines issues from several viewpoints providing the facts and data needed to consider the ramifications of events with unbiased perspectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	G	Prerequisite(s): FSH 204 or 206 with C or better OR Visiting University Student
FSH	325	Personal Style and Wardrobe	Methods of clothing selection, coordination, and evaluation for personal style and wardrobe strategies.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only FSH 325 or FSH 394 (Personal Style and Wardrobe) OR Visiting University Student
FSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
FSH	397	Fashion Capstone Development	Guides students in the development of a detailed capstone project proposal. Capstone projects are completed with faculty/staff guidance in subsequent fashion capstone course. Students arrive at a project to be completed in one or two semesters that represents the culmination of their education.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): minimum 60 hours
FSH	435	Contemporary Fashion	Identifies and analyzes contemporary fashion designers and brands in relation to fashion research and inspiration for design and branding. Provides a comprehensive understanding to their approach to silhouettes, construction innovation, textiles, garment details and accessories.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
FSH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): minimum 45 hours
FSH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
FSH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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FSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours
FSH	497	Fashion Capstone	Formally structures the relationship between students conducting independent capstone projects and faculty/staff mentors. A variable credit practicum course, students implement, document and evaluate their capstone project. Acceptance into this course depends on the successful completion and acceptance of a project proposal and formal instructor approval in prerequisite course.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3-9		Prerequisite(s): FSH 397 with C or better
FSH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours
FSH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 45 hours
GAP	10	Academic Skills I	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an international English-medium higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	11	Academic Skills II	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to continue to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	12	Academic Skills III	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to refine both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	20	Academic Foundations I	Designed for international ASU-USA Pathways students, this non-credit course develops oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	21	Academic Foundations II	Designed for international ASU-USA Pathways students, this non-credit course continues developing oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	22	Academic Foundations III	Designed for international ASU-USA Pathways students, this non-credit course refines oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	30	Communication Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice theories of communication skills in public, small group and interpersonal settings. Also supports, linguistically and culturally, students' study of speech communication processes such as problem solving, decision making and information sharing.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	31	Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to comprehend and apply math terminology in various math contexts through in-class problem-solving activities and presentations.	N	LEL	N	GNA	Office of the University Provost	Global Launch	1		

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GAP	32	CIS Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of computers in business and society and use of word processing, spreadsheets, database, presentation and application software. In addition, the course supports the students' linguistic ability to discuss computers in terms of ethics and social issues as well as technology and business.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	33	Global Management Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, communication skills and cultural awareness needed to comprehend and apply basic concepts related to management in a global environment including global politics, legal systems and sociocultural environments.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	34	Info Tech Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	35	Info Tech Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	36	Comp. Software Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	37	Comp. Software Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	41	History Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend global history by exploring topics such as: changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare and women around the world.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	42	Sociology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the fundamentals of sociology. Also supports, linguistically and culturally, students' study of social organization, interaction and social change.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	43	Chemistry Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of chemistry, particularly for the needs of students in the physical, biological and earth sciences.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	44	Biology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of biology including the method of scientific inquiry and behavior of matter and energy in biological systems.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		

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GAP	45	Physics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of physics, including kinematics, Newton's laws, the relationship of energy and momentum, as well as the dynamics of particles, solids and fluids.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	46	Applied Academic English I	Designed for international ASU-USA Pathways students, this course supports student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	47	Applied Academic English II	Designed for international ASU-USA Pathways students, this course continues supporting student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	80	Business Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice topics in math for business analysis.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	81	Human Systems Engineer Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems, with particular attention to the intersection of psychology and engineering.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	82	Engineering Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	83	Engineering Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	90	Macroeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	91	Microeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	20	Language Foundations	Entry-level course explores the grammatical, syntactic and cultural underpinnings of the English language for international students studying English as a foreign language.	N	LEC	N	GNA	Office of the University Provost	Global Launch	0		
GBL	22	Training	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	24	Field-Based Learning	-	N	LEC	N	GNA	Office of the University Provost	Global Launch	3		
GBL	25	English for Specific Purposes	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	26	Project Work	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	27	Current Issues and Topics	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		

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GBL	28	Academic Culture	Multidisciplinary approach to American academic culture. Designed for international students who will be matriculating into an American university and explores such themes as study skills, using academic resources and participating fully in academic life.	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	40	Basic 1 Listening/Speaking	On completing the Basic 1 Listening/Speaking course, a student will be able to (1) follow directions and comprehend main ideas and supporting details of short, simple passages and conversations spoken slowly; and (2) speak informally to express basic needs, habits and descriptions in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	41	Basic 1 Reading/Writing	On completing the Basic 1 Reading/Writing course, a student will be able to (1) recognize main ideas and find supporting details in selected reading passages of a few pages; and (2) produce a guided writing with a personal point of view, demonstrating level-appropriate control of grammar, word forms, and punctuation.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	42	Basic 1 Structure	This course covers helping verbs, pronouns, adjectives, count/non-count nouns, and tenses (present, present progressive and simple past).	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	43	Basic 1 Communication	International students studying English as a foreign language study the fundamentals of English communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	50	Basic 2 Listening/Speaking	On completing the Basic 2 Listening/Speaking course, a student will be able to follow instructions, directions, and comprehend the main ideas and supporting details of 1-3 minute announcements and conversations with controlled speech and delivery; and (2) speak informally in basic social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	51	Basic 2 Reading/Writing	On completing the Basic 2 Reading/Writing course, a student will be able to (1) recognize main ideas, find supporting details, and recognize the organizational pattern in short and page-length reading passages; and (2) produce a composition, based on a model, with a personal point of view, demonstrating level-appropriate control of grammar, word form, and punctuation.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	52	Basic 2 Structure	Learn grammar for everyday writing and speaking--present, progressive and future tenses, irregular verbs in the past tense, modal verbs, pronouns, order of adjectives, and comparisons.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	53	Basic 2 Communication	Learn to communicate effectively at the basic level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	60	Intermed 1 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 1-5 minute listening passages, conversations, instructions, and directions with controlled speech and delivery; and (2) speak informally in common social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	61	Intermed 1 Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and find supporting details in selected reading passages of a few pages; and (2) produce an organized composition, with a personal or an objective point of view, demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	62	Intermediate 1 Structure	Improve grammar for everyday writing and conversation, present perfect and present perfect continuous and future tenses, noun clauses and grammar to cover frequency, duration, possibility and necessity.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	63	Inter 1 Comm	International students studying English as a foreign language continue to build on the fundamentals of English communication, including working on vocabulary expansion, pronunciation, idiom decoding, fluency and verbal accuracy.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	64	Inter 1 Business: Intro	International students studying English as a foreign language, learn the fundamental vocabulary, concepts and cultural customs of business in an American context.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		

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GBL	65	Int Social Sciences	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for American social sciences. Designed for students at an intermediate level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	66	Inter STEM	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for STEM studies. Designed for students at an intermediate level of English proficiency.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	70	Intermed 2 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 5-10 minute general topic listening passages with modified speech and delivery; and (2) speak formally and informally on a variety of general topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	71	Intermed 2 Reading/Writing	On completing this course, a student will be able to recognize the main ideas and supporting details and distinguish between fact and opinion in a reading passage of several pages; and (2) produce a composition, based on a writing task, with an objective point of view demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	72	Intermediate 2 Structure	Focus on an overview of all the tenses. This course also covers passive voice and sequence of tenses with adverbial clauses.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	73	Intermediate 2 Communication	Learn to communicate effectively at the intermediate level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	University College	Global Launch	3		
GBL	74	Intern 2: Business Management	International students studying English as a foreign language discover key concepts and ideas related to business management. Students have the opportunity to speak, read and write about, as well as listen to, accessible levels of business management materials, including work and motivation, company structure and recruitment.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	75	Inter American Culture Studies	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	76	Intermediate Bridge to ASU	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	80	Advanced 1 Listening/Speaking	On completing the Advanced 1 Listening/Speaking course, a student will be able comprehend the main ideas and supporting details of brief academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	81	Advanced 1 Reading/Writing	On completing the Advanced 1 Reading/Writing course, a student will be able to (1) recognize the main ideas and supporting details and determine logical inferences in selected general reading passages of several pages; and (2) produce a composition, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	82	Advanced 1 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	85	Humanities and Design	In this communicative, content-driven course, international students studying English as a Foreign Language continue to build their learning of ways to speak, write and critically analyze the vocabulary, concepts and context for humanities and design studies. Designed for students at an advanced level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	90	Adv 2 Core Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of complex but abbreviated academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		

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GBL	91	Adv 2 Core Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and supporting details, and determine logical inferences in authentic and selected academic and general reading passages of several passages; and (2) produce a well-developed essay, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	92	Advanced 2 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	93	Advanced Communication	Learn to communicate effectively at the advanced level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	94	Business English Special Topic	Learn to communicate effectively in a variety of business situations and develop English skills necessary for success in today's business world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	95	Adv American Culture Studies	Learn about American culture and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	96	Academic English Studies	Learn the Academic English necessary for success at an American university or college.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	98	Professl English Special Topic	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GCU	102	Introduction Human Geography	Systematic study of human use of the Earth. Spatial organization of economic, social, political, and perceptual environments.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	113	US and AZ Social Studies	Introduction to the United States and Arizona from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & H	Credit is allowed for only GCU 113 or HST 113 or GCU 194 (US & AZ for Aspiring Eimtry Ed) OR Visiting University Student
GCU	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	Credit is allowed for only HST or GCU 114
GCU	121	World Geography	Description and analysis of areal variations in social, economic, and political phenomena in major world regions.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SB & G	
GCU	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
GCU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
GCU	241	Global Economy in Transition	Production, distribution, and consumption of various types of commodities of the world and relationships to the activities of humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	253	Intro Cultural/Historical Geog	Cultural patterns, including such phenomena as language, religion, and various aspects of material culture. Origins and diffusion and division of the world into cultural areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	322	Geography of U.S. and Canada	Spatial distribution of relevant physical, economic, and cultural phenomena in the United States and Canada.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	

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GCU	323	Geography of Latin America	Spatial distribution of relevant physical, economic, and cultural phenomena in South, Middle, and Caribbean America. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as numerous analytical essays and an in-depth research paper, in addition to regular tests and quizzes, are required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	325	Geography of Europe	Broad and systematic overview of Europe, emphasizing physical, economic, and cultural phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	326	Geography of Asia	Spatial distribution of relevant physical, economic, and cultural phenomena in Asia, excluding the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	328	Geography Middle East/N Africa	Spatial distribution of relevant physical, economic, and cultural phenomena in the Middle East and North Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	332	Geography of Australia/Oceania	Spatial distribution of relevant physical, economic, and cultural phenomena in Australia, New Zealand, and Pacific Islands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	344	Geography Hispanic Americans	Examines the homelands, migrations, settlements, landscapes, roles, and selected cultural traditions of Hispanic Americans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	350	The Geography of World Crises	Contemporary world crises viewed from a perspective of geographic concepts and techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	351	Population Geography	Demographic patterns; spatial, temporal, and structural investigation of the relationship of demographic variables to cultural, economic, and environmental factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
GCU	357	Social Geography	Environmental perception of individuals and groups. Stresses the spatial aspect of social and physical environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	359	Cities of the World I	Historical evolution of urban patterns and structures in the Middle East, India, Southeast Asia, China, Japan, and Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	
GCU	361	Urban Geography	External spatial relations of cities, internal city structure, and spatial aspects of urban problems in various parts of the world, particularly in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	362	Journey Stories	Explores journeys, storytelling and geographies--real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
GCU	364	Energy in the Global Arena	Production, transportation, and consumption of energy, emphasizing the electric power industry and its environmental problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	373	Intro to Geographic Info Scien	Introduces theoretical and computer-based aspects of Geographic Information Systems, involving data analysis and map generation.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	4	SG	Pre-requisite: PSY 230 or SBS 304
GCU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	414	Teaching Geography Standards	Introduces Arizona Geography Standards for K-12 educators, emphasizing exciting curricula and illustrated with best practices by master teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	421	Geography Arizona/SW U.S.	Geography of the Southwest with an emphasis on Arizona. Divided into physical geography, history, people, and economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	424	Geography Mexico/Middle Amer	Central America and Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	

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GCU	425	Geography Mexican Amer Border	Geography of a binational and bicultural region. Examines settlement, boundary issues, ethnic subregions, population change, industrial development, and urban growth.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GCU	426	Geography Russia/Surroundings	Examines the geography of Russia and other post-Soviet states.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	432	Geography of China	Examines the physical, economic, cultural, social, demographic, agricultural, political, historical, and environmental aspects of the geography of China.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	433	Geography of Southeast Asia	Examines the biophysical and social features of Southeast Asian nations and peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	441	Economic Geography	Spatial distribution of primary, secondary, and tertiary economic and production activities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	442	Geographical Analysis of Trans	Networks, modes, economics, and flows at the urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GCU	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
GCU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GCU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GCU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	496	Geographic Research Methods	Scientific techniques used in geographic research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GPH 111 with C or better; GCU 102 with C or better; GIS 205 with C or better OR Visiting University Student
GCU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GCU	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
GCU	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 514 or SOS 514
GCU	515	Human Migration	Economic, political, social, and geographic factors underlying population movements. Migration selectivity, streams and counter-streams, labor migration, and migration decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum & Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum & Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum & Env Sys)
GCU	529	Contemp Geographic Thought	Comparative evaluation of current philosophy concerning the nature and trends of geography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	542	Geog Analysis Transportation	Examines the geographical aspects of transportation systems. Looks at the geography of networks; transport costs and rates; different modes of transport, trade, economic development, and technology. Studies the movement of freight and passengers at the individual, urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	585	Geog Resrch Dsgn & Proposal Wtg	Prepares students to undertake creative geographic research culminating in the generation of new knowledge. Serves as a foundation for the student in achieving the objective of a productive and successful degree. To accomplish this, instruction stresses a research framework, ethical practice, and the generation of an original research proposal. Specific learning objectives are: to produce an area of specialization statement, literature review, problem statement, description of methods and final proposal; to develop the skills needed to conceive and plan a research project; to communicate ideas effectively in written and oral form; to develop and articulate informed opinions about research designs; to learn about academic publishing format and process; and to understand and engage in ethical research practices.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student
GCU	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GCU	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	671	Intro to Geographic Teaching	Intensive course in geographic education, scientific method in research on geographic education, research trends, resources for teaching, best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	672	Phys Geography for Teachers	Transfer of matter and energy exhibited in the Earth's climate, hydrology, soils, biogeography, and landforms; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	673	Human Geography for Teachers	Analyzes cultural, economic, urban, historical, transportation, population, political, and development geography; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	674	Geog Techniques for Teachers	Introduces geographic techniques, including GPS, GIS, remote sensing, cartography, qualitative, and field methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	675	World Geography for Teachers	Systematic overview of geographic knowledge about different world regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	676	North Amer Geog for Teachers	Systematic overview of geographic knowledge about different North American regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	677	Geography Across Curriculum	Intensive course on intergrating reading, writing, and mathematics standards with geography content; selected case studies; best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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GDE	30	Basic Found English Lang Learn	Introduces a foundation of basic English language to international learners. Focuses on the structures of English, sentence parts and sentence formation, for basic conversations and basic writing skills related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	35	Basic Comm English Lang Learn	Builds on a foundation of basic English language for international learners. Further develops the structures of English needed in basic conversations and basic writing skills related to everyday English. Introduces learners to past forms.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	40	Basic Lang Skills Eng Lang Lrn	Refines and expands basic English language skills for international learners. Builds on reading, written and verbal skills to develop learners' language abilities in everyday English. Learners carry out conversations on a variety of personal topics.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	45	Basic Achieve English Lang Lrn	Further refines and consolidates basic English language skills for international learners. Emphasizes language skills in reading, writing, listening and speaking to expand learners' knowledge and language use in a wide variety of topics in home, family, friends, work, school, free time and more related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	50	Intermed Found Eng Lang Learn	Introduces a foundation of intermediate English language to international learners. Builds on the basic structures of English to refine learners' language abilities for everyday and academic English language skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	55	Intermed Comm Engl Lang Learn	Builds on a foundation of intermediate English language for international learners. Emphasizes and refines communication skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	60	Intermed Lang Skill Engl Learn	Refines and expands intermediate English language skills for international learners. Emphasizes and refines reading, written and verbal skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	65	Intermed Achieve Engl Lang Lrn	Further refines intermediate English language skills for international learners. Emphasizes and refines academic English language skills in reading, writing, listening and speaking.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	70	Acad Thinking Engl Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	75	Acad Analysis Engl Lang Learn	Develops advanced language skills and refines the critical thinking skills necessary in academic coursework. Learners build on prior learning to further develop their reading, writing, listening and speaking skills to successfully analyze and respond to academic topics and texts. Learners acquire advanced academic skills and vocabulary in order to be able to form opinions and arguments.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	80	Acad Persuasion Eng Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	86	Ugrd Acad Achieve Eng Lang Lrn	Designed for undergraduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic undergraduate program. Refines advanced academic skills introduced in prior language courses through collaboration, communication, compositions and response to course concepts.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		

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GDE	88	Grad Acad Achieve Eng Lang Lrn	Designed for graduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic graduate program. Learners draw from advanced, complex academic texts to review the literature and to compose evidenced-based writing and speaking assignments related to their fields of study. Expects learners to demonstrate an advanced command of the English language and advanced academic skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	96	English UG Adm & Achieve	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GDE	98	Engl Graduate Adm & Achievemnt	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students to graduate programs.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GER	101	Elementary German I	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in GER 101 if credit with C or better earned in GER 102, GER 110, GER 201, GER 202 or GER 210 OR Visiting University Student
GER	102	Elementary German II	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 101 with C or better OR German Placement score of 231-328; Credit is allowed for only GER 102 or GER 110 or GER 111 OR Visiting University Student
GER	110	Intensive German I	Students learn to read, listen, write and speak German. Develops ability to communicate in German using a variety of tools. Uses German to ask and answer questions; name and describe persons, things, places and events; deals with certain situations; narrates orally and in writing; writes letters and postcards; fills out forms; and comprehends some texts. Expands knowledge of the cultures of the German-speaking countries. Students contribute to the class discussions what they might already know.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Students may not enroll in GER 110 if credit with C or better earned in GER 101, GER 102, GER 201, GER 202 or GER 210
GER	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	201	Intermediate German I	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 102, 110, or 111 with C or better OR German Placement Test score of 329-443 OR Visiting University Student
GER	202	Intermediate German II	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 201 with C or better OR German Placement Test score of 444-547; Credit is allowed for only GER 202 or GER 210 OR Visiting University Student
GER	210	Intensive German II	Helps develop reading, writing, listening and speaking skills and strategies with activities both inside and outside of class. Guides student further into learning about the cultures of the German-speaking countries.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): GER 102 or 111 with B or better OR GER 110 with C or better OR German Placement Test score of 408-469; Credit is allowed for only GER 201 or GER 202 or GER 210
GER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	310	Adv German Grammar & Comp I	Intensive, contextualized advanced German grammar and intensive practice in writing, emphasizing covered style and grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	311	German Conversation	Expansion of idiom through oral practice dealing with contemporary articles, essays and stories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	312	Readings in German Culture	Provides strategies for building reading proficiency in German through longer cultural texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or GER 210 with C or better
GER	313	Adv German Grammar & Comp II	Intensive, contextualized advanced German grammar and intensive practice in writing, emphasizing covered style and grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 310 with C or better OR Visiting University Student
GER	315	Germanic Mythology	Religious and spiritual beliefs and practices of the ancient Germanic peoples as reflected in their culture, including the pantheon of their gods, as well as the reception of these beliefs through and including contemporary times.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 315 or 394 (Germanic Mythology)

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GER	319	Business German	Navigates the German business world in real-life situations. Apply for a job, be a trainee and develop a business project in German. Communicate effectively and with cultural awareness in a professional context. Organize and present clear, effective business communications and vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR Visiting University Student
GER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	416	German Civilization	From 1600 through 1945.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Pre-requisite: A 300-level German course
GER	421	German Lit Survey, 800-1800	From the beginning to Classicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GER 310 with C or better
GER	422	German Lit Survey, 1800-Today	From Romanticism to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; GER 310 with C or better OR Visiting University Student
GER	431	German Humor	Popular and literary texts (collections of jokes, pranks and comedies) in the print and visual media provide a basis of comparison for students to reflect critically on the function of humor in German culture from the sixteenth century until the present. Exposes the different types and functions of German humor and understands both the historical and the contemporary theoretical debate on the study of (German) humor. Taught almost exclusively in German, with reading and writing assignments done in the target language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Two 300-level GER courses with C or better; Credit is allowed for only GER 431 or GER 494 (German Humor and Comedy)
GER	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
GER	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
GER	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
GER	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
GER	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455

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GER	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)
GER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
GER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
GER	550	German for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking, or writing as in a traditional language course.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only GER 494 (German for Reading Knowledge), GER 598 (German for Reading Knowledge), or GER 550
GER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	202	Drones to Satellites	Seeing the Earth from above has a profound effect on how we view our planet. Introduces Earth observation using platforms like drones, airplanes and satellites. Covers how images and data of our Earth are acquired from above and how they can be processed and interpreted to understand our world. Students gain practical skills for generating information from images to better understand how human beings use and alter Earth's surface.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Credit is allowed for only GIS 202 or GIS 294 (Drones to Satellites: Observing Earth from Above)

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GIS	205	Geographic Info Science I	Introduces spatial thinking, a cross-disciplinary foundation for geographic information science (the science of dealing with spatial/geographical data; their manipulation, interpretation and use in problem solving); geospatial technologies (the specific technologies underpinning geographic information science); and spatial analysis (the science of solving spatial problems).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	
GIS	211	Geographic Info Science II	History and basic aspects of GIS including map and data file structure, conversions, and synthesis with a computerized environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	220	Mathematical Principles in GIS	Covers the basic math principles needed to excel in GIS and spatial analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better
GIS	222	Programming Principles GIS I	Basic principles of programming for GIS in python covering data processing, analysis, and application development.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 170, 210, 270, 271, or 272 with C or better OR Visiting University Student
GIS	270	Stats for Geography & Planning	Descriptive and inferential statistical methods for analysis of data in geographical sciences and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better OR Visiting University Student
GIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	311	Geographic Info Science III	GIS as a basis for microcomputer spatial analysis and synthesis. Includes digitizing, database organization, spatial retrieval, and graphics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 211 with C or better OR Visiting University Student
GIS	322	Programming Principles GIS II	Fundamental data structures and algorithms for the integration, management, processing and analysis of geographically referenced data.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better OR Data Science BS major; CSE 110, CSE 205, or GIS 222 with C or better OR Visiting University Student
GIS	341	Cartography&Georepresentation	Study and creation of maps. Fundamental mapping principles (projection, scale, generalization, symbolization) and computer-based cartographic production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	351	Air Photo Interpretation	Subset, remote sensing, includes photography, films, aerial geometry, image components, stereoscopy, photogrammetry, ground truthing; interpret physical, cultural, economic, intelligence information.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum 45 hours
GIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	412	Spatial Decision Support Sysms	Theoretical and technical requirements for implementing spatial decision support tools.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better; GIS 311 with C or better
GIS	431	Spatial Databases	Covers data modeling concepts, the relational data model for the storage and retrieval of spatial and nonspatial information. The data retrieval emphasizes the industry-standard query language SQL and Spatial Query Languages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 311; GIS 322
GIS	441	Geographics: Interact/Animated	Advanced cartography, stressing influence and application of the computer on geographic representation. Emphasizes creation of maps for the Internet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 222 with C or better
GIS	461	Spatial Optimization Fndmnts	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student

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GIS	462	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving, and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 211 with C or better; GIS 461 with C or better; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
GIS	470	Adv Stats Geography & Planning	Statistical techniques applied to the analysis of distributions and relationships. Introduces models and theory in geography.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 270 with C or better OR Visiting University Student
GIS	471	Spatial Stats Geog & Planning	Basics of spatial data analysis. Topics include point pattern analysis, spatial autocorrelation, spatial regression, and kriging.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): CDE 469, GIS 469, GIS 470, SOC 469, or GIS 494/CDE 498 (Multivariate Statistics for Social Sciences) with C or better OR Data Science BS major; DAT 301 or GIS 470 with C or better OR Visiting University Student
GIS	472	Spatial Regression Analysis	Students gain insight into the scope of spatial regression methods, apply them in an empirical setting, and properly interpret the results of spatial regression analysis.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 471; Credit is allowed for only GIS 472 or GPH 598 (Spatial Regression)
GIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
GIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GIS	501	GeoDesign in Practice	Covers the basic topics of GeoDesign in practice including data, analysis, geocoding, mapping and projected implementation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 601 and 602 (or PUP 576)
GIS	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
GIS	512	Spatial Decision Support	Designs and implements a spatial decision support system and analyzes and understands the theoretical underpinnings that form these systems.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 412 or GIS 512

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GIS	520	GIScience Issues and Debates	Examines the underlying theories, current issues and debates surrounding the development and foundation of GIScience as a discipline. Discusses the history of the development of the field, the fundamentals and applications of spatial concepts to problem solving, and explores the trajectories of the field with respect to emerging geospatial technologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	521	GIS Programming	In-depth look at programming within GIS. Focuses on programming and methodology, utilizing specific software, and basic scientific computing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	531	Spatial Databases	Advanced data modeling concepts, the relational data model for the storage and retrieval of spatial and non-spatial information. Data retrieval emphasizes the industry-standard query language SQL and spatial query languages. Covers research topics for graduate students.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 431 or GIS 531
GIS	561	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581
GIS	562	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 561; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	563	Local Statistical Modeling	Understands the processes that generate the data we observe in the real world. If these processes vary over space, we term this spatial non-stationarity and traditional global models are no longer applicable. A set of local spatial models has been developed to examine spatial non-stationarity and one of the most widely used of these is Geographically Weighted Regression (GWR) and its variants. Investigates GWR and the wider context of spatial non-stationarity. Topics include: setting the scene; introduction to GWR; discussion of context; further issues in GWR; software for GWR; workshop on GWR 4; model selection in GWR; inference in GWR; semi-parametric GWR and multiscale GWR (MGWR); software for multiscale GWR; inference for MGWR; multicollinearity and GWR; some myths about GWR; big models; an example of the 2016 U.S. presidential election. Examination is by project (60%) and two presentations (40%).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 563 or GIS 598 (Local Statistical Modeling)
GIS	571	Spatial Stats Geog & Planning	Instructs on a variety of descriptive and inferential spatial statistics. Covers the conceptual foundations of spatial statistics, computes spatial statistics using software, and applies spatial statistical testing to a variety of research problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed only for GIS 571 or GIS 591 (Spatial Statistics for Geography and Planning)
GIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		

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GIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	601	Intro to Geographic Info Sys	Introduces GIS theory and practice for professionals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	602	Intermediate GIS	Introduces visualization, spatial analysis and open source tools.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	603	Spatial Statistics/Modeling	Introduces spatial statistics and modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	604	Implm Corporate/Public Sectors	GIS use in the corporate and public sectors including proposal development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	605	GIS Project Plan & Impliment	Moving from project proposal to implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	606	GIS Project Presentation	Development of technical reports and presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	610	Programming GIS Environment	Programming fundamentals for desktop GIS and custom applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	630	GIS Technologies	Uses of GIS technology for data collection and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	640	GIS for Business	Uses of GIS in business practice including site suitability, demographic data and business analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	650	GIS for the Internet	Programming GIS for the Internet and mobile applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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GIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y		RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	135	Graphic Communications	Processes involved in design, asset generation, transmission, production and evaluation of visual content.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	210	Creative Thinking and Dsgn Viz	Fundamental methods, concepts and techniques of creative thinking, ideation and problem solving, including communication and societal influences. Examines drawing and design visualization, from sketching to data graphics.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	211	Intro to Video Game Art	2D and 3D art assets for video games. Areas covered: classic pixel art, seamless texturing and tiling, sprite animation, 3D virtual studio, box modeling.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better OR Visiting University Student
GIT	215	Introduction to Web Authoring	Website planning and evaluation using industry-standard languages.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Credit is allowed for only GIT 215 or GIT 310 OR Visiting University Student
GIT	230	Digital Illustration in Publis	Raster and vector illustration in publishing.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	250	Intro to Commercial Print	Provides an overview of current print technology, a basic understanding of the print process and current workflows.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology) BAS or Graphic Information Technology BS or Graphic Information Technology (User Experience) BS major OR Visiting University Student
GIT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	295	Intro to Technical Imaging	Explores imaging technologies utilized in industry. Covers basic imaging concepts, chip technologies, optics, motion analysis, high-speed video, thermal imaging, and science relating to light and latent imaging.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Undergraduate student; Credit is allowed for only GIT 295 or 294 (Introduction to Technical Imaging) OR Visiting University Student
GIT	303	Digital Publishing	Web and print publication design and production using industry-standard composition software, proofing, and output devices.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Internet and Web Development) BAS or Applied Science (Graphic Information Technology) BAS major OR Visiting University Student
GIT	310	Web Foundations	7.5-week course covers fundamental methods, concepts and techniques of semantic and validated Web development as well as aesthetic Web design. Includes Photoshop, HTML5 and CSS technologies.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology or Internet and Web Development) BAS major; minimum junior standing; Credit is allowed for only GIT 215 or GIT 310 or GIT 337 (or GIT 237)
GIT	312	3-D Computer Graphics Modeling	3-D modeling applications: modeling for video games, mapping techniques, texturing, box modeling, geometric representation, strategies and assemblies.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3	CS	Prerequisite(s): GIT 211 OR Visiting University Student
GIT	314	MM Dsgn, Plan and Stybd	The creative process of generating ideas, conceptualizing projects, planning, designing, story boarding, and presenting interactive multimedia products.	N		LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better; minimum junior standing OR Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student

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GIT	315	Digital Video Techniques	Covers video production, including planning, pre-production, production, post-production and online video technologies and how video is an integral part of the graphic information industry. Concentrates on commercial and client-driven video production.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology) BAS major or Applied Science (Internet and Web Development) BAS major or GIT 230 with C or better OR Visiting University Student
GIT	333	Printing Technology	Theory and application of sheet and web press technology for offset-lithography, flexography, screen process, and digital printing.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 250 OR Visiting University Student
GIT	334	Image Editing and Manipulation	Theory and application of advanced image editing and raster techniques for reproduction and dissemination.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student
GIT	335	Computer Systems Technology	Computer technology: hardware, software, storage, networking, Internet, telecommunications, and information systems. Requires independent research. Not for credit for BS Graphic Information Technology major.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Not for credit for the Graphic Information Technology BS degree OR Visiting University Student
GIT	337	Web Content Design	User-centered design principles for visual content on the World Wide Web with emphasis on content strategy, user experience, coding and interactivity.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 215; GIT 230 with C or better OR Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major; Credit is allowed for only GIT 310 or GIT 337 OR Visiting University Student
GIT	340	InfoDesign/Usability	Design and technology solutions for increasing Website usability and methods of organizing information to improve the user experience.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing OR Visiting University Student
GIT	384	Commercial Photography	Digital image capture, and output in a commercial studio emphasizing publishing workflow.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student
GIT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	402	New Media Internet Tech	Project-based exploration of new media Internet technologies from a graphic technology prospective. Emphasizes how, why, and when new media can be used to enhance a Web site and the user's experience.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GIT 402 or GIT 502
GIT	411	Computer Animation	3-D computer animation methods: rigging for video games, principles of animation, loops, skinning, blending, advanced modeling and motion.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 312 OR Visiting University Student
GIT	413	Prof Port Dsgn and Pres	Digital media portfolio design and production to include planning, audience analysis, content selection, authoring tools and formats, production, copyright considerations, marketing and delivery. This should be taken in the last semester of the program.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Sci (Graphic Info Tech) BAS, Graphic Info Tech BS, Graphic Info Tech (User Exp) BS major; GIT 303; senior standing OR Applied Sci (Internet & Web Develop) BAS major; Pre- or corequisite(s): GIT 480 OR Visiting University Student
GIT	414	Web Site Design/Internet/Web	Design, authoring, standards, protocols, tools and techniques for development for different Web-based technologies.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	415	AdvDigVideoTechniques	Advanced video creation and editing techniques including motion graphics, green screen technology, audio sweetening, crew and commercial production. Course culminates with a completed video production that is commercial and professional in nature.	N	LEL	N	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 315
GIT	417	Adv Web Markup and Scripting	Industry-standard programming languages and techniques to add user interactivity to graphic information Web sites and Web applications.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	418	Multimedia Author/Script/Prod	Extended application of industry-standard scripting languages and techniques to add user interactivity to graphic information websites and web applications.	N	LEL	N	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 417 OR Visiting University Student

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GIT	432	Graphic Industry Business Prac	Business practices related to the graphics industry; business models, cost and rate analysis, marketing and management approaches.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): minimum senior standing; Credit is allowed for only GIT 432 or GIT 532 or GIT 598 (Graphic Industry Business Practices) OR Visiting University Student
GIT	435	Website and E-Commerce Strat	E-Commerce site management, marketing analytics and e-commerce business models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): GIT 414; Credit is allowed for only GIT 435 or GIT 598 (Website & E-Commerce Strategy) OR Visiting University Student
GIT	437	Color Reproduction Systems	Scientific analysis for the engineering of color reproduction systems and color models used in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): GIT 334; Credit is allowed for only GIT 437 or GIT 573
GIT	450	Digital Workflow/Graphic Indus	Digital production system analysis for content creation, automation output of graphic information to print and Web, including networking and job tracking.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): GIT 215; GIT 303 OR Applied Science (Internet & Web Development) BAS major; Credit is allowed for only GIT 450 or GIT 598 (Digital Workflow in Graphic Industries) OR Visiting University Student
GIT	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): minimum senior standing OR Visiting University Student
GIT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12			
GIT	490	Adv Commercial Photography	Studio-based class focusing on set design, advanced photographic techniques, raw workflow, marketing, business, and digital rights management.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): GIT 384 OR Visiting University Student
GIT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6			Prerequisite(s): Barrett Honors student
GIT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6	L		Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GIT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4			
GIT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-3			
GIT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12			Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	502	New Media Int Tech	Project-based exploration of new media Internet technologies from a graphic information technology perspective. Emphasizes how, why and when new media can be used to enhance a Web site and the user's experience while maintaining branding cohesively across all technologies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 402 or GIT 502
GIT	515	WebDesignTech	Standards, tools and techniques for creating websites, with emphasis on designing for multiple devices and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	519	AdvScriptWeb	Uses industry-standard markup and scripting languages to develop interactive websites and applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	532	Graphic Indus Business Prac	Business practices related to the graphics industry; business models, cost analysis, marketing and management approaches.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 432 or GIT 532 or GIT 598 (Graphic Industry Business Practices)
GIT	537	Cross Media Production	Directed group study of selected current issues relating to cross-media production for the graphic information industries. Requires graduate group leadership.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): Graphic Information Technology MS student or Technology (Graphic Information Technology) MSTech student
GIT	538	Personnel Dev/Graphic Industry	Employee training and development specific to production and management in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): graduate student in Technology (Graphic Info Tech)
GIT	540	Cross-Media Design Solutions	Universal design theory, creative problem solving, and case study applications for print, Web, and new media products of the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3			Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student

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GIT	542	Usability/User Experience	Design and technology solutions focusing on how information is organized graphically to communicate and how website usability is employed to improve human interaction with inline information.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student
GIT	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
GIT	573	Color Metrology	In-depth study and analysis of systems used to manage color reproduction in the graphic arts industry and information technology.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 437 or GIT 573
GIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	501	Global Thinking in Education	An online course introducing students to the analyses of worldwide factors that affect a range of issues in education including access, quality and sustainability across countries and education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	502	Inquiry in Global Education	Students learn to locate; interpret and critically analyze global education research literature (including comparative, qualitative, and quantitative approaches); develop problem statements and conduct a literature review.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	503	Eval Glob Edu Policies, Progs	Examines principles, methods and practices of evaluating education programs and policies in international settings. Focuses on types of evaluation, evaluation design, data collection and monitoring, and utilization of findings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	504	Issues in Global Edu Lit	Reviews, identifies and synthesizes the empirical research literature. Students write a conceptual literature review in an area of interest of global significance. review, identify and synthesize the empirical research literature and will write a conceptual literature review in an area of interest of global significance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	505	Evidence in Global Edu Inquiry	Covers the basic research methods associated with global education inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Global Education MED student; GLE 501; GLE 502; GLE 503
GLE	506	Applied Inquiry in Global Edu	Guides students in the development of a proposal for an applied inquiry study to explore and analyze an education problem in the student's interest in an area of global import. Such issues may include but are not limited to education access, quality and sustainability.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Global Education MED student; GLE 501; GLE 502; GLE 503
GLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): Global Education MED student; GLE 501; GLE 502; GLE 503

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GLE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	101	Intro to Geology I (Physical)	Basic principles of geology, geochemistry, and geophysics. Rocks, minerals, weathering, earthquakes, mountain building, volcanoes, water, and glaciers. Students must complete both GLG 101 and GLG 103 to receive an SQ (general studies).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	
GLG	102	Intro Geology II (Historical)	Basic principles of applied geology and the use of these principles in the interpretation of geologic history. Both GLG 102 and 104 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SG & H	
GLG	103	Introduction to Geology I-Lab	3 hours lab, some field trips. Both GLG 101 and 103 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Credit is allowed for only ENV 103 or GLG 103 OR Visiting University Student
GLG	104	Introduction to Geology II-Lab	Lab techniques involving map interpretation, cross sections, and fossils. Both GLG 102 and 104 must be taken to secure SG general Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SG	Corequisite(s): GLG 102 OR Visiting University Student
GLG	108	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice; rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
GLG	110	Dangerous World	Geological studies as they apply to interactions between humans and Earth. Includes geological processes and hazards, resources, and global change. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ & G	
GLG	111	Dangerous World Laboratory	Basic geological processes and concepts. Emphasizes geology-related environmental problems concerning Arizona. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	
GLG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	301	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student
GLG	304	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102, GLG 110, GPH 111, SES 121, or minimum junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373
GLG	305	Dynamic Earth	Focuses on the 4.6-billion year physical and geochemical evolution of Earth, with emphasis on planetary interior and surface processes through time that have resulted in current concentrations of fundamental chemical elements necessary to sustain modern civilization. Specific topics include: (1) elemental abundances and differentiation of the early solar system and Earth; (2) formation of Earth's compositional and rheologic layers; (3) interactions among planetary spheres with focus on biogeochemical cycles; (4) multi-scale tectonics (plate tectonics, continental deformation, igneous and earthquake processes, and mountain building). Provides an essential scientific context for understanding Earth system processes fundamental to environmental science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100 or CHM 101 or higher or PHY 101 or higher with C or better, or both SES 220 and SES 225 with C or better; GLG 101 or SES 121 with C or better; MAT 170, 210, or 251 with C or better

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GLG	310	Structural Geology	Geologic structures and the mechanical processes involved in their formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
GLG	321	Mineralogy	Crystal chemistry, crystallography, mineral identification, origin and occurrence of minerals, systematic mineralogy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): CHM 113 (or both CHM 111 and 117 or 114) with C or better; MAT 170, 210, 265 or 270 with C or better
GLG	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
GLG	327	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone-- in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Preq(s) w/ C or bttter: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Creditfor only GLG 327 or SOS 374 OR Visiting University Student
GLG	340	Geohazards of Mediterranean	Covers geological studies as they apply to interactions between humans and Earth, focusing on geological hazards. Hazards present risks to life, property, global commerce and infrastructure. Such hazards are now more likely than ever to cause large death tolls and impact the global economy, due to increasing population density and the emergence of a global marketplace. Italy is a country that is exposed to a wide range of geologic hazards, such as volcanic eruptions, earthquakes and landslides. Because of its natural geologic setting and long history of scientific leadership, Italy has one of the world's most well-established scientific communities to study and mitigate geologic hazards. These issues are addressed and discussed from both a scientific and human perspective, with primary focus placed on Italian case studies and the role of Italian institutions in hazard science.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 340 or GLG 394 (Geologic Hazards of the Mediterranean)
GLG	362	Geomorphology	Land forms and processes that create and modify them. Lab and field study of physiographic features.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 266 or 271 with C or better OR Visiting University Student
GLG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	404	Fundamentals Planetary Geology	Surveys planetary topics, including impacts, tectonics, and volcanism on planetary objects, and use of spacecraft data, including geological mapping.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101, GLG 102, SES 121, or SES 122 with C or better OR Visiting University Student
GLG	406	Geology of Mars	Geological evolution of Mars through analyses of spacecraft data, theoretical modeling, and study of terrestrial analogs; emphasizes current work. Possible field trips to examine Arizona geology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	410	Computers in Geology	Geological computer skills including data processing, visualization, presentation, numerical analysis, software and hardware applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): GLG 101 or SES 121 with C or better
GLG	418	Geophysics	Solid earth geophysics; geomagnetism, gravity, seismology, heat flow. Emphasizes crust and upper mantle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 272 or 267 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 272 or 267 with C or better; PHY 151 with C or better OR Visiting University Student
GLG	419	Geodynamics	Emphasizes application of continuum principles to geological problems, including lithospheric stresses, heat transfer, fluid mechanics, and rock rheology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite(s): MAT 267 or MAT 272 with C or better; PHY 131 and 132 (or PHY 151) with C or better

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GLG	420	Volcanology	Distribution of past and present volcanism, types of volcanic activity, mechanism of eruption, form and structure of volcanoes, and geochemistry of volcanic activity.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite: Engineering, Math or Science major; Minimum Junior standing
GLG	422	Planetary Volcanology	Studies the effects of planetary environments and magma compositions on styles of volcanism and the nature of volcanic products on the terrestrial planets and outer planet satellites. Overview of volcanism on specific planetary objects, analysis of spacecraft image data, basic mathematical volcanic modeling, and reviews of key papers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 420 with C or better
GLG	424	Petrology	Origin of igneous and metamorphic rocks. Optical mineralogy, hand specimen identification, and thin-section analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 321 with C or better OR Visiting University Student
GLG	430	Paleontology	Introduces concepts and analytical techniques in biogeology, paleobiology, paleoecology, and paleoenvironmental reconstruction from the fossil record.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 12 with C or better; GLG 104 or SES 124 OR Visiting University Student
GLG	435	Sedimentology and Stratigraphy	Examines the fundamental principles and tools utilized in the study of sedimentology and stratigraphy. Focuses on the origin, transportation and deposition of sediment, and the processes that lead to the formation of sedimentary textures, structures and stratal packages. Emphasizes description, analysis and interpretation of lateral and vertical changes in sedimentary strata, both in the field and in laboratory exercises, as it pertains to spatial and temporal variability in depositional mechanisms and environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 122 with C or better; Pre- or corequisite(s): GLG 321 with C or better if completed OR Visiting University Student
GLG	441	Ore Deposits	Origin, occurrence, structure, and mineralogy of ore deposits.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; GLG 310 or 321 with C or better OR Visiting University Student
GLG	451	Field Geology I	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GLG 310 with C or better; Pre- or corequisite: GLG 321 OR Visiting University Student
GLG	452	Field Geology II	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GLG 310 with C or better; GLG 321 with C or better; GLG 451 with C or better OR Visiting University Student
GLG	455	Advanced Field Geology	Geologic mapping in igneous, sedimentary, and metamorphic terrains of the Basin and Range province of Arizona.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): GLG 310 with C or better; Pre- or corequisite(s): GLG 451 with C or better if completed OR Visiting University Student
GLG	460	Astrobiology	Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 112, BIO 182, BIO 282, GLG 102, or SES 122 with C or better; one 300-level course in AST, BIO, CHM, GLG, MIC, PHY, or SES with C or better OR Visiting University Student
GLG	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and minerals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Credit is allowed for only GLG 461 or MIC 461
GLG	464	Solving Environmental Problems	Capstone course intended primarily for seniors in the Earth and Environmental Studies degree program. Hybrid self-study design project workshop guided by faculty, in which student teams research and develop plans for a viable solution to a real environmental problem in the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Earth and Environmental Studies BA major; GLG 305 with C or better; GLG 327 with C or better; senior standing
GLG	470	Hydrogeology	Geology of groundwater occurrence, aquifer and well hydraulics, water chemistry and quality, contaminant transport, remediation. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	471	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student

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GLG	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)
GLG	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
GLG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
GLG	485	Meteorites and Cosmochemistry	Chemistry of meteorites and their relationship to the origin of the Earth, solar system, and universe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only GLG 485 or CHM 485
GLG	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): CHM 302, GLG 321, or GLG 481 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CHM 489 or GLG 489 OR Visiting University Student
GLG	490	Topics in Geology	Special topics in a range of fields in geology.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
GLG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
GLG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	495	Undergraduate Thesis	Guided research culminating in the completion and presentation of an undergraduate thesis based on supervised research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 546 or GLG 598 (Advanced Watershed Hydrology) or CEE 546
GLG	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
GLG	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)

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GLG	581	Isotope Geochemistry	Geochemistry and cosmochemistry of stable and radioactive isotopes; geochronology; isotope equilibria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GPE	10	Verbal Skills Scholars	Helps international graduate students (prospective ITAs) as well as other graduate students or visiting scholars at ASU improve their spoken English (pronunciation and fluency). Helps familiarize students with American classroom culture and helps them become effective classroom teachers. Each student receives an individual pronunciation assessment to help him or her focus on areas needing improvement. There is direct instruction and practice of pronunciation (e.g., sound, stress, rhythm, intonation). By participating in and leading class discussions, by working in small groups or pairs and by preparing for videotaped presentations, students improve English fluency.	N	LEC	Y	YGB	Office of the University Provost	Global Launch	3		
GPE	11	IS Teacher Training	Familiarizes international graduate students (prospective ITAs) at ASU with American classroom culture and helps them become effective classroom teachers. Exposes various methods of teaching commonly used in the American university classroom.	N	LEL	N	YGB	Office of the University Provost	Global Launch	3		

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GPE	30	Spec Prog Language Foundations	Designed for noncredit, special program international students. Helps students develop the skills needed to write, read and communicate effectively in the English language in professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	31	Special Prog Ext Project Work	Designed for special program international students. Helps students effectively apply the four language skills--reading, writing, speaking and listening--in real-world, professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	32	SP: Field-Specific Engl Skills	Designed for special program international students. Takes field-specific English language and develops the reading, writing and communication skills in order to successfully navigate professionally within a global context.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	88	Engl Uni Success:Wrt Rdg Rsrch	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands literacy and critical thinking skills needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	89	Engl Uni Success:Acad Thinking	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands critical thinking skills and verbal and written expression needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	90	Business Presentation Skills	Develops ability to verbally persuade, inform and motivate an audience. Covers integral key competencies such as: identifying audience, researching and organizing information, preparing and delivering effective visuals, and communicating concisely in English. Coupled with activities which include impromptu business-themed presentations, evaluations by the professor and feedback from peers.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	91	Academic & Business Writing	Develops the skills needed to write clearly and effectively, in both academic and business settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with impactful content.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	92	Critical Thinking Case Studies	Teaches international students reading and critical thinking strategies required for a master's-level program. Teaches how to read and understand dense textbooks, articles and magazines in a timely fashion and identify the important information.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	93	Business & Cross-Cultural Comm	Improves international students' ability to compare and contrast aspects of American business culture with other cultures in order to understand similarities and differences.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	94	Bus Listening & Conversation	Improves the student's ability to effectively communicate orally at a master's level. Covers speaking and listening strategies and skills necessary to participate in discussions related to business topics. Students learn to control the input they receive and produce coherent and appropriate responses.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	95	Academic and Technical Writing	This non-credit course helps graduate-bound international students develop the English skills needed to write clearly and effectively, in both academic and technical settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with relevant and thoughtful content.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	96	Graduate Presentation & Comm	Designed for graduate-bound international students, this non-credit course helps students develop the skills needed to communicate in English effectively in a variety of graduate academic situations.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	97	Graduate Reading Skills	Utilizing topics from students' chosen field of study, this non-credit course is designed to give graduate-bound international students a thorough grounding in strategies and techniques for efficient and effective reading in English of complex, dense texts expected of graduate degrees. Graduate students build foundations for critically analyzing texts and applying them to relevant contexts, while amassing a graduate-level English lexis.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPH	111	Intro to Physical Geography	Spatial and functional relationships among climates, landforms, soils, water, and plants. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	112	Intro to Phys Geography Lab	Includes some local or virtual field trips. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	Pre- or corequisite(s): GPH 111 OR Visiting University Student

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GPH	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Prerequisite(s): Freshman standing; maximum 25 hours OR Visiting University Student
GPH	210	Society and Environment	Examines the interaction among social processes, key environmental issues, and nature's role as a resource at global and regional scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Credit is allowed for only GPH 210 or SOS 210
GPH	211	Landform Processes	Laboratory science class on earth-surface processes, with exercises emphasizing how erosion, transportation, and deposition modifies landforms.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SQ	
GPH	212	Introduction to Meteorology	Fundamentals of weather and climate, including basic atmospheric processes and elements. Students whose curricula require a lab course must also register for GPH 214. Both GPH 212 and 214 must be taken to secure SQ General Studies credit	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	213	Climate and Weather	Fundamentals of meteorological/climatological analysis, including terminology and symbology. Recommended for meteorology/climatology program students. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SG	
GPH	214	Intro to Meteorology Lab	Introduces basic meteorological/climatological data and measurements. Suggested concurrent enrollment in GPH 212. Both GPH 212 and 214 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	
GPH	215	Climate and Weather Laboratory	Fundamentals of meteorological/climatological map analysis and interpretation. Recommended for meteorology/climatology program students. May be taken concurrently with GPH 213. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SG	
GPH	267	Extreme Weather	Introductory survey of extreme weather and climate processes and the often disastrous consequences at the intersection of human operations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GPH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	314	Global Change	Response of Earth's natural systems (atmosphere, hydrosphere, lithosphere, biosphere) to past environmental change, and effects of potential future changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GPH	381	Geography of Natural Resources	Nature and distribution of natural resources and the problems and principles associated with their use.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	
GPH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	405	Energy and Environment	Sources, regulatory and technical controls, distribution, and consequences of the supply and human use of energy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GPH 405 or GPH 505
GPH	409	Synoptic Meteorology I	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): PHY 121 or 150
GPH	410	Synoptic Meteorology II	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): GPH 409 with C or better
GPH	412	Physical Meteorology	Physical processes in the earth-atmosphere system on regional and global scales; concepts and analysis of energy, momentum, and mass balances.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 111; MAT 270; PHY 121/122 with C or better; Credit is allowed for only GPH 412 or GPH 591 (Physical Meteorology)
GPH	413	Meteorologic Instrmnt/Measure	Design and operation of ground-base and aerological weather measurement systems. Collection, reduction, storage, retrieval, and analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 213 with C or better or Visiting University Student
GPH	414	Climate Change	Surveys three climate research areas: paleoclimatology, theories (e.g., greenhouse warming), numerical modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Prerequisite(s): GPH 111 or 213 or 314 with C or better
GPH	418	Landforms of the Western US	Studies landforms and geomorphic processes in the western United States, including lecture, topographical maps, aerial photographs, satellite imagery, and field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GPH	422	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
GPH	433	Alpine and Arctic Environments	Regional study of advantages and limitations of the natural environment upon present and future problems involving resource distribution, human activities, and regional and interregional adjustments.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Credit is allowed for only GPH 433 or 598 (Alpine & Arctic Environments)

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GPH	474	Dynamic Meteorology I	Large-scale atmospheric motion, kinematics, Newton's laws, wind equation, baroclinics, vorticity, and the midlatitude depression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
GPH	475	Dynamic Meteorology II	Topics in climate dynamics. General circulation, numerical modeling, teleconnection phenomena, and surface-atmosphere interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 474 with C or better
GPH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GPH	491	Geographic Field Methods	Field techniques, including use of aerial photos, large-scale maps, and fractional code system of mapping; urban and rural field analysis to be done off campus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GPH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GPH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GPH	511	Fluvial Processes	Geographical aspects of processes of river erosion, transportation, sedimentation; emphasizing spatial characteristics of forces, resistance, landforms, sediment; includes computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	513	Meteorologic Instrmnt/Measur	Design and operation of ground-based and aerological weather measurement systems. Collection, reduction, storage, retrieval and analysis of data. Final project requires designing a field research measurement program for a hypothetical research question.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 413 or GPH 513 or GPH 598 (Meteorological Instrmntn M)
GPH	563	Urban Climates	Explores the urban climate system and its relationship with the built infrastructure of cities, including the causes, consequences and mitigation options for urban heat islands. Topics include the urban energy balance; materials in the urban environment; waste heat from energy consumption in cities; scales of urban-influenced climate modification; and implications for human comfort/health, air quality and energy consumption. Intended for graduate students in geographical sciences, urban planning, design, engineering, and related disciplines interested in learning about the urban climate system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 413 or GPH 598 (Urban Climates) or GPH 598 (Urban Heat Island)
GPH	569	Digital Analysis Remote Data	Focuses on the digital image processing of remotely sensed data for earth resource analysis and applications. Provides the skills and knowledge to apply digital remote sensing techniques for biophysical and environmental planning and problems. Through laboratory work, students have opportunities to practice concepts and techniques learned in the lecture part. Requires a reasonable background in college algebra and basic statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only GPH 394 (Digital Analysis of Remotely Sensed Data), 569 or 598 (Digital Analysis of Remotely Sensed Data)
GPH	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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GPH	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	596	Advanced Spatial Statistics	Multivariate and advanced statistical techniques including Box-Jenkins modeling and spectral analysis. Requires project papers and presentations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	101	Designing Life	Helps students develop strategies to successfully navigate their education experience. Focuses on critical and reflective thinking.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		

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GRA	111	Graphic Design History I	Surveys development of visual communication from its origins to the 20th century. Investigates significant technological, industrial, and social influences.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
GRA	112	Graphic Design History II	Surveys contemporary and 20th-century graphic design. Investigates relationships among graphic design and related disciplines, technological, industrial, and social influences.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 111 with C or better
GRA	121	Principles Graphic Design I	Graphic design as a language and process for creative thinking and realization.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Graphic Design major; Corequisite(s): GRA 111 OR Visiting University Student
GRA	122	Principles Graphic Design II	Continued exploration of graphic design as a language and process for creative thinking and realization.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 121 with C or better; Environmental Design or Graphic Design major. Corequisite(s): GRA 112
GRA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	220	Design Drawing I	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for graphic design thinking.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	221	Letterform	Drawing of letterforms with focus on proportion and structure. Introduces letterform nomenclature and classifications. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	222	Visual Communication I	Theoretical and applied studies in shape, drawing, and color. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	223	Typography	Theoretical exercises in spatial and textural qualities of type. Problems in tension, activation, and balance. Exercises in simple typographical applications. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 220 with C or better; GRA 221 with C or better OR Visiting University Student
GRA	224	Visual Communication II	Transition from theoretical to applied problems. Emphasizes refinement of visual skills. 6 hours a week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 222 with C or better; GRA 222 with C or better OR Visiting University Student
GRA	225	Comm/Interaction Design Theory	Theory related to the design of communication artifacts and interaction within various media environments.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	321	Technology for Design I	Explores the process of technology in design. Projects interface with GRA 361.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design student; Corequisite(s): GRA 361 OR Visiting University Student
GRA	322	Technology for Design II	Emphasizes advanced technology in design problems. Projects interface with GRA 362.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 321 with C or better; Corequisite(s): GRA 362
GRA	345	Design Rhetoric	Develops critical thinking and expression of ideas in concise and persuasive written and spoken form.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Architectural Studies, Design Studies, Digital Culture (Design), Environmental Design, Graphic Design, Industrial Design, Interior Design, or Landscape Architecture major, or Design Studies minor; ENG 102, 105, or 108 with C or better OR Visiting University Student
GRA	361	Visual Communication III	Explores methodologies of strategic communication, development of visual systems, and information design ideation processes leading to applied projects in print and digital media.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 223 & 224 with C or better; Co-requisite: GRA 321 OR Visiting University Student
GRA	362	Visual Communication IV	Comprehensive studio projects with emphasis on production processes leading to multidisciplinary applied projects in print, 3-D space, and digital media.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 361 with C or better; Co-requisite: GRA 322
GRA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	401	Creative Environment	Explores and investigates theories of the psychology of space, psychology of people in space, and the psychology of objects as it pertains to creativity and the creative environment.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	421	Exhibit Design	Familiarization with the processes associated with the design of exhibits, especially visual communication in 3-D.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student

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GRA	422	Motion Graphics/Intracn Design	Discusses and explores theory related to the design of motion graphics and interaction through lectures and studio projects.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 322 with C or better OR Visiting University Student
GRA	423	Advanced Interaction Design	Advanced discussion and exploration of theory related to the design of interaction.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: GRA 422
GRA	424	Advanced Media	Advanced exploration of digital media for communication.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 422 with C or better
GRA	440	Finding Purpose	Career orientation in the creative professions, including value clarification, decision making, lifestyle planning, goal setting, and expression of individual talents.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	461	Visual Communication V	Comprehensive studio projects with emphasis on design processes, including research, writing, critical thinking, practice, presentation, and analysis.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student
GRA	462	Visual Communication VI	Comprehensive studio projects pursued in cooperation with a public organization or private enterprise. All projects culminate in an exhibit.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 461 with C or better OR Visiting University Student
GRA	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
GRA	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
GRA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N		PRA	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Graphic Design major; GRA 362 with C or better
GRA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
GRA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GRA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
GRA	501	Creative Envir & Collab Leader	Explores and investigates creativity and group collaboration leadership as it applies to the creative process.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): graduate Herberger Institute for Design and the Arts major
GRA	521	Adv Vis Com Des Studio I	Students translate data, stories and references that they collect in their research into masterful visual narratives. This studio is an inquisitive environment for exploring ways to frame information and weave stories with graphic design. Students acquire new knowledge as individuals and as a group. Emphasizes studio-based research, conceptual development and articulation of process, voice and a high level of design execution.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Visual Communication Design major. Credit is allowed for only GRA 522 or GRA 590 (Advanced Visual Communication Design Studio I)
GRA	522	Adv Vis Com Des Studio II	Encourages students to develop a framework for understanding the role of design systems, tools and objects as cultural artifacts and their reflection on social diversity. In particular, students focus on the cultural experience of collaborative consumption as it is fostered through visual communication design.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 521. Credit is allowed for only GRA 522 or GRA 590 (Advanced Visual Communication Design Studio II)
GRA	526	Visiting Designers	Series of workshops (three per semester) in which students work closely with professionals and scholars in design and related disciplines.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	561	Methods in Visual Comm I	Introduces methodology in visual communication.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	562	Methods in Visual Comm II	Advanced theories and methodologies in visual communication. Emphasizes visual search as the synthesis of theory and practice.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 561 with C or better
GRA	563	Thesis Document Design	Emphasizes the construction of the final thesis document as a visual communication object and/or medium.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student
GRA	581	Internship in Teaching Design	Develop assignments, conduct critiques, structure dialogue, make presentations, and assist in the instruction of studio and lecture courses.	N		STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student

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GRA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	621	Adv Vis Com Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to work together to identify new design opportunities. For approximately one week during the semester, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 522
GRA	622	Adv Vis Com Des Studio IV	As a culmination of study at the master level, the student is responsible for the development of an individually determined, semester-long project in response to defined objectives, periodic commentary by committee, and formal review. Students meet regularly with a faculty member to discuss assignments. Final faculty review and project book containing a written as well as graphic theoretical component are the forms of final presentation for this contribution to the field of visual communication design.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 621
GRD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Graduate College	Graduate College	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	N	LEC	Y	Z1	Graduate College	Graduate College	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRK	101	Elementary Ancient Greek	The beginnings of the ancient Greek language, the language of Homer, Sophocles, Plato and the New Testament. Grammar and vocabulary, with an emphasis on reading ability. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
GRK	140	Gr&Lat Roots Biosctfc Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
GRK	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142

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GRK	201	Intermediate Ancient Greek	Ancient Greek syntax and grammar, equipping the student to read the foundational texts of Greco-Roman antiquity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): GRK 101 with C or better
GRK	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
GRK	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	301	Ancient Greek Literature I	Readings in ancient Greek prose; advanced grammar. May be repeated for credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better OR Visiting University Student
GRK	302	Ancient Greek Literature II	Readings in ancient Greek poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better
GRK	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
GRK	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
GRK	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
GRK	351	Tales of Troy	Provides an in-depth exploration of the ancient Greek archaic primary source material, including literary, art historical and archaeological sources. Uses stories about the Trojan War as a theme for the course, but does not limit exploration of the literature, art, history and culture of archaic Greece.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 351 or GRK 394 (Tales of Troy) or LAT 394 (Tales of Troy) or SLC 351 or SLC 394 (Tales of Troy) OR Visiting University Student
GRK	352	Rise & Fall of Ancient Athens	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the end of the Greco-Persian wars in 479 BCE through the rise and decline of Athens (including the Peloponnesian War with Sparta) to the final defeat of the Greek cities by Philip of Macedon in 338 BCE. This holistic study addresses not only the history of this period but also its literature, art and philosophy, with an emphasis on how these phenomena relate to one another. This period advanced to the state that was regarded by later civilizations as their peak, and which inspired Rome and Europe in the Renaissance. Athens, as the cultural center of Greece at this time, boasted the tragedies of Aeschylus, Sophocles, and Euripides, the comedies of Aristophanes, the history of Thucydides, the philosophy of Plato, and the artistic achievement of the Parthenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 352 or GRK 394 (Glory that was Greece) or LAT 394 (Glory that was Greece) or SLC 352 or SLC 394 (Glory that was Greece) OR Visiting University Student
GRK	353	Alexander and His Empires	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the ascent of Alexander the Great to the Macedonian throne in 338-336 BCE, through the existence of the kingdoms that followed his conquests, until their final subjugation by the Roman Empire in 31 BCE. This holistic study addresses not only the history of this period, but also its literature, art, religion, philosophy and science, with an emphasis on how these phenomena relate to one another. This was a period of massive economic and military expansion (including colonization), accompanied by social dislocation and cultural and scientific innovation. In these respects, this period has much to teach us today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 353 or GRK 394 (Alexander and His Empires) or SLC 353 or SLC 394 (Alexander and His Empires) OR Visiting University Student
GRK	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)

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GRK	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
GRK	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
GRK	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GRK	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GRK	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
GSC	501	War, Conflict and Security	Explores the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur. Introduces the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of the historical background of war and conflict, and some of the classic philosophical and military-strategic theories and conceptions of war. Introduces the institutional framework, the Westphalian state-based system of modern international law and relations, within which much of the theory and practice of modern conflict and war has developed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	502	Security Studies	Continues the exploration of the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur; the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of several fundamental themes that run through the history of war and strategy, and discusses the increasing importance of nonmilitary "soft power" in managing conflict situations. Also introduces the importance of regional knowledge in conflict as a critical operational competence (using the Russian invasion of Crimea and Ukraine as a case study), as well as the broader challenges of civilizational conflict and the importance of identity and narrative in modern conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	503	Future of War	Provides an overview of key issues, themes and ideas associated with the future of war. Contextualizes this discussion with a reflection on the impact of 9/11, especially within the U.S. Engages a number of core concepts, including the meaning, nature and experience of war including theories that violence is in decline. Also considers the changing impact of new wars on civilians, shifts in current and future technology and future scenarios including questions of climate change, global demographics and potential major power conflicts. Links the ideas, theories and understandings of the future of war with specific cases and concrete examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	504	Understanding Conflict and War	Provides a critical overview of different definitions and meanings of war and armed conflict. Engages key theories used to understand conflict including realism, neorealism, liberalism and constructivism. Considers core issues in the field, linking empirical studies with explanations for what drives, sustains and resolves conflict including reviewing the fact that democratic states tend not to go to war with each other (the democratic peace); the structure and logic of arms races; escalation and alliance; and core ideas regarding peace, conflict management and conflict resolution. Many of the issues and theories reviewed in this class are linked with case studies and concrete examples.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	505	Law of War	Provides an overview of key elements of the law of war, also known as international humanitarian law (IHL) and the law of armed conflict (LOAC). Engages basic questions of international law, reviewing its history, sources and structure. Covers jus ad Bellum, the rules governing how states legally go to war as well as jus in bello, the established ideas regarding how to manage actions during armed conflict. Covers key principles within the law of war, including distinction, proportionality and necessity as well as reviewing the differences between international and noninternational armed conflicts and other key ideas. Reviews the systems through which the law of war is enforced and also considers basic theoretical and practical issues regarding compliance. In general, links the ideas, practices, rules and understandings of the law of war with specific cases and concrete examples.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	506	U.S. Politics of Security	Builds a foundational understanding of the complex system of formal and informal actors and structural forces that shape U.S. security policy. Starts with both theoretical and case study examinations of the role domestic politics plays in the production of policy decisions. Analyzes critical institutional actors and relationships between actors, including: the President and Congress, the National Security Council and interagency, and the civilian-military relationship. Finally, investigates key structural forces placed on the policy-making process by the American society, and the relationship between policymakers and the public.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	507	Global Politics of Security	Offers several approaches to understanding the global politics of security, including: the structure of international and multinational security institutions and actors including nongovernmental organizations (NGOs), the United Nations' Security Council, peacekeeping missions, regional organizations (NATO, EU, Inter-American System, ASEAN) and others. Also considers the roles of private military and intelligence contractors and corporations working on issues of direct and indirect relation to security issues. Through specific case studies and examples, reviews the operation of these bodies and their complex relationships.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	508	Comparative Studies of Conflict	Provides a critical overview of key theories on the causes, justifications and structures of political conflict and the use of violence. Begins by outlining core issues within the problem of social order, that is, how to think about managing governance and power. Reviews the idea of "collective action" and its link with force and violence, ideas that are contrasted with nonviolence as a political strategy. Then considers civil wars and interstate wars, comparing these forms of organized violence, as well as the current challenges of armed nonstate actors (within an international system premised on states) and an overview of the meaning of peace. Links the issues and theories reviewed in this class with case studies and concrete examples as a means of linking key ideas with their practical and policy implications.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	509	Emerging Technologies	Provides an introduction to the implications of accelerating changes in military and security technologies, fueled by rapid developments in five core technology systems: nanotechnology, biotechnology, information and communications technology (ICT), robotics and applied cognitive science. Also introduces the idea of revolutions in military affairs, a concept that has been used to frame discussions about the strategic implications of new technologies from drones to cyber.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	510	Governance Conflict/Transition	One of the most pressing current global security policy issues involves understanding and implementing strategies, mechanisms and processes to address post-conflict and transitional contexts. How do societies create and manage representational governance after the fall of authoritarian regimes? How can institutions be rebuilt and reconstituted? How can a social order address the justice demands of victims of brutal political violence whose suffering was often a key element of prior systems of rule? Provides a critical introduction to the field of post-conflict reconstruction and transitional justice. Reviews the tense and uncertain nature of post-conflict environments and their challenges, engages the security questions raised by peacekeeping and stability operations. Also considers the difficulties of governance and reconstruction in the aftermath of conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	511	Terrorism and Insurgency	Provides a critical overview of the use of terror by governments, insurgents and other nonstate actors. Engages the definition of terrorism and provides an overview of key practices and strategies. Reviews key theories as to the causes, meaning and impact of the deployment of terror as a strategy by distinct groups. This involves a consideration of state terror, insurgencies and global terror networks. Links many of the core ideas reviewed in this class with a set of case studies designed to ground the broader discussion of terror within specific situations and contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	512	Global Trends	Provides an overview of a number of key issues within global politics in the post-Second World War era. Reviews important institutions, including the United Nations, the World Bank, the International Monetary Fund. Provides a critical review of key theories, discourses and practices of international development, decolonization, democratization, poverty and gender issues. Reviews these major aspects of global society in relationship to core questions of governance and social order with a consideration of past, present and future trends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	550	Capstone	Serves as the culminating experience of the Masters in Global Security (MAGS). The capstone course allows each student to explore a research area, interest, theme or question. Final written products will be developed individually based on consultation with faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; GSC 501
GSC	560	Overview of Cybersecurity	Provides an overview of key issues and ideas associated with cybersecurity. Each week presents a set of readings related to particular themes including: the principles of cybersecurity and the special challenges posed by an interconnected world; key elements of internet architecture; outline of cyberattacks and cyberdefense; public and private internet governance and protection; espionage; and an overview of cyberwar. Provides a general overview of questions and core concepts regarding the cyber domain, the nature and structure of the internet and how to understand the special risks, benefits, offensive and defensive elements of an increasingly interconnected world. Reviews a set of core theories, concepts and considerations to provide students who may have little background in the area and do not need any technical proficiency with a foundation for engaging the complex nature of cybersecurity and its rising significance for global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GSC 560 or GSC 598 (Overview of Cybersecurity)
GSC	561	Cybersec Threats and Trends	Provides an overview of cybersecurity threats and trends. Each week presents a set of readings related to particular themes including: an overview of hacking and data breaches; special challenges and risks associated with protecting critical infrastructure on a state and federal level; and the complex, global threats posed by cybercrime. Also explores the risks associated with rapidly expanding social media and interconnectedness currently and into the future as well as providing an overview of key legal and ethical issues associated with cybersecurity policy. Provides a general overview of these issues in an effort to outline major issues regarding cybersecurity threats and how to best think about their impact on global security. Assists students in developing a strong conceptual foundation for engaging these issues and their broad policy implications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	562	Cybersec/Global Pol/Resiliency	Provides an overview of global cybersecurity preparation and resiliency. Because international cybersecurity threats change rapidly and because complete protection for most systems is impossible in an interconnected world, a significant amount of cyber policy focuses on improving mechanisms of preparation and enabling multiple forms of resiliency. The general idea is that attacks cannot be prevented or fully anticipated so creating more flexible, redundant and multi-faceted systems is a useful policy. Each week's readings are related to themes including: understanding core vulnerabilities, types of attackers and targets, modes of deterrence and encryption systems and tools. Engages the special challenges raised by attribution and outlines how to conceptualize and ensure system resiliency. Provides a critical overview of central ideas, concepts and terminology for better engaging of cybersecurity preparation and resiliency as a key element of global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	563	Cybersec Planning and Strategy	Provides an overview of cybersecurity planning and strategy. Since cybersecurity is a constantly evolving field, many aspects of planning are in a state of continual evolution. Many believe that broad-based, flexible strategies are necessary to enable key actors and institutions to engage in adequate policies to ensure general cybersecurity preparedness. Class themes include: an overview of key institutions and actors, central concepts of threat analysis, public and private cyberpolicy, and elements of international regulation. Also engages issues of cybersecurity strategy, the special challenges of non-state actors and ways to conceptualize and engage the future of cybersecurity. Reviews essential ideas and concepts, gains familiarity with key actors and institutions, and engages the complex interplay of governmental, intergovernmental, commercial and non-state actors engaged in cyber threats and protective action.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	501	Global Tech and Development	Major theories of economic, political, and social development, with particular emphasis on the impact of current technologies and globalization.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	503	Tech & the Intl Political Syst	Historical development of international political system, with emphasis on role of technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	504	Tech/Dev in Zones of Conflict	Examines the special context of technology and development in zones of conflict that face wars among other nations, civil strife and dramatic political change.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	505	Soc Sci Inquiry for Global Dev	Research design and processes in the social sciences including development of problem statements, effective literature reviews, diverse techniques of primary and secondary data collection and analysis, and design and development of research proposals.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	506	AppliedProj Methods-Global Dev	Surveys theoretical frameworks, research methods and knowledge mobilization techniques for research and creative applied projects in global development.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	507	Tech/Dev in the Middle East	Examines historical and current patterns of political and socioeconomic development in the Middle East, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 507 or GTD 598 (Political Development in the Middle East)

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GTD	508	Tech/Dev in Latin America	Examines historical and current patterns of political and socioeconomic development in Latin America, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 508 or GTD 598 (Technology and Development in Latin America)
GTD	509	Tech/Dev in North Africa	Examines historical and current patterns of political and socioeconomic development in North Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 509 or GTD 598 (Technology and Development in North Africa)
GTD	510	Tech/Dev in Sub-Saharan Africa	Examines historical and current patterns of political and socioeconomic development in Sub-Saharan Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 510 or GTD 598 (Technology and Development in Sub-Saharan Africa)
GTD	511	Development Policy & Practices	Since the Bretton Woods Agreements in 1944, enormous energy has been devoted to generating the right tools for global development policy. Yet, little attention is given to the relationship between these tools, the practice of development and actual outcomes. At best, it is understood as a "gap" between the theory of development policy and practices. There is no reflection on what the good development policy looks like or what collective learning we have thus far. Informs students on the complexity of policy making and its relationship to development practices through time. Creates an intellectual space to discuss the practices of global development; uses case studies to enhance students' creativity and skill needed in managing and negotiating critical development challenges. Approaches development policy (models, strategies and project design) primarily as a tool to legitimize power relation rather than to orient practice for desired development outcomes.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	512	Intl Gov & Dev - Nuclear Tech	Examines the historical context, present development and possible futures of nuclear technologies around the world. Topics include the origins of the modern nuclear era (1945-present), the nuclear fuel cycle including waste management, nuclear energy for security and modernization, nuclear catastrophes, and new possibilities in nuclear technologies, as well as international policies, national imperatives and local concerns with nuclear development. Students gain a better understanding of the complex political, environmental, cultural and economic values that inform and shape the development and implementation of, as well as resistance to, nuclear technologies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 512 or GTD 598 (Technology and Development in Global Nuclear Energy)
GTD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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GTD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	501	Perspectives on Aging/Life	Uses life course perspective to appreciate age over time and examine demographics, theories and changes of aging, and gerontological issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	502	ResearchProgramEval in Aging	Focuses on critical thinking and empirical research in aging, along with program evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	503	Diversity in Aging	Examines various assumptions and parameters of diversity, autonomy, interdependence, ethical standards and communication with older individuals	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	504	CaregivingIssuesFamiliesProfes	Focuses on family communication, common health problems, and family dynamics that affect the structure of the complex caregiving experience.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	505	InterdiscCommunityCollabAging	Focuses on community collaboration with the family and older individuals to provide comprehensive care in aging.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	506	AdminSystemsMgmt/Aging	Focuses on administration and management of long-term care providers in nursing facilities; subacute and post-acute care; assisted living; senior housing; and community-based care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	507	CareCoordContinuumofCare	Focuses on care coordination of older adults across the continuum of care. Content includes an examination of the components of care coordination and the skills needed to address the needs of older adults with complex health challenges.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	508	MH Assessment & Intervention	Focuses on the aging experience and examines principles of gerontological counseling theory and practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	509	Interventions/Aging in Place	Focuses on creating supportive interventions to assist older adults in maintaining independence in their home environments.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	510	InnovationsProgDevelop&Policy	Focuses on creating age-friendly communities using innovative interventions and programs to promote older adult independence and quality of life. Also explores the influence of policy on care of older adults.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	100	Intro Science Health Care Del	Introduces the science of health care delivery in the United States. Presents basic concepts in health services, health care organizations, and the delivery of safe, accessible, high-quality health care. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HCD	101	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
HCD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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HCD	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
HCD	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300 OR Visiting University Student
HCD	302	Health Care Management	Broad concepts and skills of management; application of these techniques to health care organizations. Students appreciate the variability of management styles and personalities and begin to develop their own style. Solidifies concepts through the use of case studies and asynchronous discussion boards.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	303	Global Health Care Systems	Examines health care delivery systems internationally and explores contemporary issues affecting the institutions that provide health care and the people who seek health services. Covers the historical development of international health care systems, the organization and financing of systems of care, and the policy process and priority setting. Also covers current efforts at health care reform. Provides students with the necessary professional skills to be effective participants in efforts to evaluate and improve the delivery of health care nationally and internationally.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	G	Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	304	Health Care Finance	Influence and effect of health care financing from an institutional and individual perspective. Examines current issues in health care financing including the Affordable Care Act, payment models, Medicaid expansion, accountable care organizations, the role of health insurance and efforts to contain health care costs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Population Health BS major or HCD 302
HCD	330	Health Care Systems in US	Presents and integrates the organization, financing, and delivery of health services in the United States from the professional, organizational, community, and systems perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	332	Population Hlth Policy & Legis	Provides a historical and current overview of the federal/state/local law and policy-making processes that are relevant to population health, including how policies are implemented in society and the impact of those policies on health outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	400	Interpreting Scientific Lit	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	401	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
HCD	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402

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HCD	403	Process Engineering	Core concepts in process engineering, specifically related to systems improvement and patient safety. The Institute of Medicine (IOM) advocates for integrating process engineering within health care to optimize health care outcomes. The IOM addresses multiple dimensions of health, including efficiency, effectiveness, safety, equity, patient-centeredness and access. These domains provide the framework from which faculty approach course content.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	404	Adv Concepts Sci Health Care D	Applies the themes of science, systems and leadership across the continuum of health and health care. Application and discussion of core competencies to facilitate critical thinking.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	405	Health Technology	Develops essential skills in identifying, analyzing and evaluating information technology applications in health care. Examples include electronic health records, computerized prescriber order entry, and computerized clinical decision support. Discusses the use of health technology in a variety of care settings, including outpatient and inpatient, and facilitate access to health care in resource-poor communities through the use of efficient technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HCD	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Quadruple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
HCD	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
HCD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Science of Health Care Delivery BS major; minimum senior standing; minimum 2.00 GPA
HCD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HCD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HCD	501	Biostatistics &Data Management	Provides an understanding of the statistical tools and principles of research design and methods in health behavior research in health environments. Encompasses an overview of quantitative, qualitative and mixed designs and focuses on the interpretation and communication of health behavior research through published reports and presentations. Incorporates research approaches and methodologies utilized in an array of content areas. Helps students gain a strong conceptual understanding and application of the statistical tools and research methods used to answer research questions of interest to health and health behavior researchers; it does not focus on mathematical treatments of underlying assumptions and formulae and related statistical problems sets or exercises.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	502	Health Care Systems and Design	Introduces direct health care delivery structures and processes within and across health care settings, and their impact on the patient, family and community experience of the health care system and services. Examines the interaction among people, resources, delivery systems and built environments using perspectives, tools and strategies from multiple disciplines to evaluate strengths, gaps and opportunities for system improvements.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCD	510	High-Value Pt-Centered Care	Evidence-based strategies for clinicians and health care administrators to implement into their workplace setting to promote healthy lifestyle behaviors and ultimately promote high-value, patient-centered care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511
HCD	517	Economic Eval in Health Care	This course will provide students with an introduction to economic evaluation in health care, including its use as a tool to assist with government decision making. The course will focus on the concepts and the methods involved in cost-effectiveness/utility analysis. It will facilitate the development of skills required to critically appraise economic evaluations and illustrate how to apply the concepts involved to assess health interventions.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	520	Population Health	Presents population health within a framework of health care delivery, public health, health promotion and prevention, health policy, and community programs and resources. Emphasizes a solutions-based perspective consistent with the Triple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	521	Law and Health Promotion	Analyzes case studies which illustrate the impact of policy and law on health promotion strategies and health outcomes. Includes discussions of the theoretical foundations supporting legal, ethical and economic decision making related to health promotion and real-world examples of the impact of current policies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	527	Healthcare Econ & Finance Mgmt	This course combines health economics and health care financial management. There is an introduction to double entry accounting to provide a working knowledge of cash and accrual accounting, plus an analysis of balance sheets, profit and loss statements and cash flow statements. How to construct a budget in a health care environment is a core skill in this course. The health economics component of the course introduces students to important economic concepts such as opportunity cost and supplier-induced demand and illustrates how these concepts can be applied to the health care industry.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	532	Health Care Mgt & Finance	Health care organizations are very complex institutions and require sophisticated understanding of modern management techniques. Provides a comprehensive overview of health care management concepts and principles with a focus on developing individual management skills. Centered on the management function and its unique purpose for an organization. Emphasizes planning, organizing, motivating and controlling, and how to acquire competency in these functions. Also addresses health care finance, which is an essential management competency.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCD	537	Comparative Health Care System	The first part of this course focuses on the principles and practice of health system analysis, the sources and utilisation of information relating to the development, organisation and operation of health services, and frameworks for assessing the performance of different health systems. Then, drawing on material from the health systems of affluent and developing countries, we examine the constitutional, legal, economic, social, and political environments within which health care systems operate and the various patterns that emerge. We review patterns of health service organisation and management: health policy development and planning; characteristics of personal, community and environmental health services and their activities; health service financing arrangements, including health insurance systems; and, the health workforce. The impact of some recent attempts at health system reform in different countries is assessed and proposals for future re-structuring are critically reviewed.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	540	Process Eng Health Qual&Safety	Provides an introduction to the science of health care delivery, an exciting field that focuses on how to achieve the quality care that providers want to deliver and patients expect to receive. Too often quality care is compromised by inadequately designed systems of care. Provides an overview of the health care delivery system and then introduces the major components of the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	547	Hlth Leadership Workforce Mgmt	This course critically examines a range of theories, models and approaches to leading and managing at different levels in health service organisations. It provides tools to identify and respond to management problems in the context of major changes in priorities and services in health and its workforce. Whether you come from a clinical, public health or other disciplinary background we consider how you can draw upon that understanding and your current organisational setting to strengthen your health leadership capacity and workforce management skills. Topics include: the shifting role of managers in health services; management and leadership theories and models; influence, power and management ethics; managing in resource constrained environments; diversity in health service settings; managing teams and motivating staff; conflict management and improving health worker performance; workforce planning and capacity building.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	550	Capstone	Discusses the results from student capstone projects, done in teams, and these projects related to broad topics explored during the prior coursework in the program. Capstone projects are identified early in the master's program in conjunction with and overseen by the degree leaders and the industry partners, and often a health care organization or health agency. These projects are worked on through the year with final written and verbal reports due in the last half of the semester.	N	RSC	N	GNA	College of Health Solutions	College of Health Solutions	1-2		Prerequisite(s): HCD 502 with C or better
HCD	557	Clinical Governance Risk Mgmt	This course provides an overview of emerging health policy with particular attention to clinical governance. The course consists of three components. The first component targets the main constituents of clinical governance, including practice design, analysis and improvement, error reporting and investigation, public accountability and open disclosure, multi-disciplinary teamwork and clinical leadership. The second component introduces the tools of clinical process redesign. These tools can help managers make practical improvements to practices in their units. The third component targets risk management by providing an overview of the kinds of risks faced by health service managers, and by outlining different views of risk (adverse effect versus opportunity capital). The course is comprised of three case studies that engage students in addressing specific but generalisable manifestations of the three components that make up the course.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student

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HCD	560	Systems Metabolic Physiology	Studies vertebrate energy metabolism in the context of systems physiology. With a particular focus on mammals and especially humans, discusses macronutrient storage, mobilization and utilization at the whole organism level. Presents theory and practice of several methodologies used to measure metabolic turnover, including indirect calorimetry, mass balance, isotopic tracers and doubly labeled water. Topics include metabolic rate and fuel selection during rest, locomotion and environmental stress such as energy scarcity or oversupply.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	561	Cellular Energetics/Metabolism	Focuses on the thermodynamics and kinetics of energetic processes at the cellular level. Discusses the metabolism of macronutrients by cells, principally skeletal muscle, cardiac muscle, adipose and liver. Presents membrane transport, energy storage and mobilization, non-oxidative/oxidative pathways of ATP synthesis and energy dissipation processes. Develops and uses concepts of metabolic control, energetic efficiency, metabolic scope and signaling to explore classic and current biomedical literature. Particularly emphasizes mitochondrial metabolism, including the chemiosmotic theory, proton leak, superoxide (free radical) production, interactions between the glycolytic and oxidative pathways, and the central role mitochondria play in health, disease and mortality. Describes the theory and practice of several methodologies central to the study of energy metabolism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	562	Bioeth Issues Trans Biomed Res	Discusses ethics and policy issues related to translational biomedical sciences research. Emphasizes research involving human subjects. Topics include: genomics and biospecimen research, especially related to biobanks, including confidentiality issues, genetic testing, ownership of genetic information, community advisory boards and return of results questions; regulation of research and proposals including human research oversight by the Institutional Review Board (IRB); relationship between medical research and medical treatment; and communication with patients, within and between institutions and with the general public.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	563	The Metabolic Syndrome	Provides a comprehensive understanding of the metabolic syndrome from an environmental, genetic and molecular perspective. Also discusses the treatment of this complex disease including lifestyle changes, pharmacological interventions and surgical procedures. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	564	TBS Seminar & Data Club	Combined seminar and data club related to translational biomedical sciences.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	567	Infectious Diseases Challenges	Throughout history new pathogens such as HIV, SARS and pandemic influenza have emerged to challenge human populations. This course will introduce you to the challenges of controlling or managing infectious diseases through an appreciation of key factors such as differing modes of transmission, the impact of travel and behavior on transmission, the importance of surveillance in achieving disease prevention and control, key steps in outbreak investigation and current disease control and management strategies. Dengue fever, hepatitis A virus, HIV, influenza, measles, meningococcal meningitis, rota virus, SARS and TB will be used to learn about preparing for and containing diseases with potentially catastrophic impact to the health and economic stability. This course supports you achieving a range of capabilities that you will need if you are planning to have a career in epidemiology and infectious disease control.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student

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HCD	570	Process Engineering	Provides an overview of process engineering and the specifics of Lean Six Sigma as it applies quality improvement/process improvement in health care. The current health care system cannot deliver the necessary quality to ensure safety or consistent outcomes in predictable and controllable ways. It is essential to understand the impact of process engineering to improve the performance of health care delivery, and to understand the steps to performing a Lean Six Sigma process improvement project. This course builds on the quality improvement techniques introduced in earlier course work. Also enables students to obtain their Green Belt Certification in Lean Six Sigma.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	575	Leadership/Professionalism	Integrates principles of leadership theory, innovation leadership, change leadership and systems thinking through didactic and experiential learning. Identifies characteristics of successful leaders in health and health care, develops competence and confidence in creativity and innovation, and identifies ways to implement meaningful change in the dynamic health care environment. Applies theories to case studies in health and health systems to promote critical analysis, discussion and reflection on topics that provide the framework for future coursework.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	577	Infection Prevention in Hlthcr	Antimicrobial resistance is an urgent global health priority. In the near future common treatable infections may become untreatable. Currently 1 out of 20 hospitalised patients contracts a health care associated infection, of which around 50% are preventable. These infections add to the functional disability and emotional stress of the patient and in some cases, lead to disabling conditions that reduce their quality of life. In addition, they contribute to increased hospital stays and added expense to the health care system. Infection prevention and control in health care settings is now of national priority endorsed by the Australian Government, Ministries of Health, the Australian Commission of Quality and Safety in Health Care, health care facility accreditation organisations, as well as internationally by the World Health Organization.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	587	Outbreak Investigation & Intl	The course will provide a grounding in epidemiological pattern recognition (epidemic, endemic, sporadic) in infectious diseases for first-outbreak responders, surveillance officers, or policy makers from medicine, allied health, public health, emergency management, law enforcement, military or others from relevant backgrounds. Case studies in risk assessment, risk mitigation, response and prevention will be studied. These will cover Ebola virus disease, MERS-CoV, avian influenza and salmonellosis; distinguishing natural from unnatural epidemics, surveillance tools, rapid intelligence and analysis methods. Data quality in resource limited settings and implications for risk assessment will be examined. Understanding of modelling and forecasting of infectious diseases based on known transmission dynamics and patterns will also be explored. Preparation of first line responders to optimise usage of infectious diseases intelligence techniques will be covered, including prioritisation of data sourcing/mining, strengthening, mapping disease transmission patterns to modes of transmission, and ultimately epidemic control measures.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		

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HCD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	602	Health Informatics Future HC	Offers an overview of the field of health informatics, designed specifically for health science students, health services students, and current and future interdisciplinary clinicians. Combines perspectives from medicine, computer science, information science, organization science, Science and Technology Studies and human-centered computing for use of computers and information in health care and the health sciences. Covers applications and general methodology in health informatics using current topics in the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	150	Intro Health Innovation	Introduces health care innovation including diffusion of innovation, technology and current health care innovative ideas and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCI	250	Health Entrep & Value Creation	Change your mindset. Focuses on recognizing and questioning your assumptions, learning how to gather and accept feedback, and designing pivots to improve innovative and entrepreneurial outcomes. Seeks value creation opportunities in health and health care settings through opportunity recognition, value creation and business modeling. Students create an innovative change idea, demonstrate proficiency in lean startup methodologies, and "pitch or ditch" a ready-to-launch idea.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCI	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	311	Health Innovation: Found Conc	Provides foundational knowledge for leading health innovation. Organized around the Seven Pillars of Innovation: innovation process, leadership structure, outcomes, evidence-based practice, finance, policy, and technology and communication. Emphasizes principles of health innovation, in addition to characteristics, skills and knowledge required for the innovator.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102,105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	313	Phil of Science in Healthcare	Philosophy of science and its application to health and healing paradigms. Employs selected schools of thought and individual philosophers within philosophy of science to closely examine health and healing paradigms. Discusses concepts such as "life" and "death". Explores questions: What is science? What is health? Examines the way in which philosophy of science informs perceptions and definitions of health and healing in individuals and populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	344	Manage & Lead Health Orgs	Focuses on management, administration and leadership strategies in health institutions with an emphasis on organizational innovation and entrepreneurial thinking. Managing in health organizations includes unique challenges related to labor relations, practice codes of conduct, federal privacy considerations, and accreditation regulations. Includes a review of leadership methods, labor laws and practices for effective management in health- and health care-related organizations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 311 with C or better OR Visiting University Student
HCI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours

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HCI	412	Transforming Health Care	Investigates the essential elements of systems thinking as a framework for innovation in addressing current and future issues in health care. Demonstrates systems thinking to present and future problems in health care and utilizes the knowledge and understanding of behavioral and learning styles to facilitate innovation in diverse systems. Stresses the importance of collaboration to the systems perspective, in addition to the value of individual worldviews.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	421	Health Care Policy	Innovation perspective on policy decision making in the health care environment. This perspective views policy-making as a fluctuating, dynamic and evolving process as seen through a lens of innovation principles. Explores the relationship between politics and policy and discusses factors influencing policy development. Identifies methods to formulate and implement policy and presents models to evaluate, analyze and modify health care policy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	425	Facilitating Innovation	Principles of facilitation that promote and enable the implementation of innovation to achieve outcomes. This approach identifies facilitation as requiring collaboration, continuous evaluation, and a focus on identifying and measuring health outcomes. Discusses characteristics of effective teams, innovation leadership behaviors that impact change, and involvement of end users. Compares and contrasts traditional project management processes with innovative facilitation techniques.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 311 with C or better OR Visiting University Student
HCI	428	Technology: Health Care Innov	Explores the role of technology in achieving the Triple Aim: improved quality, improved patient experience and decreased cost. Compares and contrasts tools of technology that hold the potential to advance innovation in health care. Examines the relationship among the users, their behaviors and technology and how this interaction advances communication, automation, organization and standardization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): minimum 45 hours
HCI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours
HCI	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Prerequisite(s): minimum 45 hours
HCI	538	Innovation and the Individual	Role of the innovator, including the essential insight, leadership styles, vision, ethical wisdom, resiliency and the development of an attitude supportive of risk taking. Examines and correlates different situational challenges with types of intelligence, behaviors, learning styles.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	540	Applying Principles of EBP	Understanding how application of evidence-based practice principles assists health care professionals to provide the best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	542	Systems Thinking	Explores systems thinking theories and methodologies in the context of the complex and often chaotic environment of health care. Examines opportunities and challenges for innovation and innovative leadership in the health care system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCI	543	Approaches Health Care Innov	Theory-based survey course introduces approaches to lead innovation in an organization. Many change initiatives are designed by those not completing the work, leaving workers isolated, restricted and powerless. Teaches health care leaders to value collaboration with and seeking input from those who will carry out the work. Analyzes approaches to planned change: positive deviance, appreciative inquiry and creation of a learning organization. Students construct a change plan using an appropriate approach to address a health care problem.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	544	IT for Health Care Innovation	Transforming health care through the development of sound information technology strategies is critical to the success of most health care organizations today. Examines information technology trends and their strategic application in health care. Learners create a plan for engaging IT resources and capabilities, and for executing an IT-based strategy for solving a problem in health care. Topics covered include: strategic processes, digital transformation, IT assets, design thinking, value creation, IT governance and transition change management.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	545	Public Speaking for Innovation	Builds presence as a speaker and a leader. Public speaking has evolved dramatically over the last few years. Now it is about creating a public presence; e.g., on YouTube, Facebook live, TED Talks. Public speaking for innovation is a combination of finding and building one's presence as a speaker--and translating that to an ability to explain and persuade, making the case for change. Students build their presence and gain the foundational knowledge necessary to successfully explain and persuade in various modalities of media, from speaking in person to video creations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	548	Adv Princ&Concepts Innovation	Explores and analyzes the innovation in complex systems, focusing on developing specific skills for successful innovations. Specifically addresses strategies to overcome barriers and resistance to innovation in health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538 with C or better
HCI	550	Health Care Policy & Innovation	Introduces the political, organizational, and economic dimensions of health care policy, emphasizing strategies for innovative policy and practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	552	Financing for Innovation	Provides an overview of healthcare economics; develops budgeting, planning, and management skills; and culminates in financial analysis skills necessary to facilitate management decision making or writing business plans or grant proposals.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	554	Outcomes Evaluation	Outcomes measurement, management, and evaluation for health care practitioners and/or leaders.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	561	Innovation Methods	Explores methods to generate innovation for use in a health care setting. Provides tools and practice in generating ideas, exploring utilizing appreciative inquiry, and demonstrating competencies related to the theories and processes of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	563	Capstone: Final Project	Applies the concepts learned in MHI core courses and presents evidence of knowledge in innovation principles, applications and strategies for implementation and evaluation. Develops an innovation project in the form of a presentation. Provides a comprehensive methodology for completing all aspects of an innovation opportunity. Student-directed demonstrations of the application of learned leadership skills and techniques for facilitating team and individual implementation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s) with C or better: HCI 538; HCI 540; HCI 542; HCI 544; HCI 548; HCI 550; HCI 552; HCI 554; HCI 561
HCI	570	Innovation Proposal	Applies concepts learned and operationalizes skills acquired throughout the Health Care Innovation certificate. Students envision emerging paths toward an outcome by first presenting a problem they have identified within a health care organization, and creating collaborative relationships and developing strategies to initiate change in their chosen setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): HCI 538; HCI 542; HCI 554; HCI 561

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HCI	571	Innovation Portfolio	Examines and applies personal leadership potential. Focuses on the effective development and facilitation of human networks to advance innovation in the health care space. Challenges students to appraise and analyze personal leadership strengths, challenges and opportunities. Explores strategies to evaluate students' current networks; develops the students' emergent professional networks. Gives focus to building relationships necessary to advance innovation in the health care space. Students develop and implement an action plan to advance their personal leadership growth and network utilization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538; HCI 543; HCI 545; NLM 562
HCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	210	Ethics HealthCare Professional	Health care ethics emphasizing analysis and ethical decision making at clinical and health policy levels for health care professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	
HCR	220	Intro Health Professions U.S.	Introduces the historical, social, political, economic and interprofessional contexts in which health care professions and the United States health care system evolved.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	H	
HCR	221	Fndntl Cncpts Hlth Care Cord	Focuses on the foundational elements of health care coordination. Discusses the health care coordination process including assessment, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	230	Culture and Health	Cultures of diverse groups and health/illness. Cross-cultural communication, awareness of own cultural influences, indigenous and alternative healing practices.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	C & G	
HCR	231	Fund of Comm Health	Provides a framework for understanding community health concepts.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	240	Human Pathophysiology	Chemical, biologic, biochemical, and psychological processes used in study of structural and functional alterations in health with selected therapeutics.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better; CHM 101 or higher with C or better; MIC 205 with C or better; MIC 206 with C or better OR Visiting University Student
HCR	241	Fndtions of Integratv Health	Discusses the similarities and differences of the biomedical and integrative health care systems providing an overview of integrative health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	245	Sleep, Sleep Disorders&Behavio	Focuses on the nature, organization, function and biopsychosocial determinants of sleep and sleep disorders across the lifespan, emphasizing the social and behavioral processes that influence them.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): Credit is allowed for only HCR 245 or HCR 294 (Sleep, Sleep Disorders, and Behavior) or HCR 294 (The Science of Sleep Behavior)
HCR	259	Compliance and Health Care Ind	Introduces health care compliance as an industry and a profession. Explores the complex federal and state laws that regulate the delivery and reimbursement practices of the U.S. health care system. Also explores federally legislated mandates for formal compliance programs, program elements, and the organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Students may not enroll in HCR 259 if credit with C or better earned in both HCR 260 and HCR 261 OR Visiting University Student
HCR	260	Health Care Industry	Overview of the complex system of regulations that frame the oversight and monitoring of the U.S. health care industry. Provides a foundational understanding of federal and state regulations as well as private health care regulatory agencies' requirements as they relate to physicians and other health care professionals, hospitals and other health care institutions, and insurance companies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		

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HCR	261	Health Care Compliance	Introduces health care compliance as an industry and a profession. Explores federally legislated mandates for formal compliance programs, program elements and organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	262	Health Care Licensure	Introduces interprofessional practice, professional licensure, education and training, certification and scope of practice within the health care industry. Explores compliance standards and accreditation as they relate to the authority and scope of licensure boards, which are designed to safeguard the public health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	263	Intro to Medical Billing	Introduces the complex process of medical coding and billing practices and related federal regulations and programs. Provides learners with a fundamental understanding of medical coding and billing processes including terminology, stakeholders and regulatory impact.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 260 with C or better OR Visiting University Student
HCR	264	Regulatory Essentials I	Offers a comprehensive overview of the regulations that impact the health care delivery industry. These regulations include: protections against fraud and abuse, patient rights and privacy, protected health information (PHI) and electronic protected health information (ePHI), and occupational health and safety.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 261 with C or better OR Visiting University Student
HCR	265	Regulatory Essentials II	Comprehensive study of the creation, management and evaluation of all aspects of a formal health care compliance program. Learners investigate and discuss roles of the compliance officer and compliance committee, risk analysis, recommendations for and implementation of corrective action.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 264 OR Visiting University Student
HCR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	301	Rsrch Mthds for Hlth Care Prof	Explores basic concepts of qualitative and quantitative research design utilizing methods of assessment, planning, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): PSY 230, SOC 390, STP 226, or SWU 321 with C or better if completed; TWC 347 or 362 with C or better if completed OR Visiting University Student
HCR	302	Social Determinants of Health	Addresses issues of social determinants and health disparities at the local, national and global levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 301 with C or better if completed; TWC 347 or 362 with C or better if completed OR Business (Health Care) BA major or Health Care Coordination BIS emphasis or Health Care Coordination minor OR Visiting University Student
HCR	303	Assess Nds Assts Cap Hlth Ed	Assesses needs, assets and capacity for health education at the individual, family and community levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 with C or better; HCR 230 with C or better; Pre- or corequisite(s): CDE 232 with C or better if completed OR Visiting University Student
HCR	310	Fundamentals Human Trafficking	Covers the complex problem of human trafficking including types of human trafficking, terminology, victim identification, policy implications, and the role of health providers and governmental and community agencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only HCR 310 or HCR 394 (Fundamentals of Human Trafficking) OR Visiting University Student
HCR	321	Advcd Cncpts Hlth Care Cord	Presents advanced concepts for health care coordination, including: interprofessional teamwork, medication reconciliation, patient/family engagement and other tools that facilitate best practices for health care coordination. Students also learn models for health care coordination, and concepts and practices to facilitate transitions of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 with C or better OR Visiting University Student
HCR	331	Communication Within Commun	Focuses on the integral nature of communication in health care, including the role communication plays in shaping individual, social and cultural beliefs and expectations about health. Provides skills for effective communication when working with individuals, groups and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	335	Prog Develop Mngmt Comm Hlth	Incorporates models, research and resource management to plan, strategize and evaluate community programs that promote healthy lifestyle choices in various, as well as specific, geographic communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): General Studies Literacy course; minimum 45 hours OR Visiting University Student

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HCR	336	Environm Community Health	Examines the interdependent relationship between the health of the environment and the health of communities. Includes a focus on specific communities, as well as agencies and laws involved in the health of communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better OR Visiting University Student
HCR	341	Bio, Manipulv,Bdy Bsd Therap	Analyzes the principles and practices of select biological and body-based therapies and modalities and their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student
HCR	342	Mnd Bdy Enrgy Theraps Modalit	Analyzes the principles and practices of select mind-body and energy therapies and modalities and explains and distinguishes their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student
HCR	343	Hist Cltrl Fnd Integrvt Hlt Cr	Distinguishes commonalities and differences between early healing traditions and investigates the utility for today's health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	350	Intro Clinical Research	Provides an introduction to the biomedical and clinical research field and associated operational processes. Examines clinical trial development phases, regulatory protections for human subjects, clinical research team specializations, research organizations, good clinical practice, institutional review board functions, and research funding mechanisms. Explores specialized career positions for nursing and allied health professionals.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	360	Data Security and Privacy	Focuses on administrative practices that ensure the security of computerized systems and the protection of health information. Topics include communication and reporting, as well as specific regulations and authorities such as the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Breach rules, and HIPAA Security and Meaningful Use Attestation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	361	Risk Management	Risk management practices as they relate to the oversight of operations and processes within the health care industry. Utilizes various tools to predict, analyze and mitigate practices that may lead to industry noncompliance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	362	Monitoring and Auditing	Ongoing health care compliance evaluation process critical to a successful compliance program. Provides the knowledge to utilize monitoring and auditing systems to ensure health care operations conform to established standards or comply with federal, state or local rules and regulations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	400	Evd-Bsd Prac Hlthcare Prof	Methods of clinical and scientific inquiry. Focuses on the application of an evidence-based practice approach.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 301; TWC 347 or 362, OR Applied Science (Health Innovation) BAS major OR Visiting University Student
HCR	402	Advocy for Hlth and Hlth Ed	Discusses and analyzes existing or proposed policies on health and strategies for influencing the policy-making process.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 303 with C or better
HCR	406	Hlth Litrcy for Hlth Cr Prof	Prepares students to use best practices for health communication that promote consumer health literacy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 or MED 320 (HCD 320); HCR 230 or HSC 210 (HCD 210) OR Applied Science (Health Innovation) BAS major; Pre- or coreq(s): HCR 301 w/C or better if completed or Applied Science (Health Innov) BAS major OR Visiting University Student
HCR	420	Prof Role Dvel: Hlth Care Cord	Professional role development including role transition, leadership and project management for health care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 (or HCR 320) with C or better; HCR 321 with C or better OR Visiting University Student
HCR	422	Plcy Fincl Princpl Hlth Cr Cor	In-depth look at the history of health care policy in the United States from World War II to the present focusing on how Medicare, Medicaid and the Affordable Care Act impact health care system and patient reimbursement. Also discusses elements of insurance, managed care and universal care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 with C or better OR Visiting University Student
HCR	426	Hlth Care Coord Capstone	Applies higher-level critical thinking, teamwork, effective communication, informatics and design process required to develop a "real-world" health care coordination solution that will be a catalyst for change by improving safe patient-centered transitions, lowering readmission rates, increasing patient safety, and/or decreasing the cost of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 321 with C or better; HCR 400 with C or better; HCR 422 with C or better

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HCR	430	Fndn to Hlth Care Systems	Explores the impact of the current U.S. health care system on the health of individuals, families and communities.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 (HCR 330) or 259 or 260 with C or better OR Visiting University Student
HCR	435	Leaders in Community Health	Prepares students to assume a leadership role in health promotion in communities.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better; Pre- or corequisite(s): HCR 335 with C or better if completed OR Visiting University Student
HCR	439	Community Health Capstone	Provides the opportunity to explore the health status of communities and to develop strategies for community health improvement.	N		SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s) with C or better: HCR 231, 331, 335, 336. Pre- or corequisite(s): HCR 430, 435 with C or better if completed
HCR	440	Intrprof Appch Intgrtv Hth Cr	Prepares learners to develop and lead interprofessional teams with a focus on roles and responsibilities of integrative health care providers and practitioners.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	441	Lgl Eth Iss Imp Intgrv Hlthcar	Examines current laws, government regulations, ethical principles and case studies to understand issues and consumers' use of integrative modalities.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 with C or better OR Visiting University Student
HCR	449	Integratv Hlth care Capstone	Provides the opportunity to design a healing environment project that reflects the philosophy, mission and values of a health care organization in relation to underlying philosophy and beliefs of integrative health care.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 and 341 and 342 and 343 and 400 and 440 all with C or better; Pre- or corequisite(s): HCR 441; TWC 443
HCR	460	Investigations and Disclosures	Types of disclosures required by and investigations conducted by regulatory and accrediting agencies overseeing health care entities. Introduces oversight activities, enforcement and potential penalties incurred by health care entities.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 362 OR Visiting University Student
HCR	461	Corrective Action	Use of corrective and preventive actions (CAPA) in meeting the challenges of a compliant health care services operation. Covers design and implementation of CAPA to respond to deviations or errors in the health care environment. Identifies problems, implements corrective actions, evaluates consequences and employs preventive measures.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 460 OR Visiting University Student
HCR	462	Specialty Topics	Provides a comprehensive review of case studies and recent enforcement action involving litigation and enforcement of health care law, including review of landmark and contemporary cases brought by the United States Office of Inspector General, the Office of Civil Rights and state attorney generals. Applies knowledge and skills acquired from earlier coursework to real-world situations.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): HCR 260; HCR 261
HCR	463	Capstone Project	Culminating course integrating all components of health care compliance core courses and demonstrating knowledge and competency in the field of health care compliance.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): HCR 460; HCR 461
HCR	471	Interprof Ed & Comm Hlth	Community-engaged service learning exposes students to community health and interprofessional education through the delivery of team-based services with vulnerable populations. Students build on their professional practice skills as they develop interprofessional competencies.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prereq(s): ENG 101, 105, or 107 w/ C or btr; min 15 hrs; Crdt for only CRD 471 or HCR 471 or CRD 494 (IntrproEdu & ComHlth), CRD 598 (IntrproEdu & ComHlth), HCR 494 (IntrproEdu & ComHlth), or PRM 494 (IntrproEdu & ComHlth) OR Visiting University Student
HCR	472	Interprof Ed & Complex Hlth	Complex health community-based experiential learning with immersive "real-world" learning opportunities. Students dedicate hours at pre-approved placement sites serving a community; apply new (and advance prior) complex health knowledge and skills; benefit from an expanded scope of supervised practice experience while providing targeted complex health interventions that address health and health care disparity needs, improve care quality, and reduce care costs for individuals, families, communities, and/or populations with complex health needs. Students practice values and ethics, communication, roles and responsibilities, teams and teamwork, and leadership competencies essential for interprofessional collaborative practice and team-based care. Online and in-person collaborative learning includes: seminars, course readings, discussions, and reflection assignments to facilitate critical thinking and a deeper understanding of the delivery of complex health interprofessional team-based care in the community.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prereq(s) w/ C or btr: Hlth Care Coord mjr; HCR 210; HCR 220; HCR 230; OR CRD 471 or HCR 471; Crdt for only CRD472 or HCR472 or CRD494(Intrprf Ed&Cmplx Hlth) or HCR494(Intrprf Ed&Cmplx Hlth) or CRD598(Intrprf Ed&Cmplx Hlth) OR Visiting University Student

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HCR	473	Interprof Ed & Com Sys Hlth	Community-engaged experiential learning integrates students into comprehensive systems health and interprofessional education through the creation of team-based community impact projects with vulnerable populations. Students refine their professional practice and leadership skills as they integrate interprofessional competencies.	N	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Prerequisite(s) with C or better: Community Health, Health Care Coordination, or Integrative Health BS major; HCR 210; HCR 220; HCR 230 OR CRD 471, CRD 472, HCR 471, or HCR 472; Credit is allowed for only CRD 473 or HCR 473 OR Visiting University Student
HCR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
HCR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	PRA	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7		
HCR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		
HCR	543	Food Safety and Protection	Covers food safety from the point of view of retail food safety inspectors. Addresses careers in food safety and protection, food and waterborne pathogens, food safety laws and regulations, hazard analysis, food safety inspection steps, investigations, report writing and response to food emergencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	544	AssessFoodSafetyPolicyProcedur	Provides overview for the knowledge, skills and abilities required for assessing food safety and developing food safety policies, procedures and training.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 543
HCR	545	Biospec Repos Admin	Examines the biospecimen repository industry from a business perspective. Students learn the scientific basis, collaborative nature, required personnel, timelines and processes that underlie the business environment of biospecimen repositories and their administration.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	546	Mgmt of Biospec Repos	Examines the biospecimen repository industry from an operational perspective. Students learn the process aspects of repository start-up through collection, maintenance and disbursement of specimens. Key elements include personnel training, planning, quality control, risk management, project management and safety implementation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	547	Biospec Tech Mgmt	Examines the biospecimen repository industry from a technology and resource perspective. Students learn the planning and selection of technology and resources for the support of the start-up and long-term maintenance of a biospecimen repository. Key elements include technology and resources assessment and choice, cost-benefit analysis, initial budget, long-term and short-term planning.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	548	Biospec Repos Regs and Ethics	Examines the biospecimen repository industry from an ethical and regulatory perspective. Students learn the ethical and consenting challenges of biospecimen collection, storage and disbursement. Examines relevant historical case histories to inform current policies and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	549	Science Innov & Biospec Repos	Explores the driving effects of scientific innovation on biospecimen administration management. Students learn how scientific advancements increase the demand of high-quality biospecimens and high-quality data, referred to as next-generation biorepository research. Examines tracking pre-analytical variables, adequate preservation and storage methods, controlled biospecimen and data custodianship, governance with ethical and scientific oversight of operations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545

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HCR	550	QA&SafetyinFoodDietSupplement	Covers current applicable regulations and the regulatory framework that ensure the safety and quality of dietary supplements for the consumer. Reviews FDA regulations including Good Manufacturing Practices (GMP), quality in the development and manufacture of dietary supplements, labeling requirements, advertising, product quality, premarket notification, marketing, and postmarketing of dietary supplements.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	551	Clinical Research Monitoring	Introduces clinical trial monitoring processes and procedures.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	552	Medical Device Regulation	Comprehensive examination of the regulatory framework for the design, development, approval/clearance and marketing of medical devices in the United States throughout the product lifecycle.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	553	Quality and Clinical Research	Explores basic quality assurance techniques, standards and applications in the clinical research arena.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	555	Pharma Risk Management	Comprehensive examination of regulatory, legal, and scientific factors in pharmacovigilance and risk management and risk mitigation.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	557	ClinicalResearchDesignMethods	Explores basic clinical trial biostatistical methods in concert with clinical trial design and methods.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	558	Regulatory Writing	Focuses on teaching and applying writing and presentation skills critical for regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	560	Regulatory Science Capstone	Culmination course integrating all components of regulatory core courses demonstrating knowledge and competency in the field of regulatory science.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Pre-requisite: Regulatory Science and Health Safety Master of Science student
HCR	561	Conduct of Clinical Research	Introduces concepts and policies for the responsible conduct of research (RCOR), institutional review boards, and dissemination of findings.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	562	Data Management & Technology	Orientation to database design and management, technology assessment methods, auditing procedures for continuous quality improvement (CQI), and cost-effectiveness analysis (CEA).	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	563	Regulatory Affairs	Principles of clinical research management and regulatory affairs. Overview of national/international regulatory systems and agencies, and trends in conducting clinical research.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	564	GlobalRegulatAffairsLeadership	Links students to international networks; exposes students to regulators of therapeutic products in different jurisdictions and provides networking within a global industry to enhance the confidence of students to influence global regulatory policy development. Enables students to network with senior executives and experienced regulatory affairs professionals in the global therapeutics industry. Provides skills, knowledge and global connections to discuss and develop strategies to address principles and issues facing global pharmaceutical regulatory affairs and its role in the maintenance of public health. Students develop a deep understanding of therapeutic product regulation across the world and acquire the skills to lead change management in international regulatory issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HCR 564 or HCR 598 (Global Regulatory Affairs Leadership)
HCR	565	Clinical Research Operations	Development, implementation, and operations of FDA clinical research trials, including budgeting, contract negotiations, site evaluation, marketing, project management, and reporting.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	566	Research Management Capstone	Culmination course integrating CRM degree coursework by demonstrating knowledge and competency in clinical research management planning, operations, and implementation processes.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 551 with C or better; HCR 561 with C or better; HCR 563 with C or better; HCR 565 with C or better; HCR 574 with C or better; 15 additional hours of HCR graduate-level courses with C or better
HCR	567	Research Management	Management and leadership principles integrated with contemporary research topics will be introduced.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	568	Health Care Project Management	Designed for graduate students and managers who desire to improve their effectiveness as project managers in the health care context.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	570	International Health Systems	Introduces systems of international healthcare delivery, professions that provide healthcare delivery, and international research principles and practices.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	571	Cultural Diversity&HlthcareDel	In-depth exploration of culturally diverse aspects of population health, including culture-bound syndromes, folk practices, assessment approaches, and interactions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	572	International Health Capstone	Culminating course integrating all International Health requirements that produce culturally responsive implementation and evaluation plan for the student's clinical practice. A portion of the course will be held in Mexico.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	574	Science&Research Review Boards	The role and responsibilities of Scientific and Research Review Boards in the conduct of human research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	575	MgmtNegClinTrialBudgetContract	Examines best practices in contracting, negotiating and budgeting for industry-sponsored clinical trials.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	576	Drug Discovery,Development&Reg	Covers the drug discovery and development process from bench to market, including bench and animal research, FDA approval for human studies (Investigational New Drug submission), Phase I-IV clinical studies, New Drug Application, marketing and post approval surveillance. Reviews applicable regulations, laws, guidance documents, good clinical practices related to drug development in the U.S. and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	577	Global Regulatory Affairs	Covers regulatory authorities, processes, procedures, International Conference on Harmonisation (ICH) guidelines and documentation for the marketing approval of new medical products in the U.S., European Union (EU), Asia and emerging countries. Reviews global regulatory submissions, focusing on the organization and requirements of the Common Technical Document (CTD) global sections. Also reviews global trends, ethical considerations, country-specific considerations and cultural considerations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	578	Legal Aspects of Clinical Rsrc	Reviews the legal implications related to conducting clinical research. Covers current topics and legal issues, standards, duty of care, informed consent, research contracts, malpractice, negligence, informed consent, liability, clinical trials and criminal law, disclosures of clinical information, and liability. Students review and discuss recent research cases and litigation on a wide range of legal issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	579	Trans Rsrch Drug Discovery&Dev	Reviews the translation of new drug research from bench to FDA approval. Provides an overview and history of the translational process in the discovery of new drugs and biologics used in the treatment of medical conditions. Topics include: addressing the gaps in drug development, new approaches to speed the process from bench to FDA approval, and the provision evidence-based medicine for sustainable pharmaceutical products utilized in medical treatment.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N		SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
HCS	501	FoundationHealthCareSimulation	Explores theoretical foundations of health care simulation education and delivery.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
HCS	502	HC Sim Ed Assess Debrief	Explores assessment and debriefing practices in health care simulation education. Provides opportunity to analyze and plan debriefing strategies that support reflective, student-centered learning.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501
HCS	503	Operations Mgmt Health Care	Engages students in the business practices and principles essential to health care simulation program operations.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501; NUR 671
HCS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		PRO	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	101	ASU & Herberger Inst Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university and the Herberger Institute for Design and the Arts. Explains and defines success with integrity, ASU resources and involvement, the importance of arts to society and the community, personality and learning style, and success in college and beyond.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts majors
HDA	111	Art and Society	Introduces the interplay between art and society, particularly how one influences the other.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		
HDA	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3	HU	Credit is allowed for only FSH 125 or HDA 125
HDA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	210	Creativity & Innov Design Arts	Designed to get students thinking in a focused manner about creative practice and process. Many young designers and artists arrive at higher education in their discipline having taught themselves or having received a piecemeal education in the directed application of ideas. Aids students in knowing why and how they are creative. Covers types of creativity, how inspiration happens, how to take a project from idea to reality, how to work creatively in teams and how to fuse creative ideas with an understanding of environment to help realize work in socially useful ways.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Credit is allowed for only HDA 210 or 294 (Creativity & Innovation for Design and the Arts)
HDA	225	Fashion Design	Expands upon fashion design fundamentals learned earlier to encompass additional aspects of the fashion industry, which includes fashion as business, and as a sociological and cultural phenomenon.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 125 with C or better
HDA	252	Fdn Arts&Design Entrepreneurs	Develops entrepreneurial knowledge and skills supporting the self-actualization, self-efficacy and market acumen of artists and designers.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
HDA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	296	Creative Futures: Studio	Develops skills in creating fully realized design ideas and creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with the sequel course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Technological Leadership BS major OR Herberger Institute student OR Visiting University Student

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HDA	310	Socially Engaged Practice	Students gain a wide literacy in the community arts field through reading, discussion and technical practice. Examines theories and techniques of community-based project development. Pairs artists with communities to create art rooted in the needs, values, desires, triumphs and challenges of that community. Helps prepare the artist of the 21st century with skills to apply artistic practices in diverse contexts.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 42 hours; Credit is allowed for only HDA 310 or 494 (Public Practice: Engagement & Community)
HDA	311	Work:Cultural/Creative Industry	Introduces fundamental questions in the study of work and careers in the cultural and creative industries, including an overview of historical changes in the relationship between the individual and his or her work environment; comparisons between different types of work arrangements (part-time, freelance, internships); and practical implications for contemporary workers.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): minimum 45 hours
HDA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	397	Capstone Development	Prepares students for a successful capstone project. Students develop a formal proposal and identify a mentor for the project.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): The Arts BA major; minimum 56 hours
HDA	410	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 310; Credit is allowed for only HDA 410 or HDA 510
HDA	420	Design & the Arts Business Adm	Design and the arts business seminar course that covers core business principles for design or arts businesses such as human resources, legal issues, accounting and finance. Asks with each of these areas how these disciplines uniquely work within design or arts settings. Investigates global business topics and discusses why ethics is integral to every design or arts business enterprise. Provides a broad understanding of design or arts business activities and practices, allowing more effective participation in business discussions in the future.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 45 hours; Credit is allowed for only HDA 420 or 494 (Design & the Arts Bus Admin)
HDA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		
HDA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	496	Creative Futures: Adv. Studio	Develops advanced skills in creating fully realized design ideas and leading creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with a prerequisite course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3-6		Prerequisite(s): Technological Leadership BS major or Herberger Institute student; HDA 296 completed two times with C or better OR HDA 296 with C or better; AME 240 with C or better
HDA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HDA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-3		
HDA	510	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HDA 410 or HDA 510
HDA	511	Purpose, Collab & Accountability	Help students identify their personal purpose and how that connects to arts, culture, design and cross-sectoral work. Also builds capacity for arts and design-based modalities of collaboration that unite people across sectors, art forms, and institutional systems. Addresses hybrid business models, creative facilitation skills, deep listening, co-designing processes and projects, while analyzing the ethics of work aimed at public good outcomes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HDA	512	Proposal Development	Students create a draft proposal for their culminating applied projects, research their chosen topic, make a case for how the project intersects with a gap in the field, and learn how to pitch ideas.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-2		Prerequisite(s): Creative Enterprise and Cultural Leadership MA student
HDA	513	Applied Rsrch & Eval Methods	Working on a real-world project related to art and design in collaboration with a field partner, students learn to construct robust research questions and identify appropriate methods to pursue an area of inquiry. Introduces principles of equitable evaluation and research to prepare students to understand how their work in the broad art and design fields engages with and impacts communities. Explores various methods including qualitative interviews, focus groups, observation and design thinking approaches. Emphasizes understanding how art and design intersect with the converging contexts of place and community, field and discipline, economy and policy.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	514	Creativity & Impact for Change	Art and design work, organizational structures, and collaboration opportunities are expanding. Disrupts frameworks of art and design work to introduce pressing questions and new ways of working aimed at more effective and sustainable engagement with other sectors. Organized around five core themes: context/equity, cross-sector work, changemaking and leadership, structures of work, evaluation and accountability. Discussion is tied to pressing current issues through regular engagements with local and national field leaders, ASU faculty and National Accelerator for Cultural Innovation fellows.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Creative Enterprise and Cultural Leadership MA student
HDA	521	Counting Arts & Culture	Builds understanding of economic concepts as applied to the arts and culture sector, with specific attention to how art and culture enterprises work as businesses, how such enterprises function in our wider economic system, which are growing and which disappearing (and why), all toward the goal of building the student's capacity to lead arts and culture enterprise in a complex economic environment.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	522	Media Literacy, Distribution	Addresses the impact that digital distribution has had on traditional media business models and the way media and our culture are changing because of it. Also looks at the way in which industries are adapting to this change in the media landscape. Three distinct sections: content literacy, production and distribution metrics, economic and cultural implications.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		LEC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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HDA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HEB	101	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
HEB	102	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 101 with C or better OR Visiting University Student
HEB	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
HEB	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
HEB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	201	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 102 with C or better OR Visiting University Student
HEB	202	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 201 with C or better
HEB	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
HEB	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
HEB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	313	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): HEB 202 with C or better OR Visiting University Student
HEB	314	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in Modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: HEB 202
HEB	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student

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HEB	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
HEB	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
HEB	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
HEB	375	Contemporary Culture of Israel	Intense study of aspects of historical, social, political, and cultural modern life in Israel. Beginning of Zionism to present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
HEB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
HEB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
HEB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
HED	510	Intro to Higher Education	Overview of American higher education, including philosophical, political, and social aspects.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	527	Seminar: Student Affairs Admin	Organizational models, administrative competencies and skills, and emerging challenges of student affairs administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	573	Applied Inquiry in Higher Ed	Provides an overview of research, evaluation and assessment practices in higher education and strategies for utilizing these practices as professionals in higher education. Focuses on learning about and demystifying the process of scientific inquiry, with the intent of translating that knowledge to regular practice in a higher education professional career. It is not a highly technical methods course--no advanced knowledge of statistics or qualitative techniques is assumed--but instead gives practitioners a foundation in educational research design as well as the tools to be literate, thoughtful, critical and frequent consumers of research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MEd Higher and PostSecondary Education major. Credit is allowed for only HED 573 or HED 591 (Applied Inquiry)

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HED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	603	Foundation of Data Analytics	How decisions are made in higher education and how data and analytics can support university leaders.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	604	Analytics Process & Technology	Process and technology used to facilitate data-informed decision making in higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	605	Data Management & Preparation	Data preparation and management for data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	606	Advanced Analytic Methods	Advanced analytic methods, including data mining, in support of data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	607	Visualization and Presentation	Principles of effective presentation and visualization of data for exploratory, predictive and persuasive purposes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	608	Trends Advncd Analytic Methods	Emerging advanced analytic method in use within higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	620	Diversity in Higher Education	Overview of the demographic profile of college students, faculty, and staff. Addresses issues of access, retention, and development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	634	The American Community College	Philosophy, history, curriculum, faculty, students, organization, financing, research, policy and current issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	644	Higher Educ Finance/Budgeting	Financial planning and budgeting in higher education institutions. Issues related to financing public and private colleges and universities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	649	Law & Policy in Higher Ed	Analyzes legal issues related to higher education; examines key court decisions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	679	The American College Student	Overview of American college student from demographic, background characteristics, and values/attitudes/perspectives. Includes access, persistence, and degree completion.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	688	Organizational Theory	Major views of organizations and their influence on role definition and participant behaviors in educational organization.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	689	Leadership in Higher Education	Theory and practice of leadership and administration in higher education institutions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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HEP	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
HEP	102	Foundations of HEHP	Foundational course for those who anticipate working in the health field. Learners gain a broad understanding of historical, cultural and philosophical underpinnings of health promotion. They refine necessary skills for working as health professionals, including effective researching, writing and critical thinking. Explores principles of a preventive approach to health and wellness. Introduces the importance of evidence-based practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HEP	241	Hlth Ed Injury Prevntn & Prep	Unintentional injuries affect people throughout the lifespan. Examining factors that influence injury helps to determine effective education and prevention efforts. Explores strategies for preventing unintentional injuries for adults and children. Examines topics in injury prevention for the development of health promotion resources and practices in the following settings: home, sports, recreational and transportation. Also includes emergency preparedness education focused on helping people prevent and mitigate the effects of emergency/unforeseen incidents at the individual, family and community levels. Specifically, explores the CDC Crisis & Emergency Risk Communication (CERC) program as a tool for developing effective communication strategies regarding emergency situations.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HEP	251	Preventing HIV&Substance Abuse	Provides an introductory examination of Human Immunodeficiency Virus (HIV), substance abuse and addiction. Explores health education and promotion approaches to preventing both HIV and substance abuse and examines the biological, historical and societal implications of these diseases. Prepares learners to deliver HIV and substance abuse prevention education.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 351 or HEP 251 (or EXW 312) OR Visiting University Student
HEP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	303	Human Sexuality for Health Ed	Provides preprofessional primary/secondary teachers and health education specialists with knowledge of the physiological, psychological and social aspects of human sexuality for health education. Provides content knowledge and curriculum development strategies to support educators in creating human sexuality curriculum for school and community health settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	348	Methods of Health Education	Covers how to develop sound, effective, appropriate instruction and learner experiences utilizing backwards planning, formative and summative assessment methods, educational psychology, and appropriate instructional methods to facilitate the mastery of health-related knowledge, skills, attitudes and behaviors in health education and health promotion. Focuses on understanding best practice pedagogy and the diverse learner; structuring the learning environment; developing appropriate student learning objectives; selecting appropriate instructional methods; and developing a quality lesson, assessments, presentation and unit plan.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	350	Substance Abuse&Addict Behav	Examines substance use and abuse patterns throughout the U.S. Explores regional trends, historical influences and policy impacts. Presents effective prevention and intervention practices. Emphasizes the importance of reducing stigma associated with substance use. Learners engage in scientific inquiry and research.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better OR Visiting University Student
HEP	361	Soc Media & Market for Health	Research suggests that social media and social marketing strategies are effective tools for public health education and promotion. Learners explore social marketing practices, examine the impact of social media messaging on health, create health education messages and content, and develop a social media campaign for a specific health or wellness topic. Get ready to use social media technology to promote health and wellness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361) OR Visiting University Student

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HEP	371	Conflict & Violence Prevention	Explores conflict mediation and violence prevention interventions. Prepares students to address conflict, deal effectively with difficult people, and incorporate effective conflict management and mediation skills in various personal and professional settings. Examines and applies principles of the public health approach of violence prevention programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)
HEP	380	Body Image and Wellness	Explores body image in American culture from physical, psychological, historical, and societal perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HEP	384	Preinternship for HEHP	Professional development course designed to help students prepare for senior-year experiential learning courses: internships and applied projects. Facilitates strengthening of interpersonal competencies and professional self-marketing through resume development, communication and networking. Prepares students for either the Internship or the Applied Projects course through Internship Learning Agreement or Applied Project Proposal documentation, respectively.	N	LEC	N	YGB	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions major; minimum 75 hours
HEP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	410	Obesity Persp and Prescrip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. Explores topics: the obesity epidemic; health consequences of obesity; fitness and fatness; etiology of weight gain; health implications of weight loss; psychological, cultural, social and political considerations of obesity; and a review of the application of prevention and treatment of obesity. Examines a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 202 with C or better; PSY 101 with C or better; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410) OR Visiting University Student
HEP	443	Emotional Hlth & Intrprsnl Rel	Explores factors associated with the development of emotional health and well being. Emphasizes pre-professional primary/secondary teachers and health education specialists teaching and promoting emotional health within a school or community setting. Encourages pre-professional primary/secondary teachers and health education specialists to deepen their commitment to effective curriculum principles related to emotional health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	444	Epidemiology	Introduces epidemiological concepts and prepares the student to read, comprehend, and report epidemiological research.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): any CS statistics course with C or better; Credit is allowed for only HEP 444 or POP 598 (Epidemiology) OR Visiting University Student
HEP	448	Foundations of School HED	Illustrates health education in K-12 and post-secondary educational settings. Explores various resources for health education specialists, including the CDC's Division of Adolescent and School Health, the School Health Index, the Health Education Curriculum Analysis Tool, and the Coordinated School Health Approach.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HEP	452	Hlth Advcy in HED	Learn how to make change happen to improve health for individuals and communities. Identifies and discusses features of coalitions and partnerships that support advocacy and policy change. Describes and applies methods and resources for advocating in health promotion, including photovoice, positive deviance and digital advocacy. Outlines and practices key strategies for communicating with diverse audiences. Introduces a strengths-based, community-led paradigm for generating systems change.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
HEP	454	Health Promotion Plan and Impl	Applies theory-based concepts and methods of health promotion (HP). Covers selected topics in HP across a variety of domains of health. Program planning concepts include the use of planning frameworks, needs assessments, and the use of theory in health promotion program planning. Also covers practical issues related to health promotion program implementation such as resource management and program marketing.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): CHS 340 (EXW 340) or EXW 342 with C or better; ENG 101, 105, or 107 with C or better; EXW 101 or HEP 102 (EXW 102) with C or better; Credit is allowed for only EXW 554 or HEP 454 (EXW 454) OR Visiting University Student

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HEP	456	Health Promotion Program Eval	Covers program evaluation concepts including how to plan an evaluation, how to analyze and interpret data, and how to report evaluation results. Students learn a basic framework for conducting a program evaluation, various research/evaluation designs, and data analysis and statistics. Topics are covered in enough detail so that the student may understand how inferences are made regarding program evaluation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre- or corequisite(s): HEP 454 (EXW 454); Credit is allowed for only EXW 556 or EXW 598 (Program Evaluation) or HEP 456 (EXW 456) OR Visiting University Student
HEP	466	Health Prom Mgmt and Admin	Uses team and individual processes to build knowledge and skills for managing and administering health education/promotion programs. Emphasizes management perspectives, professional skill development and demonstrating leadership; performing team collaboration roles; managing human and financial program resources; and developing collaborative research. Aligned with specific competencies and objectives required for Certified Health Education Specialists (CHES) offered by the National Commission for Health Education Credentialing (NCHEC).	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	476	Community Health	Applies major concepts of community health with an emphasis on contextual tailoring. Defines and explores the community science paradigm. Defines and applies cultural competence. Presents features and current trends for health and health care in the U.S., including key policies, family health, minority health and environmental influences. Reinforces the commitment to evidence-based practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): HEP 454 (EXW 454) with C or better OR Visiting University Student
HEP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HEP	486	Applied Projects in HEHP	Provides an opportunity for self-directed, structured practice in health education and health promotion with faculty support and supervision. Students develop and/or implement a health education and health promotion project of their own design, based on self-identified interests and long-term career plans. Applies specific competencies of health education specialists, preparing students to enter the workforce as confident and practiced health professionals. Requires permission to enroll from the course instructor, based on approval of the applied project proposal prepared during the preinternship course.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): HEP 384; HEP 452 (EXW 452); HEP 454 (EXW 454) OR Visiting University Student
HEP	490	CHES Exam Preparation	Prepares qualifying students for the Certified Health Education Specialist (CHES) examination offered by the National Commission for Health Education Credentialing. Provides a review of the Eight Areas of Responsibility for Certified Health Education Specialists. Increases knowledge of health education and health promotion concepts to prepare for the CHES examination.	N	LEC	N	YGB	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Community Health BS major or HEP 456; minimum 45 hours OR Visiting University Student
HEP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HEP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HEP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HHE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HHE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
HIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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HON	171	The Human Event	Landmarks in the social and intellectual development of the human race, with emphasis on critical thinking and argumentative writing. Enrollment restricted to Barrett students.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; maximum 75 hours
HON	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student
HON	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; maximum 60 hours
HON	272	The Human Event	Covers the Renaissance through the modern period.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	(L or HU) & H	Prerequisite(s): HON 171 with C or better
HON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
HON	370	History of Ideas	Advanced and intensive survey of key social and intellectual currents in the development of humanity as reflected in both philosophical and creative works with an emphasis on critical thinking and discussion, as well as argumentative writing.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; Credit is allowed for only HON 171 or HON 272 or HON 370
HON	378	Culture/Soc England, Ire, Scot	Chronologically explores texts, events, and sites for historical and cultural impact on development of England, Ireland, Scotland, and their countries' relationships with each other.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & H & G	Prerequisite(s): Barrett Honors student
HON	379	Romantics, Victorians, Moderns	Examines the development and impact of various literatures, arts, and ideas in England, Ireland, and Scotland from the Romantic through the Modern period.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & G	Prerequisite(s): Barrett Honors student
HON	380	Aesthetics and Society	Advanced, interdisciplinary seminar explores the unique roles of aesthetics in society through philosophy, cultural studies, art, music, literature, film, and/or other media forms, with themes such as the politics of beauty, art and emotion, or creative production and reception.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	HU	Prerequisite(s): Barrett Honors student; HON 171; HON 272 (or HON 273 or 274) or HON 370 or HON 394 (History of Ideas); Credit is allowed for only HON 380 or HON 394 (Aesthetics and Society)
HON	381	Science and Social Worlds	Advanced multidisciplinary seminar examining the historical, cultural and political roles of science in society, including the politics of scientific knowledge production, the ethics of new technologies, and philosophical approaches to the study of health and medicine.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 171 and 272 (or HON 370 or 394: History of Ideas; Credit is allowed for only HON 381 or 394: Science and the Self
HON	386	Writing about Self and Place	Cultural curiosity and literary expression align in intellectually provocative ways that deepen our understanding of the interplay between self and place. Examines the ways in which conceptions of individual and national identity and cultural environments inform each other. Students read and analyze modern travel writing to learn literary strategies that they then employ when reflecting upon and documenting their experiences as individuals studying the culture of a place. Learning activities include engaging with a variety of creative nonfiction writing and creating personal narratives.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 370 OR both HON 171 and 172; Credit is allowed for only HON 386 or HON 394 (Identity and Place) or HON 394 (Writing about Self and Place)
HON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; minimum 30 hours
HON	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 with C or better OR non-Business student with minimum ASU 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch)
HON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	0-12		Prerequisite(s): Barrett Honors student
HON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; minimum 75 hours
HON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; minimum 45 hours
HON	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-7	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student

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HPS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	311	Origins, Evolution, Creation	History of opposition to evolutionary thinking with special reference to American creationism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is only allowed for BIO 344 or HPS 311
HPS	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
HPS	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
HPS	322	History of Science I	Development and application of scientific thinking from ancient times through the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 328 or HPS 322 OR Visiting University Student
HPS	323	History of Science II	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student
HPS	330	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
HPS	331	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
HPS	332	The Darwinian Revolution	Origin, nature, and subsequent history of the ideas of Charles Darwin.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
HPS	336	Exploration and Science	500-year survey of exploration as a historical process and cultural activity of Western civilization, with emphasis on its links with modern science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB & H	
HPS	340	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student
HPS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
HPS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	410	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only BIO 416 or HPS 410 OR Visiting University Student
HPS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
HPS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
HPS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HPS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Pre-requisite: Junior or senior standing
HPS	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
HPS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		

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HPS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
HPS	516	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518, HPS or HST 516
HPS	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HPS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
HPS	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 620 or BIO 620
HPS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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HPS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HRC	200	Intro:Social/Cultural Analysis	Introduces social and cultural analysis. Focuses on key terms and analytical categories for interdisciplinary work in social and cultural analysis and related fields such as American studies, ethnic studies, women and gender studies and Latin American studies. Examines a range of forms of oppression and privilege from a social justice perspective.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	
HRC	310	Social & Cultural Stds/Theory	Covers how scholars in social and cultural studies think, argue, research and write. Traces the changing definition of fields such as American studies, ethnic studies, and women and gender studies. Studies these fields in relationship to 20th-century social movements and related theoretical categories including Marxism, cultural studies and class; feminism, gender and sexuality; and post-Colonialism, race and ethnicity. Covers basic archival and ethnographic research techniques underlying interdisciplinary research methods in these fields.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 36 hours OR Visiting University Student
HRC	480	Capstone: Practices/Approaches	Examines theoretical, methodological and epistemological issues in American studies, women and gender studies, and ethnic studies. Studies a wide variety of interdisciplinary theories, methodologies and epistemologies from an intersectional analysis of race, class, gender and sexuality in national and transnational contexts. Places special emphasis on historical definitions and debates on the relationship among theory, activism and praxis.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): AMS 201 or ETH 100 or HRC 200 or WST 100; ENG 101, 105, or 107 with C or better
HRC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
HRC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HRC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
HSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	210	Cultural Aspects Health	Examines how culture influences health, health care practices, barriers to health care, interactions with health care professionals, and health disparities in the U.S. Addresses the need for cultural competence among health practitioners.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	C	
HSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	300	Complementary Health Care	Evaluates the major components of complementary and alternative health care models and evidenced-based recommendations related to complementary health care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
HSC	310	Health Communication	Focuses on communicating topics related to health through an examination of theoretical frameworks, communication techniques, and different technologies including ehealth and mhealth. Addresses communication through channels that promote the health of individuals and communities. Topics may include clinician to client communication, peer to peer communication, health literacy, health in the media, and effective public health communication.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HSC	340	Changing Health Behaviors	Comprehensive review of the theoretical bases of health behavior change. Students gain the knowledge to identify behaviors associated with optimal health and wellness and to develop theory-based intervention strategies and techniques to effectively influence behavior change.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prereq(s): Comm Hlth or Exer & Wellness or Hlth Sci or Hlth Sci (Hlthy Lifestyles Coach) BS major or Hlth Wellness Coach cert stdnt; min 30 hrs; Credit allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student

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HSC	355	Eating for Lifelong Health	Examines dietary choices throughout the life span and how they impact personal health and wellness. Raises awareness of thoughts and behaviors related to food and physical activity. Recognizes potential behavioral and social factors that impact participation in wellness programs. Evaluates the accuracy of consumer materials related to nutrition and wellness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
HSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	400	Practicum in Health Sciences	Supervised experience in area of student specialization. Students are placed with an agency, organization, business, and/or facility that meets their specific academic goals.	N	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Sciences Senior student
HSC	410	Support Health Older Adults	Focuses on community and national policies and programs that affect the health of older adults, programs to improve access to health care as well as to improve overall health, issues related to family and professional caregiving, and future challenges related to caring for older adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HSC	412	Health Issues in Later Life	Focuses on health issues that primarily affect adults ages 50 years and over as related to nutrition, physical activity, environmental toxins. Focuses on exploring those factors known to promote healthy aging.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HSC	420	Eval Health Sci Res	Investigates methods of inquiry in health sciences and techniques for critiquing and interpreting research within the context of evidence-based practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): POS 401 (or PSY 230 or 231 or SOC 390 or STP 226 or 231 or 420) OR Medical Studies major with HCD 300 (or HSC 320)
HSC	432	Legal Issues in Health Care	Legal doctrines provide protection of consumers, health care providers, and health care institutions with regard to health care delivery including access and cost. Provides an overview of the legal obligation and rights of private and public stakeholders in the delivery and receipt of health care services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSC	440	Health Coaching	Health coaching techniques and skills for health promotion professionals with emphasis on the practical application of brief intervention and motivational interviewing skills to promote healthy lifestyle changes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 (EXW 340), EXW 342, HSC 340, or NTR 350; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills) OR Visiting University Student
HSC	441	Health Coaching Techniques	Complements previously learned coaching theory, skills and techniques related to guiding individuals and groups through meaningful lifestyle changes by emphasizing the use of evidence-based coaching approaches. Using a mentor, self-assessment and peer feedback model, students practice, compare and contrast diverse coaching methodologies emphasizing motivational interviewing techniques and cultivating their coaching voice. Students are assigned coaching clients, schedule coaching sessions, follow-up with clients, practice professional boundaries setting, become acquainted with ethical issues and referral processes, and validate their knowledge and skills when working with people with chronic disease who require lifestyle management strategies to improve their conditions. Program faculty provide mentorship and feedback regarding student's coaching performance.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): HSC 440; Pre- or corequisite(s): EXW 325 or 335; EXW 344; HSC 355 (or NTR 355); NTR 241 OR Visiting University Student
HSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; senior standing
HSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HSC	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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HSD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
HSD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	501	Science & Technology Policy	Covers the role and nature of science and technology in democratic societies, and how policy impacts their development, use and potential risks and benefits. Addresses the history of science and technology policy in the U.S. and how science-based research and innovation are integrated into the design and implementation of government decision making. Students study the history and actions leading to the formation of a science and technology-related policy of their choice. Drawing on multiple areas of expertise, the course emphasizes the need for novel yet informed approaches to science and technology policy in today's rapidly changing world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	502	Adv Science & Technology Policy	Explores innovation systems; the relationship between science and technology policy, equity and equality; the theory and practice of policy implementation; the utility of public value mapping; and the nature of technological fixes. Begins to explore the policy challenges and opportunities presented by emerging and converging technologies, and a changing governance and geopolitical landscape. Students study the implementation of a specific previously selected science and technology policy. Brings a transdisciplinary approach to science and technology policy that is uniquely relevant to today's increasingly technologically complex world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): HSD 501 with B or better
HSD	503	Governing Emerging Technologie	Examines the governance of science and technology through a focus on emerging technologies whose potential consequences in society are apparent only in anticipation and whose manifestations are still being shaped by local, domestic, and international institutions. These emerging technologies include nanotechnologies, synthetic biology, and other technologies associated with genetic modification, and information and cognitive science and neuro-technologies.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	504	Socio-Technological Systems	Provide skills and methods to analyze the design and management of large-scale socio-technological systems and the societal impacts of large-scale technological systems change. Emphasizes assessing the intertwining of lives and livelihoods in large-scale technological systems and the risks and vulnerabilities associated with large-scale systems failures, including the effects of both technological failures and natural hazards.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	505	Sci & Tech Policy Workshop	Provides the capstone experience for the Professional Science Master's in Science and Technology Policy. Builds on theoretical and analytical work carried out in the program's required courses, providing an integrative experience that requires students to synthesize knowledge gained in prior coursework and apply it to real-world policy problems and settings. By blending exposure to national science and technology policy officials and nationally recognized academic experts, the workshop both advances student learning beyond that possible in the classroom while encouraging students to expand their abilities to connect theoretical and practical insights. At the same time, the workshop provides a natural transition from the student's formal classroom learning to their required applied policy internships, which commences upon the end of the workshop.	N	SEM	N	YGB	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	512	Solar Energy Policy Workshop	Successful and rapid development of solar energy requires the training of a highly skilled technical workforce that is also well versed in the socioeconomic (e.g., social, economic, behavioral, policy) and commercial aspects of solar energy. Provides practical policy experience. Explores the relationships among science, policy and societal outcomes in a place where many important decisions about these things are made: Washington, D.C. During the one-week course, students meet and interact with the people who fund, regulate, shape, critique, publicize and study solar energy and science, including congressional staffers, funding agency officers, lobbyists, regulators, journalists, academics, museum curators, and others.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): Solar Energy Engineering and Commercialization PSM student; Credit is allowed for only HSD 512 or HSD 594 (Solar Energy Policy Workshop)
HSD	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
HSD	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
HSD	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HSD	521	WrtingTrue Stories That Matter	Researchers, policy wonks, grant writers, program managers, aspiring politicians, decision makers and writers of all ages: Everyone needs to know how to find and write a strong, effective, true story. This course helps students and professionals transform research, experiences and ideas into compelling nonfiction narratives so that readers are both educated and entertained. In this semester-long workshop, the instructor proceeds, step-by-step, through the entire writing true stories process, from finding the story to recreating scenes and building a scene-by-scene structure that is informative and cogent. Participants learn how to read with a writer's eye and recognize and utilize structural patterns. Explains, illustrates and practices literary techniques like dialogue, flash descriptions, inner point of view, and the art of imbedding information in story.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSD 521 or COM 598 (Writing True Stories That Matter: Creative Nonfic) or HSD 598 (Writing True Stories That Matter: Creative Nonfic)
HSD	540	Responsible Innovation & Rsrch	Movements throughout Europe and increasingly the U.S. are beginning to consolidate the recognition of the profound effects that research outcomes have upon the world under the idea of responsible innovation and research. The responsible innovation and research pushes beyond the responsibilities of the individual researchers and addresses larger issues such as research agenda setting, management of large-scale research and innovation enterprises, funding priorities and innovation as a national policy priority. Explores the idea of innovation as a national policy, the practical and theoretical underpinnings of responsibility in the research world; the history, current state and future trajectories of responsible research and innovation. Focuses on the current literature in the field.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		
HSD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	601	HSD I:Human Dimension Sci Tech	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	602	HSD II:Science Power&Politics	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	610	Colloquium	Regular meeting for the entire HSDST community. Includes outside speakers, student and faculty member presentations, and community discussions.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	101	Human Systems Engineering	Introduces basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems. Gives particular attention to the intersection of psychology and engineering. Students learn brain anatomy and physiology, sensation and perception, cognition, social systems and research methods so that they are able to design systems consistent with human capabilities and limitations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	
HSE	223	Applied Biology Human Behavior	Introduces the biological basis of human behavior and implications for human systems engineering. Structure and function of the nervous system as well as the behavioral effects of the physiological processes outside the brain (for example, hormones secreted by glands). Biological processes involved in many aspects of our behavior such as eating, sleeping, sexual behavior, emotional responses, sensory perception, learning and memory, language and cognitive functions, mental illness and drug abuses. Introduces a wide range of techniques and methods used to investigate the biological foundations of behavior. Prepares students for advanced courses in neuroscience, psychology or related fields.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	224	Applied Social Science	Covers social behaviors, social cognition and emotion critical for engineered systems that interact with humans (artificial intelligence, robots). Students learn how human beings behave, think and feel in daily social situations and think about how that information can be used to create effective human systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	225	Human Systems Integration	Reviews human systems integration (HSI), which is basically systems engineering from a human-centered perspective. Research, theory and methodological approach as applied to a variety of systems ranging from transportation systems to medical and military systems. Discusses handbook chapters and specific examples of human systems integration.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	230	Stats Human Systems Rsrch I	Basic methods of exploratory data analysis (including graphics) and statistical computing methods, including a detailed look at hypothesis testing, effect size and power analysis, as well as some methods for dealing with categorical and discrete data. Introduces both correlation/regression and analysis of variance (ANOVA), as well as common statistical software.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 101 or PSY 101 with C or better; MAT 117 or higher with C or better OR Visiting University Student
HSE	290	Exp Method Human Systems Rsrch	Introduces the basics of research methodology as applied in human systems engineering. Quantitative and experimental design from an applied perspective. Guided study of the process of conducting research within human systems engineering. Project topics range from research question generation and literature review to reporting of results.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; HSE 230 or PSY 230 with C or better OR Visiting University Student
HSE	323	Perceptual Systems	In-depth exploration of methods by which humans receive and interpret information from the world by vision, audition, taste, smell, touch and movement. Emphasizes the integration of behavioral and neural research with potential applications to engineering practice. Topics cover a wide range from the biological basis of sensory information processing to the behavioral aspects of perception, and to the applications of perceptual theories to disciplines like computer vision, display technologies, graphic design and sound processing. Solid foundation for further coursework and research in neuroscience or psychology; students also gain knowledge that could be useful in various professions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing
HSE	324	Applied Cognitive Science	Human cognition and how it bears on the design of technological and social systems. Although focuses on applications, requires student to delve into the basic literature that informs these applications and produce a literature review that draws on both applied and theoretical work. Many weeks involve a hands-on experience with a method or technique, and weekly quizzes emphasize critical thinking about these examples.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	325	Human-Computer Interaction	Theories, methods, and findings concerning the usability of computer systems and the design of effective user interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Enroll	Mult Primary	Component	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
HSE	390	Qualitative Research Methods	Reviews basics of qualitative research with applications to human systems engineering. Covers fundamental concepts of reliability and validity, and considers best practices in survey, questionnaire, interview and observation methods. Introduces and applies content analysis and grounded theory approaches for analyzing and interpreting qualitative data (e.g., interview transcripts and open-ended survey responses). All concepts are taught with an applied focus and real-world examples.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; HSE 290 or PSY 290 with C or better OR Visiting University Student
HSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours
HSE	422	Human Factors in Sport	Examines how psychological principles can be applied to enhance the performance of athletes and coaches.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	423	Human Factors/Transportation	Examines human performance and human-machine design issues in aviation and ground transportation.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	424	Human Automation Interaction	Current perspectives and techniques for modeling human-automation interaction to improve system design and system integration. Topics discussed include basic principles in human-technology interaction, key concepts to consider when designing and assessing supervisory control automation, and promising approaches for integrating increasingly autonomous automation, such as adaptive algorithms and embodied agents, into human systems.	N		SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing; Credit is allowed for only HSE 424 or HSE 524 OR Visiting University Student
HSE	425	Human Factors in Med Systems	Comprehensive introduction to human factors issues related to healthcare systems, medical training, and medical device design. Topics range from psychological and physiological aspects of human behavior like perceptual and cognitive functions, motor behavior, learning, motivation, physiology, and ergonomics to applied issues in the context of medicine and healthcare like human-computer interactions in medical information systems, the ergonomic design of medical devices, evaluation of medical device usability, team training in healthcare and the organization of medical environment.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing; Credit is allowed for only HSE 425 or HSE 525 OR Visiting University Student
HSE	426	Training and Expertise	Reviews principles and features of expertise and the acquisition of skilled performance, such as knowledge, deliberate practice, self-regulation, feedback and training. Discusses and applies methods of evaluating expert performance (e.g., cognitive task analysis) and designing effective training systems.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	427	Designing for Learning	Reviews principles of learning with applications to human systems engineering. Covers fundamental cognitive, metacognitive and motivational aspects of learning, and their applications in instructional design frameworks. Applies concepts to the design of multimedia instruction, educational technologies and similar learning resources.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	428	Judgment and Decision Making	Reviews basic principles of human judgment and decision making with applications to human systems engineering. Covers "intuitive" vs. "rational" ways of thinking, heuristics and common biases (e.g., correspondence bias, self-serving bias). Also covers examples of effective thinking such as intelligence, creativity, transfer and relational reasoning. All concepts are taught with an applied focus.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	429	Product Design and Evaluation	Applies human systems engineering methods to product design and evaluation. Consumer behavior, consumer research methods, systems and design thinking, how to conduct interviews, observational research, contextual analysis, questionnaire design and analysis, opportunity identification, usability testing and creativity.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student

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HSE	430	Stats Human Sys Research II	Statistical methods commonly used in human systems engineering research. Emphasizes (1) connecting research designs and statistical analysis, (2) interpreting and breaking down significant effects, (3) addressing practical problems associated with doing research in applied contexts, (4) using statistical methods to understand the connection between variables in a complex system, and (5) the use of statistical software. Primarily focuses on analysis of variance (ANOVA) but introduces other techniques (including mediation analysis, structural equation modeling and cluster analysis). Recommended for preparation for both graduate study and careers in related industry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 230 or PSY 230 or PSY 231; Credit is allowed for only HSE 430 or PSY 530 OR Visiting University Student
HSE	477	Human Systems Engr Capstone	Applied psychology from a systems perspective. Requires a report based on research and/or applied work as a culminating experience.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): Human Systems Engineering major; senior standing; Pre- or corequisite(s): HSE 290 or PSY 290; HSE 324 or PSY 324
HSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		
HSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6		Prerequisite(s): Barrett Honors student
HSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-3		
HSE	520	Methods Tools App Cognitiv Sci	Provides a hands-on approach to understanding and using advanced methodologies commonly implemented in the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	521	Methods & Tools Human Sys Engr	Specific methods and tools used in the field of human systems engineering, with computer-based experience through both writing and using human factors tools and software.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	524	Human Automation Interaction	Covers different perspectives and techniques for improving automation design and system integration. Covers basic principles in human-technology interaction, key concepts in supervisory control automation, and promising approaches for increasingly autonomous automation such as adaptive algorithms and embodied agents (robots). Emphasizes literature review, concept synthesis and communication skills through writing, in-class presentations and in-class discussion.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 424 or HSE 524
HSE	525	Health & Human Systems Eng	Covers different perspectives and techniques in medical human factors and health systems engineering to improve system design and system integration in healthcare. Covers basic principles in human-technology interaction, macroergonomics, and job design in the context of healthcare, health organizations, and health technologies. Emphasizes synthesis of reading materials, problem scoping and communication skills through writing and discussion.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 425 or HSE 525
HSE	530	Intermed Stats Human Sys Engr	One-way and factorial designs, contrasts, post-hoc tests, probing of interactions, mixed designs, power, computer applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or PSY 530
HSE	531	Data Analytics	Principles and methods of analyzing human subjects data. Improves analytical and communication skills for scientific research; acquires and develops skills in using the open-source statistical computing platform R; and builds confidence in wrangling, analyzing and visualizing human subjects data.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 531 or HSE 598 (Data Analytics)
HSE	540	Found Applied Cognitive Scienc	Provides a critical background in the theory and organization of the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	542	Foundations Human Sys Engr	A wide variety of methodologies utilized by and applications of the broad field of human systems engineering.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSE	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
HSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	502	Business of Health Care	Acquaints students with the various organizations and actors across the value chain of health care. Assesses provider, supplier, payor and IT multiple perspectives. Exposes the major concepts needed to understand the health sector globally (key business and clinical functions). Students emerge being able to be dropped down into a conversation about a health care company or problem and understand a large proportion of what is being discussed.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	506	Managing Health Care Orgs	Examines the dynamics within health care organizations. Provides a deep-dive into the best practices and key considerations for health care managers as they seek to operate within and modify their organizations. Employing concepts from organizational behavior and systems theory, provides students with a framework to define and resolve operational challenges associated with the management of a health care organization. Asks students to think as senior manager or consultants and propose solutions that are evidence based, feasible and demonstrate knowledge of the key contingencies associated with the context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student

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HSM	512	Healthcare Economics	Economics of production and distribution of healthcare services, with special emphasis on the impact of regulation, competition, and economic incentives.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): HSM 502 with C or better
HSM	550	Health Care Marketing	Marketing is a set of processes, relationships and co-creations meant to create, communicate and deliver value to the customer. Takes a customer-centric approach to health care marketing. Examines the changing roles in health care, organizations' approaches to patient-centricity, patient empowerment, responsibilities and experience. In addition, considers patient metrics such as patient engagement, customer effort, net promotion and patient satisfaction measures used by the U.S. government's Centers for Medicare and Medicaid Services. Considers marketing from the patient/provider, organizational and network/system points of view, organizational buying and selling processes, and the development and navigation of health care networks/systems from a marketing organization, service provider's and customer experience perspectives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	552	Supply Chains in Health Care	Examines the variety of organizations that constitute the health sector value chain with an emphasis on suppliers, distributors, IT intermediaries, group purchasing organizations, regulatory bodies, and payers. Key considerations include the design of stakeholder relationships along the value chain and the extent to which business and clinical considerations drive decision making and influence outcomes. Topics include strategic sourcing and contracting, stakeholder incentives and risk across the value chain, physician/professional perspectives and the management of the value chain relationships necessary to achieve high quality, ethical behavior and safe patient care.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSM 552 or HSM 598 (Healthcare Supply Chain Management)
HSM	575	Strategy in Health Care	Problems with health care quality, access and costs bedevil all countries. Focuses on the creation of global business innovations in health care that can better meet these needs. At its end, students should understand the opportunities for different kinds of health care innovations and how to create viable strategies and business models to meet them. Enables students to craft business models that attain alignment between an entrepreneurial health care venture and the Six Factors that shape this sector: financing, structure, public policy, consumers, technology and accountability. Covers these issues in every part of the sector, including insurance, services, IT, medical devices, biotechnology, diagnostics and pharmaceuticals.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	100	Global History to 1500	Surveys human origins; early civilizations in Africa and Eurasia; the ancient Mediterranean; the pre-Columbian Americas; the rise of Islam and Muslim empires; medieval Europe; the Indian sub-continent and imperial China, to 1500.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	
HST	101	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
HST	102	Ancient Mediterranean/Europe	Origins and development of European societies and institutions from the ancient world through the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	103	Early Modern Europe	The development of European societies and institutions from the Renaissance and Reformation through the Age of Enlightenment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	104	Modern Europe: French Rev-EU	The development of European societies and institutions from the French Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	106	Asian Civilizations	Civilizations of China, Japan, and India from antiquity to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	108	Introduction to Japan	Historical survey of the people, culture, politics, and economy of Japan, supplemented by audiovisual presentations. Intended for nonmajors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	
HST	109	United States to 1865	Growth of the Republic from colonial times through the Civil War period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	110	United States Since 1865	Growth of the Republic from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	

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HST	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST or REL 111
HST	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Credit is allowed for only HST, POS 112 or HST 194 (Foundations of Democracy)
HST	113	US and AZ Social Studies	Introduction to the United States and Arizona from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only GCU 113 or HST 113 or GCU 194 (US & AZ for Aspiring Elmtry Ed) OR Visiting University Student
HST	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Credit is allowed for only GCU or HST 114
HST	130	The Historian's Craft	Introduces the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
HST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
HST	203	Historical Theme Latin America	General introduction to selected themes in Latin American history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	204	Historical Themes in the US	General introduction to selected themes in United States history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
HST	210	American Social History	American society from the colonial period to the present. Ethnicity, race, age, and sex as factors in historical experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211
HST	214	World's Game:Hst & Ctr Soccer	Provides a survey of the cultural significance and global reach of soccer, both historically and in contemporary culture. Students study materials from around the world in several mediums; they view films that explore the cultural impact of the game; read literary works that focus on soccer; and engage with scholarly articles and contemporary news media dedicated to the game. Provides a comprehensive sense of the history, personalities, rivalries, fandom, and even the finances and scandals related to the world's game.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): Credit is allowed for only HST 214 or HST 294 (The Beautiful Game: History & Culture of Soccer) or SLC 214 or SLC 294 (The Beautiful Game: History & Culture of Soccer)
HST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
HST	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
HST	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
HST	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
HST	280	Hist Science Ideas Innovation	Fast-paced introduction to the intertwined histories of science, ideas and technological innovation, as they shape the globe from the ancients to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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HST	300	Veterans, Society and Service	Be part of this new field in veteran studies to create bridges among military, veteran and civilian cultures. Who are veterans? How and why do citizens become military service members and what is the experience of recruitment, training, service and transition to civilian life? How do we "read" a military uniform and differentiate the language and cultures of the five branches? How does military service lead or follow the nation in issues of class, gender, civil rights and LGBTQ? What are society's obligations to veterans and families as they transition through health care, higher education, employment and continued service?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student
HST	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
HST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
HST	303	Studies in Asian History	Specialized topics in Asian history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 303 or JST 303 OR Visiting University Student
HST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
HST	305	Studies in Latin Amer History	Specialized topics in Latin American history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student
HST	307	Studies in African History	Specialized topics in African history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	308	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
HST	309	Exploration and Empire	Surveys European discovery, exploration, and imperialism in the early modern and modern periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	310	Film as History	In-depth study of moving image media as recorder, object, and writer of history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	312	Hist of Women in Sci and Med	In-depth inquiry into the history of gender issues in Western science and medicine from Greco-Roman antiquity through the beginning of the 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	314	Am Cultural History Since 1865	Culture, including ideas, ideals, the arts, and social and economic standards, from the age of industrialism to modern U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only AMS 321 or HST 314 OR Visiting University Student
HST	315	Political History of the U. S.	American political history since independence, focusing post-1865. Evaluates major trends in issues, presidential leadership, elections, and state politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	316	20th-C U.S. Foreign Relations	U.S. relations with foreign powers from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student

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HST	318	History of Engineering	The history of engineering from the earliest record to modern times, examining the social, cultural, and economic effects on society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 45 hours OR Visiting University Student
HST	319	History of Aviation	The history of aviation, focusing on technical, political, economic, social and cultural aspects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only HST 319 or HST 306 (Aviation History) OR Visiting University Student
HST	320	U.S. Urban History since 1850	History of the city in American life from the mid-19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	321	Constitutional History to 1865	Origin and development of the American constitutional system from colonial period through the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	322	Constitution Hist/US Since1865	Development of the U.S. constitutional system from Reconstruction to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	
HST	323	Hstrcl Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
HST	325	Immigration & Ethnicity in US	Origins, historical development, and future of a multiethnic society, 1492 to 2050.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	326	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
HST	327	Women in US History 1600-1880	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	328	Women in US History, 1880-1980	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	329	Women in 20th-Century US West	Nuanced exploration of how women of various cultures have contended for and shaped the U.S. West, including the West of imagination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	330	Historical Thinking	Advanced examination of the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
HST	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student
HST	333	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
HST	334	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
HST	335	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302

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HST	336	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student
HST	337	Amer Indian History to 1900	Cultural, economic, political, and social continuity and change of American Indian communities to 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	338	Amer Indian History since 1900	Cultural, economic, political, and social continuity and change of American Indian communities from 1900 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	339	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
HST	340	American Military History	Studies the role of the military in American life during war and peace from colonial times to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	341	U.S. West 19th Century	Social, political, and economic development of the trans-Mississippi West, beginning with the Louisiana Purchase and ending in 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 341 or HIS 320
HST	342	US West 20th Century	Role of the western states in U.S. history since 1890 emphasizing politics, the environment, industry and labor, and ethnic minorities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	343	American Southwest	Development of the region from 1848 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	344	Arizona	Emergence of the state from early times to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	345	Environmental History	Examines the interaction between humans and the natural world in the United States from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better OR Visiting University Student
HST	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
HST	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
HST	348	Rome	History and civilization of Rome from the beginning of the Republic to the end of the Empire.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	349	Early Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 5th through 10th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	350	Later Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 11th through 15th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	351	Renaissance Europe	Culture of the Renaissance in Italy and Northern Europe from the 14th to the early 16th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	352	Europe's Reformations	Causes and implications of the major Protestant, Catholic, and Radical religious reformations in 16th- and 17th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	353	Old Regime in Europe	Society and culture of Europe during the 17th and 18th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	354	Revolutionary Europe	Political, social, economic, and intellectual currents in Europe from the French through the Russian Revolutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	355	Total War and Crisis-Modernity	Forces of change and instability in early 20th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	356	Europe since 1945	Europe in its world setting since World War II, emphasizing major political and social issues from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours

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HST	357	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391
HST	358	Jewish History from Antiquity	Continuity and change in political, legal, economic and sociocultural history of the Jews from ancient through medieval times.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	359	Jewish Hist from 1492 to 1948	Jewish history from early modern through modern times, highlighting emancipation, enlightenment, and Jewish responses to modernity.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	360	The Crusades	Examines the origins, the development, and the outcomes of the movement that we call "crusades" by connecting the military aspect of the crusades to broader developments. Focuses primarily, but not exclusively, on the period 1095-1453. Geographically covers chiefly the Mediterranean, and, to a lesser extent, northeastern Europe.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 360 or HST 394 (Crusades in the Middle Ages) OR Visiting University Student
HST	361	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
HST	362	Sex&Society-Classical&Med Euro	Family life, sex roles, and marriage, and their relationship to political, economic, and religious change in classical and medieval Europe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	363	Sex&Society-Early Mod Europe	Family life, sex roles, and marriage and their relationship to political, economic, and religious change in early modern Europe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	364	Sex & Society in Mod Europe	Family life, sex roles, and marriage, and their relationship to political, economic, and social changes in modern Europe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	365	WW I & II: Europe's East Front	In-depth study of the history of the Eastern Front in Europe in the two world wars.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105 or ENG 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 365 or HST 394 (WWI and WWII Eastern Front)
HST	366	England to 1689	In-depth examination of the political, economic, and social development of the English people to the late 17th century.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	367	Modern Britain	In-depth examination of the political, economic, and social development in Britain from 17th century to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	368	Culture & Imagination/Eur Hist	Topics in European cultural and intellectual history.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
HST	370	Eastern Europe in Transition	Democratization, privatization, and identity transformations since the fall of communism in contemporary Eastern Europe and the former Soviet Union.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
HST	372	Modern Middle East	In-depth examination of the effect of the West and modernization on Middle Eastern governments, religion, and society in the 19th and 20th centuries.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 24 hours OR Visiting University Student
HST	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373

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HST	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
HST	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
HST	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
HST	377	Sports in U.S. History	Focuses on major themes in American sports history, organized topically around fall sports. Themes encourage students to think critically about relationships among sport and society, identity, community, media, capitalism and education. Lectures, discussions, readings and films explore race, gender, class and sexuality as categories of analysis, and the role of sport in constructing ideas about the body along gender and racial lines. Also highlights social justice issues in sport as well as athlete activism throughout the twentieth century. Explores the ways in which the participation of Black, Latino/a and Native American athletes has both mirrored and diverged from Black, Latino/a and Native American citizens' participation in society throughout United States history. Also studies the process through which the equal opportunity to participate in school sports became defined as a civil right and, more recently, a human right.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 377 or HST 306 (Sports in U.S. History)
HST	379	History of College Sports	Student-controlled intercollegiate contests quickly transformed into big-time college sports by the early twentieth century, revolutionizing the sports industry in the United States as well as the landscape of higher education. The American college sports enterprise is unique; nowhere else in the world does a large, amateur, revenue-generating system of school sports exist. After an exploration of the origins of intercollegiate athletics and the creation of the modern National Collegiate Athletic Association, topics include integration, women's intercollegiate athletics, the big business of amateurism, and scandal. Video lectures, readings and films introduce students to these often controversial topics, grounding them in the historical record. Many of the current debates concerning college sports have been taking place for more than a century.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 379 or HST 306 (History of College Sports)
HST	380	Studies in History of Science	Major themes in the history of science with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	381	Studies in History of Ideas	Major themes in the history of ideas with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	382	History of Innovation Tech	Studies the development and impact of innovation processes and technology on society, culture, and environment throughout history. Specific themes and topics vary.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	383	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
HST	384	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student
HST	385	History of Chinese Medicine	Explores developments of Chinese traditions dealing with the natural world, science, and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 335 or HST 385 or SLC 335
HST	386	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336

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HST	387	Japan	Political, economic, social, and cultural history of the Japanese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	388	Japan	Political, economic, social, and cultural history of the Japanese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	389	Japan Society & Values/Premod	Effects of economic and social transitions on personal and social values as reflected in the dramatizations of contemporary events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
HST	391	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
HST	392	Modern India	In-depth study of modern India and its neighboring countries from the 18th century to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 392 or HST 303 (Modern South Asia) or HST 394 (Modern South Asia)
HST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	397	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
HST	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Álvar Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
HST	405	Colonial American Hist to 1763	Political, economic, social, and cultural history of the colonial era. Concentrates on English colonies, with some consideration of Spanish, French, and other colonial regions in North America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 55 hours
HST	406	American Revolution/1763-1789	Causes, course, and consequences of the American Revolution culminating in the ratification of the Constitution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	407	Early U.S. Republic/1789-1850	Political, social, economic, and cultural development of the United States from the Revolution to 1850.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	408	Civil War & Reconstruction	Explores the causes, conduct, and consequences of the American Civil War, concentrating on the years 1848 to 1877.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	409	Emergence Modern US 1877-1918	Triumph of modern political, social, and economic structures and values, 1877-1918; role of region, religion, race, and ethnicity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	412	Contemporary U.S., 1973-Present	End of the Cold War, political crises, and cultural transformations in the U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	413	Contemporary America	The United States from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student

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HST	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N		SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
HST	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419
HST	423	The Tudor Monarchy	Political, cultural, and social foundations of 16th-century England.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	424	The Stuart Monarchy	Political, social, economic, and cultural developments in 17th-century England.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	426	The British Empire	British imperialism and colonialism in Africa, the Americas, Asia, and the South Pacific.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	427	French Revolut/Napoleonic Era	Conditions in Pre-Revolutionary and Revolutionary France; organization of France under Napoleon and impact of French changes upon Europe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	429	Modern Germany	Germany since 1871.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	430	Ottoman Emp/Classical Period	Focuses on the largest and most powerful Islamic polity from the late Middle Ages until the early twentieth century: its formation, institutions, social and cultural life, and its multifaceted impact on Europe and the Near East.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 430 or HST 495 (The Ottoman Empire in the Classical Period) or HST 498 (The Ottoman Empire in the Classical Period)
HST	432	East Euro/ the Balkans-20 Cent	Politics and culture in Eastern Europe and the Balkans from World War I to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	435	The Russian Empire	Development of Russian imperial institutions and civil society from the 17th to the early 20th centuries.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	436	Rise&Fall of Soviet Communism	In-depth study of Communist revolutionaries' rule of Russia, focusing on utopian culture, Stalinist terror, heroism in war, and the breakup of the former Soviet Union.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	438	Modern Spain	Cultural, economic, political, and social development of modern Spain.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	439	Athenian Democracy	Discussion-based seminar familiarizes participants with the origins, characteristic institutions and political ideology of the Athenian democracy of the 5th and 4th centuries BCE. Engages selected topics in the study of Athenian democracy and gives participants an idea of the substance of contemporary debates within scholarship. Topics will include: The origins of the Athenian democracy; women, slaves, and other subordinate social groups within the democracy; elite critique of democratic ideology and episodes of outright civil war; leaders and masses; the role of the court system within the democracy; democracy and the Athenian empire; and violence in Athenian society. The goal of the course, in addition to a greater familiarity with the Athenian democracy, will be a research paper with a well-chosen topic and a distinctive thesis.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H	Prerequisite(s): minimum 45 hours OR Visiting University Student
HST	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
HST	443	The United States & Latin Amer	Latin American struggle for diplomatic recognition, attempts at political union, participation in international organizations since 1810, and relations between the United States and Latin America.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	444	Latin American Independence	History of independence movements throughout the Western hemisphere from the late 18th century until the mid-19th century.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 55 hours

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HST	445	20th-Century Cuba	History of Cuba from colonial era to formation of the early republic; political, economic, social development in late 20th century.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	447	Modern Mexico	In-depth examination of political, economic, social, and cultural developments in Mexico from 1810 to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 55 hours; Credit is allowed for only HIS 423 or HST 447
HST	448	Mexican/U.S. Border	Analyzes the evolution of the Mexican/U.S. border region from the mid-19th century to the present.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	449	Mexican Immigration to U.S.	Assesses the evolution of immigration and emigration public policy since the mid-19th century. Seeks to contextualize the relationship between immigration and other elemental nation-state issues as the economy, education, identity, and civil rights.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
HST	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
HST	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
HST	456	The Vietnam War	Intersection of American and Asian histories in Vietnam, viewed from as many sides as possible.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	459	Gandhi/Politics of Nonviolence	In-depth study of Gandhi and the Gandhian political philosophy and practice of nonviolence.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 55 hours. Credit is allowed for only HST 459 or HST 498, Gandhi: Politics of Non-Violence
HST	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student
HST	465	Women in Europe 1750 - Present	European women's diverse religious, ethnic, national, and economic roles in society, culture, and politics, 1750 to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, 108 with C or better; minimum 55 hours
HST	480	Mthd Tch Hist: Clsm Resources	Methods in instruction, organization, and presentation of the subject matter of history and closely allied fields.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): admission to Professional Teacher Preparation Program; ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 480 or HST 530
HST	481	Mthd Tch Hist: Comm Resources	Identify community-based resources for teaching history, work with resources, and learn how to integrate them into the secondary classroom.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 480 or SED 480 with C or better; admission to Professional Teacher Preparation Program
HST	482	Writing HST Science Ideas Tech	Writing-intensive course examines intersections between texts and major themes in the history of science and technology.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		

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HST	485	History in the Wild	History outside of conventional academic texts and purposes. Students craft historical narratives in ways that engage an audience beyond the professor, present information in forms other than (but not excluding) writing, and identify and use sources found outside of archives.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
HST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; HST 300 or 495 with C or better
HST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	495	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
HST	496	South,SE & East Asia Gbl Mtrx	In this capstone seminar, majors in Asia Studies take up broad comparative themes, integrating knowledge from the major's three tracks (East, South, and Southeast Asia) and executing a research project culminating in a major paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Asia Studies major (East Asia, South Asia, or Southeast Asia) or History major with Asia concentration; minimum 55 hours
HST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
HST	502	Public History Methodology	Introduces historical research methodologies, techniques, and strategies used by public historians. Readings, short papers, and guest speakers. Required for students in the public history concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PHD student
HST	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives--whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
HST	515	Studies in Historiography	Methods and theories of writers of history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HST	525	Historical Resource Management	Identification, documentation, and interpretation of historic period buildings, sites, and districts. Emphasizes interdisciplinary efforts among historians, architects, and anthropologists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	527	Historical Administration	Preparation of historians in administration of archives and historical sites, museums, societies, and offices in government agencies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	532	Community History	Techniques and methods of community history emphasizing local resources. Required for community history option.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student

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HST	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 573 or HST 573
HST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	597	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and to articulate the value of the degree to potential employers or admissions committee members.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 502, 641, 642, or 643; HST 591; HST 640; 24 graduate hours
HST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	640	Historical Methods	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 640 or HST 500 (Historical Methodology)
HST	641	North American History	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 641 or HST 598 (US to 1877)
HST	643	Global History	Core readings course engages key historical monographs focused on global history. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 643 or HST 598 (World and Global History)
HST	644	Area Studies in History	Core readings course engages key historical monographs focused on a geographic or thematic area of study. Topic varies by semester. Provides core content knowledge and an understanding of debates and trends in the field. Provides an understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 644 or HST 598 (European Core I: Pre-Modern Europe) or HST 598 (Medieval and Early Modern Europe) or HST 598 (Pre-Modern Europe and the World)
HST	682	Advcd Rsrch Skill	Designed for students who are demonstrating a non-linguistic skill such as: quantitative methods of analysis, geographic information system mapping, documentary editing, training in archival management, oral history interview techniques and historic preservation, or interdisciplinary training in fields relevant to the student's research interests such as geography, anthropology, sociology, political science or public administration, literature, ethnic studies, women's studies, ecology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 682 or HST 692 (Documentary Editing Advanced Research)

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HST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HUL	250	Intro Interdisciplinary Rsrch	Introduces undergraduate students to transdisciplinary and interdisciplinary academic inquiry so that they may expand their understanding of and capacity to tackle the grand social challenges facing the world today. Equips students to engage in the interdisciplinary and intergenerational collaborative inquiry through the pedagogy of the Humanities Lab, which explores and seeks to address those grand social challenges.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
HUL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	300	Humanities Lab: Engaged	Labs critically engage with grand social challenges using a collaborative, interdisciplinary and hands-on inquiry process. Student-faculty teams design and conduct original investigations and then develop a means to publicly share the proposed solutions based on their work.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HUL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	400	Humanities Lab: Immersive	Labs critically engage with grand social challenges using a collaborative, interdisciplinary and hands-on inquiry process. Undergraduate and graduate student, faculty and outside collaborators work together as an intergenerational team to design and conduct original investigations. The teams then synthesize their work, respond to review feedback, and develop a means to publicly share their proposed solution(s) based on their work.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HUL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
HUL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HUL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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HUL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	501	Character-Driven Leadership	Provides the core concepts of character-driven leadership defined as the commitment to do the right thing, the right way for the right reasons. Focuses on values; individual, organizational and national, along with ethics; culminating with a clear understanding of leadership. Led by a former U.S. Army, Lieutenant General with leadership experience of over 36 years in the Army and 6 years in higher education. Explores the "leader in me" by examining the values that they embrace and the causes that they believe in, along with understanding "the environment I lead in" and the criticality of comprehending where they lead and who they lead.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	502	U.S. National Security Policy	Core requirement for the master's degree in International Affairs and Leadership. Takes students through the realistic process of developing and implementing U.S. national security policy. Presented by a former senior national security professional, outlines the origins and current structure of America's national security architecture. Using actual policy decisions, students exercise the process of analysis, decision making and translating into action, elements of the country's national security agenda. Also includes intensive analysis of the intent and outcome of such critical policy decisions and the leadership exercised by the participating decision makers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	503	Applied Int'l Leadership	Builds on the theoretical and practical foundation of leadership development conveyed in previous course work. During the semester, students engage with faculty and with each other in multiple in-depth applied leadership scenarios, examining various aspects of leadership in international settings. The semester culminates in individual student presentations analyzing a complex international leadership challenge.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; IAL 501
IAL	504	U.S. Diplomacy in Action	Led by a former U.S. Ambassador, students constitute a U.S. Embassy Country Team for a specific country and manage a reality-based diplomatic agenda. Students are assigned the actual roles of Embassy team members, and together with their "Ambassador," Students practice how U.S. foreign policy is developed and executed in the field. Through readings, case studies and insights of outside foreign policy experts and U.S. Foreign Service Officers, students are challenged to understand current bilateral policies and relations between the United States and the country assigned for the course. Students also develop new, creative programs for the future that promote U.S. interests and also improve the understanding between the people of the country and the United States. Case studies and class simulation exercises of policy making and program management help students understand good and bad character-driven decisions and leadership.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	505	The Modern Global Economy	Projects forward what the economic and business environment will offer to graduates of the IAL master's program as they enter the job market. "Character-driven leadership" course content prepares students for success in their chosen career field. Led by a former U.S. Ambassador with extensive experience in economic and commercial diplomacy as well and private sector international business for and over 30 years. Through readings, case studies and insights of economic and business leaders, challenges students to consider not only possible future trends that offer growth and opportunities, but also economic and business developments that threaten setbacks, insecurity and failures. Case studies and class simulation exercises of policy making inform students of good and bad character-driven decisions and leadership in the business and policy world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IAL	508	Transatlantic Relations	Presents IAL students with a brief review of the rich history of the development of the Atlantic Alliance since the end of World War II, the end of the Cold War, and cooperation since the tragedy of the attacks on 9/11. But most importantly, this course projects forward what direction the U.S. and Europe are moving in the future. Challenges students to analyze and consider "over the horizon" trends and opportunities, but also the risks of conflict and how to mitigate and solve challenges. Case studies present "character-driven leadership" by U.S. and European leaders as they manage issues of cooperation and competition. Through readings, case studies and insights of European leaders, U.S. and European academic experts, and practitioners in government, business and Non-Governmental Organizations (NGOs), students develop their own policy proposals.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	509	Western Hemisphere	Elective course toward the MA in International Affairs and Leadership. Explores the opportunities and challenges facing the United States in its relationships with its regional neighbors, including Canada, Mexico, Central America, the Caribbean and South America. The lectures and readings consider how the region's social, cultural and economic history shapes its relations with the U.S. and the rest of the world. In a series of papers, students analyze how U.S. interests in the region can be best articulated in light of these factors.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	511	Human Rights and Real Politik	Elective course for the master's degree in International Affairs and Leadership. With a heavily discussion-based format, explores the origins of the human rights movement, watershed moments, and contemplates what may be next. Based on the foundation that respecting human rights is not simply the right moral choice, but one that has economic and national security implications: that the world is more prosperous and more secure when freedom and rights are universally afforded. Also addresses contemporary human rights crises, particularly from a leadership standpoint.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	512	Countering Global Terrorism	Elective for the master's degree in International Affairs and Leadership. Analyzes, discusses and proposes tactics and strategies for countering global terrorism, mainly, but not exclusively from the U.S. perspective. Presented by a former senior U.S. government counter-terrorism professional, focuses on U.S. counter-terrorism strategy against Middle East terrorism since 9/11. On hand of actual policy decisions, students exercise the process of decision making and translating into action, elements of the U.S. counter-terrorism agenda in partnership with allies and even adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	514	Combatting Human Trafficking	Offers a practical, global, interdisciplinary examination of the many issues surrounding human trafficking and modern slavery. Includes an overview of the legal perspectives on human trafficking, as well as various perspectives and alternative approaches to addressing modern day slavery. Discusses the roles of government, investors and consumers in detail, providing students the opportunity to explore diverse methods in understanding the complexity of human trafficking and modern slavery. Through class discussions and writing assignments, challenges students to critically think about methods for combatting the multitude of factors that contribute to human trafficking and modern slavery.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	560	Capstone	Serves as the culminating experience for the MA in International Affairs and Leadership. Each student prepares a comprehensive presentation capturing the knowledge and insights gained during the degree program, focused on a specific international affairs leadership challenge. A 45-minute oral presentation must show analytical rigor and defend a tangible strategic plan for achieving impact and positive change. The oral presentation must be accompanied by written back-up material that fully substantiates and defends the student's policy analysis and proposal for action. The presentation is followed by a 45-minute Q&A session led by the course instructor joined by a panel of international experts, who engage the student and critique the presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IAL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): International Affairs and Leadership MA student
IAL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): International Affairs and Leadership MA student
IAL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): International Affairs and Leadership MA student
IAL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAP	101	Art, Artist, and Culture	Provides an approach to art, creativity, and culture in global, historical, and contemporary contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	102	Found I: Perf Tech & Comp	Focuses on practice-based studies of contemporary presentational strategies and techniques.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	103	Found I: Interdisc Art Pract	Covers art and performance studies and applications of theory and praxis in contemporary interdisciplinary artworks. Shows students how the creative arts in inquiry and in action applied across disciplines can make a critical difference.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	104	Found I: Fund of Sound Art	Investigates late 20th- and 21st-century sound art and our relationship with it.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	105	Fndns I: Foundatns Visual Art	Focuses on contemporary aesthetic concepts and language for interdisciplinary visual arts application. Introduces core concepts of visual design: the elements and principles of design and the creative process, the basics of drawing, color theory, typography and 2D design. Engages student in the fundamental aspects of design to build an adequate foundation and prepares for the next level of the study of interdisciplinary arts practice.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	201	Intro to Interdisciplinary Art	Considers interdisciplinarity in practical terms in all art forms. Also considers antecedents and cross-cultural issues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	202	Persp Interdisc Arts & Perfrm	Social, cultural, and historical examination of interdisciplinary art and performance and a survey of current interdisciplinary work and approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	220	Intro to Game Studies	Examines the history, evolution, culture, aesthetics, ontology, anatomy, business and fundamentals of studying and building video games and the ways in which they interface with multiple disciplines in the humanities.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only IAP 220 or IAP 294 (Introduction to Game Studies) OR Visiting University Student
IAP	222	Games and Ethics	Involves students in the process of ethical gameplay design. Analyzes in-game challenges and mechanics with the lenses of various ethical theories. Students not only think deeply about the relationship between ethics and in-game challenges in game design, but also about real-life challenges that they might not have before realized were connected.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAP 222 or IAP 294 (Games and Ethics) or IAP 294 (Game Over: Ethics and Games)

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IAP	264	Music, Mind, & Culture	This interdisciplinary course explores how music and the general subjects of sound, noise, silence, hearing/listening are approached interdisciplinarily through the arts, humanities and sciences. In contemporary scholarship, the study of music crosses different academic fields and disciplines, including: musicology and music history, sociology and anthropology, cultural studies, religion, psychology, biology, ecology, neuroscience, mathematics, physics, technology and engineering, business and economics, philosophy, and aesthetics.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is only allowed for IAP 264 or IAP 294 (Music, Mind, and Culture)
IAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	301	Energetic Syst of Art: Collab	Identifies and explores the energetic systems at work in the creation, performance, and perception of art.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	302	Cross-Cultural Perspective/Art	Social and cultural perspectives of art and performance through a survey of historical and contemporary attitudes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	304	Trads/Avant-Garde Expermtl Art	Surveys 20th-century art movements and isms, including futurism, dada, surrealism, constructivism, realism, the Bauhaus, abstract expressionism, minimalism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	305	20th-21st Cent Art, Perf&Media	Surveys artists, movements, and trends in the arts with an emphasis on interdisciplinary performance, media, and technology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	307	Art and War	Global interdisciplinary survey of the range of work created by artists in response to war, through time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	310	Women in Art	Cultural, historical, and social issues relating to the seeming scarcity of women artists and changing social contexts for women artists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre- or corequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAP or IAS 310
IAP	321	Music Composition I	Study and implementation of specific compositional theories and procedures.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	322	Multitrack Digital Recording	Introduces students to theory and practice of Musical Instrument Digital Interface (MIDI) technology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	324	The Voice and Performance	Involves all aspects of the human voice, including research, creation, and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	325	Sound Perf: Exploring Alt Perf	Utilizes innovative sound ensembles to explore all aspects of sound and its place in various art forms.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisite: BA Digital Culture major or BA Interdisciplinary Arts and Performance major; Pre/Co-requisite: IAP 201 or 202
IAP	331	Perf, Acting & the Individual	Explores the concepts of the self, the subject, and the author as each pertains to the solo artist.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	332	Technical Prod/Interdisc Arts	Develops basic technical knowledge and application of fundamental stagecraft techniques used in the creation and presentation of performance works.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	333	Directing for Performance	Explores various strategies for performance. Emphasizes nontraditional staging and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	334	Conceptual Develop in the Arts	Conceptual development processes in the arts from initial idea to formal project proposals, grants, and production plans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture or Interdisciplinary Arts and Performance or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Drm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Drm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Drm Wrk:Pg to Stg&Scrn) OR Visiting University Student
IAP	352	Seeing and Drawing	Develops drawing and seeing skills that are important not only to visual arts but also to music, dance, and theatre.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	354	Visual Representation	Explores materials, processes, and aesthetic concepts of art making through various media with readings on cultural perspectives and contemporary theory.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA major or Interdisciplinary Arts and Performance BA major; Pre- or corequisite(s): IAP 201 or 202
IAP	355	Illusion and Vision	Inquiry into 2-D surfaces for visual representation and personal expression; includes readings on color theory, visual perception, and historical/cultural patterns.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	361	Digital Editing/Media Literacy	Investigates the approaches used in digital editing with a focus on interactivity, graphics, audio, and desktop video.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	362	Games & Narratology	Focuses on design techniques for the writing of nonlinear and interactive stories in the video game development process. Compares and contrasts game writing with other creative writing such as short story, song writing, oral history, poetry, fiction and film. Examines, deconstructs and questions the game design approach commonly referred to as narratology. Inspects key texts in media and cultural studies for attitudes, ideas and thoughts on games and narrative in games. Uses materials, processes, and aesthetic concepts of level design and visual skills needed to create a video game using a game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	363	Sound, Image, and Media	Interdisciplinary arts projects for experimental approaches to relating sound and visual image, accompanied by survey of historical and contemporary material.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	364	Documentaries	Media arts projects exploring new and experimental forms of visualization based upon an interdisciplinary survey of historical and contemporary examples.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	365	Digital Interactivity	Combines graphics, video, and animation with digital authoring tools for creation of interactive multimedia Web sites.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	368	Digital Graphic Technologies	Employs technology used in contemporary graphic designs to design concepts and techniques for modeling and representation applications.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	371	Verbal Art	Examines varieties of verbal art in everyday life, literature, oral and literate cultures. Considers diverse cultural forms and values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	375	Contemporary Performance	Performance course focusing on elements of contemporary and digital performance in relationship to stage, new technologies, video, installations, and public art. Through interdisciplinary strategies, students gain tools to deepen their knowledge and range of performance. Requires students to engage in research, conceptualization, and the creation of new original work, combining classroom workshops, various readings, fieldwork, and production to emphasize interdisciplinarity, collaboration, and personal vision. Once theories and concepts are explored, students work in a conceptually based and physically rigorous environment toward producing new work, culminating in a final performance project.	N	STO	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA or Interdisciplinary Arts and Performance BA or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
IAP	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
IAP	421	Comp:Process, Techniq/Style II	Advanced study of specific compositional theories and procedures; in-depth analysis of individual work.	N	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	431	Perspectives/Performance/Actng	Focuses on the interaction of the performer with media, alternative stagings, and collaboration with other performers.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	433	Directing Workshop	Applies experimental directorial techniques to presentations and deconstruction of classical works including European and cross-cultural traditions.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is allowed for only IAP 433 or MAS 598 (Directing Workshop)

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IAP	434	Production Laboratory	Develops original scripts into showcase productions. Students function as theatrical ensemble, participate in all phases of performance and production values.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	441	Movement for Performance	Explores the relationship of movement as it relates to performance, both historically and cross-culturally.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	462	Games and Play	Focuses on a study of play and game design. Discusses what play is and why humans need it as it pertains to game design. Considers and analyzes an examination of the dark side of play. Scrutinizes the concept of what critical play is and how games are working within social, political and cultural systems. Studies these concepts as the students design and execute a serious or artistic game demo using the materials, processes, aesthetic concepts of art making and scripting skills needed to create a video game using a 3D game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	463	Recording Studio Practicum	Supports advanced media students' work in the recording studio and media lab by refining skills producing recordings that enhance their academic and/or professional portfolios.	N	STO	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		Prerequisite(s): IAP 322 or 469; Credit is allowed for only IAP 463 or IAP 494 (Recording Studio Practicum)
IAP	464	Media and Diversity	Interdisciplinary art projects exploring identity, perception, and technologies from a basis of class, race, ethnicity, gender, sexuality, and ecology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	465	Media Technologies & the Arts	Practical explorations of media arts interrelated with cultures, society, and technology, addressed through readings, discussion, research, and student arts projects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	466	Digital Interactivity/Advanced	Advanced multimedia authoring skills for creation of interactive works in DVD, CD ROM, and other media formats.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students
IAP	467	Acoustic Ecology	Investigations into the relationship between audio art and ecology; covers field recording, oral histories, digital editing, and designing audio Web site and databases.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	468	Digital Graphic Applications	Targeting, planning, design, authoring, development, and presentation of professional digital media graphics for Internet and print.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students
IAP	469	Advanced Audio Production	Engages advanced media students in the technical, logistical, and aesthetic concerns specific to audio in all forms of digital media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	471	Language, Culture/Performance	In-depth examination of language in myth, poetry, social and aesthetic performance genres.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	473	Aesthetic Research	Investigates how artists, in all disciplines and from different historical periods, conduct or participate in research.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	474	Art and Film	Focuses on film as an art form in relation to the arts through aesthetics, cinematic theory, period study.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	480	Art as Praxis: Concept to Prod	Capstone course. Students complete an exit project or internship as well as an arts portfolio under the guidance of an instructor and mentor.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3-6		Prerequisite(s): minimum 45 hours OR Visiting University Student
IAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	496	Playworks Portfolio	Students devise a career plan, establish a digital portfolio, prepare artist statement, and become familiar with contracts and legal documents associated with a career as a serious independent game developer or studio artist.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Arts and Humanities in Games certificate student OR Visiting University Student
IAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		

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IAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	300	Career Strat & Pers Resilience	Analysis of sociological and economic factors of 21st-century work environments, integrated with a psychological understanding of resilience.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR New College Applied Science major OR Visiting University Student
IAS	305	Work and Identity	Explores the relationship between work and identity, as well as the search for meaning in work across generations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	
IAS	340	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
IAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
IAS	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
IAS	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409
IAS	410	Evolution of Ideas	Investigates ideas (paradigms) and revolutions (paradigm shifts). Examines several topics from perspectives of science, arts, humanities, social sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better OR Visiting University Student
IAS	415	Life in the Universe	Examines the search for life in extreme environments on Earth and in remote locations beyond Earth.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAS	416	Black Holes and Beyond	Explores developments in understanding nature's most basic force-gravity-from Aristotelian concepts to modern theories of curved space-time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAS	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
IAS	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prereq(s): ENG 101, 105, or 107 w/ C or btr; ENG 200 w/ C or btr; one 200-level lit course w/ C or btr OR New College ugrad std; ENG 101, 105, or 107 w/ C or btr; min 45 hours; Credit is allowed for only ENG 420 or IAS 420 OR Visiting University Student
IAS	430	Science and Religion	Examines evolving relationships between scientific thought and Western and Eastern religious thought. Explores cosmologies, worldviews, and epistemologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 430 or MAS 510 OR Visiting University Student
IAS	480	Capstone/Practices/Approaches	Individualized projects developed by the student under the guidance of the capstone coordinator based upon the student's area of concentration. Provides an opportunity to apply the knowledge and skills developed in the course of their program to real-world situations.	N	RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		Prerequisite(s): Interdisciplinary Arts and Sciences BA or Philosophy, Religion, and Society BA or Applied Science BAS major
IAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student

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IAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
IAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	110	Intro Integrated Behav Health	Introduces major clinical concepts and practice models related to team-based medical and behavioral health care integration.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	120	Intro to Integrated Healthcare	Provides an introduction and overview of the American health care system and its driving forces, with a focus on the move to integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	415	Behav Hlth Over the Lifespan	Common issues and concerns faced throughout the different life stages and the associated behavioral health needs. Presents evidence-based strategies for primary prevention and early intervention. Provides case examples to effectively illustrate the application of the key constructs addressed in the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Quadruple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
IBC	425	Cognitive & Behav Counseling	Frameworks for conceptualizing health behavior change. Reviews evidence-based approaches that address patient's behavioral health needs in primary care and other medical settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	430	Med Pathophysiology, Terminol	Provides an overview of pathophysiology and medical treatment of common medical conditions in primary care (e.g., diabetes, coronary heart disease, hypertension, asthma, cancer). Emphasizes medical terminology, pathophysiology, common medical treatments and behavioral health issues associated with those conditions that students can expect to see in integrated medical settings, especially integrated primary care. Students learn appropriate medical terminology for symptoms, diseases, treatments and medical tests so they can communicate effectively with inter-professional medical teams. Discusses the role of the behavioral health provider as it relates to these conditions as well.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	520	Integrated Health PCMH	Covers the Patient-Centered Medical Home (PCMH), with an emphasis on alignment in primary care and other integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	530	Evid Based Integrated Health	Provides a health care manager's introduction to evidence-based guidelines for integrated health care design and delivery systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	540	Integrated Health Improvement	Team-based quality improvement evaluation, measurement and health care system transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	550	Integrated Health Care Ops	Integrated health care operations, including an in-depth exploration of health care and integrated care systems, planning, program assessment, implementation and change management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	560	Integtrd Health Care Data Anly	Data analytic tools and techniques used to plan, implement and improve integrated health care transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	570	Integtrd Health Care Fin Mgmt	Integrated health care financial management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	585	Team-Based Consultation&Ldrshp	Team-based leadership and consultation in integrated health care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	586	Behavioral Health Writing	Focuses on improving overall professional writing skills, with an emphasis on how to write a literature review, use APA format, cite sources ethically and access available writing resources as necessary.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Behavioral Health (Clinical) or Behavioral Health (Management) DBH student; Credit is allowed for only IBC 586 or IBC 590 (Professional Writing Skills)
IBC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
IBC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	601	Models of Integrated Primary C	Provides an overview of the primary care environment as well as current models of integrated primary behavioral health care. Reviews and critiques models of health care based on their success in impacted patient health outcomes and improving physician satisfaction, along with fiscal and care delivery systems for each.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	602	Healthcare Statistics	Provides an overview of contemporary issues in health statistics and develops student proficiency in completing hands-on statistical analyses using Microsoft Excel. Develops proficiency in using Excel to manage data analyses as an ongoing tool to collect and analyze clinical and cost-effectiveness data in primary care and related healthcare settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	603	Brief Interventions in Primary	Provides an overview of evidence-based care for the integrated primary care environment. In particular, reviews and applies the most common approaches to addressing co-morbid behavioral and medical conditions, including but not limited to brief psychotherapy, adherence enhancement, lifestyle medicine, and others, using cognitive-behavioral, acceptance and commitment therapy, solution-focused, and motivational interviewing approaches.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 603 or IBC 691 (Brief Interventions in Primary Care) or IBC 702
IBC	604	Clinical Med/Pathophysiology	Overview of each of the main systems within the human body. Addresses the major diseases (symptoms, diagnosis, and medical treatments) within each system. Students learn appropriate medical terminology for symptoms, diseases, treatments, and medical tests so they can communicate effectively with medical practitioners (nurses and physicians). Content is equivalent to pathophysiology training in an RN program. Also addresses the role of behavioral care providers in medical settings; design and implementation of psychoeducational programs in primary care; stress management techniques for use in medical settings; chronic pain management; identification and treatment of somatization disorder; increasing compliance in noncompliant patients; alternative/complementary medicine; overview of nutrition; and the effects of exercise and nutrition on prevention and treatment of diseases.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	608	Psychopharmacology Behav Care	Provides overview of psychopharmacology to equip the behavioral care provider with the understanding of psychotropic medications necessary to make prescription recommendations to primary care physicians and to participate in medication management for patients being prescribed psychotropics. Basic principles of pharmacology in general, including pharmacokinetics, pharmacodynamics, medication development and the FDA approval process, interaction effects, drug company marketing strategies, appropriate and inappropriate medication usage, over-medication, and off-label medication use. Reviews pharmacokinetics and pharmacodynamics in special populations (children, the elderly, and patients with co-morbid medical and psychological conditions).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	609	Clinical Neuropathophysiology	Presents overview of each of the basic neuroanatomy, neurophysiology, and a focus on the manifestations of neurophysiological dysfunction across the life span for Doctor of Behavioral Health (DBH) program behavioral clinicians. Covers the basic human brain anatomy, neurophysiological processes, development, and maturation. Using case studies, presents and discusses evidence-based support for theories of psychiatric disorders and neuropsychopathology. Incorporates evidence-based research findings on the role of genetics, neurophysiological adaptation, epidemiological and societal influences in order to develop understanding of disruptions in normal neurophysiological functioning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	610	Behav & Psych Assess Prim Care	Presents a comprehensive model of behavioral and psychological assessment for behavioral health clinicians in primary care and related medical settings. Provides behavioral health consultants with the necessary knowledge base and skills to develop an appropriate assessment and treatment plan for a variety of commonly seen complaints in primary care. Places attention on the assessment of both psychiatric and behavioral complaints across the lifespan. Students become familiar with both structured interview and empirically support quantitative measures consistently utilized to enhance our understanding of the presenting complaint.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	611	Population-Based Behv Hlth Mgt	Overview epidemiology for health care followed by population-based approaches to behavioral intervention. Epidemiology includes concept of populations; descriptions and definitions of health and disease; measurement of health (measures, morbidity, mortality and health); designs for studying the health of populations and standardization of population health measures. Population-based management includes definitions of medical management; planning health care for populations and population health outcomes; quality of care and economic analysis of population-based interventions; adjunctive treatments as a core component of population-based interventions. Also, advanced application of population-based behavioral interventions with a focus on design, measures, analysis, results and discussion of current approaches. Includes predictive modeling methods for defining populations; interventions focusing on stepped-care approaches; engagement strategies, interventions, measurement, and follow-up.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	612	Intro to Behav Interventions	Provides a foundational understanding of behavioral health interventions for primary care settings for those students intending to work in administrative, management or allied health positions. Provides a theoretical basis for various psychological schools of thought, as well as an overview of the empirical evidence for those approaches. Reviews models of therapy including: psychodynamic, brief strategic, cognitive-behavioral and solution-focused. Also reviews two intervention strategies typically used in integrated settings: Acceptance and Commitment Therapy (ACT) and Motivational Interviewing (MI). Explores the ways that these approaches serve as the theoretical framework of the Biodyne model.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 612 or IBC 780 (Introduction to Behavior Intervention)

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IBC	614	Quality & Perf. Measure, Imprv	Overview of health care quality management, emerging models of health care performance measurement, and models of pay for performance incentives in health care designed to reward providers for attaining quality of care goals. Prepares behavioral clinicians to provide services that are consistent with best practices in quality management and performance measurement in health care and to provide care that is consistent with performance incentive programs that are present or on the horizon. A key characteristic of health care reform is increased focus on provider quality of care, accountability for quality via performance measurement, and aligning provider incentives to meet national and regional quality of care performance targets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	615	Innov. Techn. in Behav. Health	Provides a quick overview and answers to basic questions related to both online therapy and telemental health. Gives a downloadable audio recording (MP3) and access to the accompanying video clips that augment a rich sampling of pages extracted from our other coursework. As a composite, this experience introduces our multi-modal learning environment and, more importantly, gives an idea of the issues involved with establishing an online or otherwise remote practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 616 or IBC 780 (Innovative Technologies in Behav. Health Intervention)
IBC	620	Psychosomatic Illnes: Diag & T	Teaches how to successfully diagnose and treat physical illness caused by various forms of psychosocial stress (psychophysiological disorders, PPD). Because patients are often unaware of the nature or degree of stresses that are responsible for their illness, places emphasis on learning how to detect and use clues that patients provide to develop a more complete understanding of the struggles than they are able to perceive for themselves. Focuses on selecting, assessing and treating a patient known to the student who has medically unexplained physical symptoms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 620 or IBC 780 (Psychosomatic Illness: Diagnosis and Treatment)
IBC	624	Integ Behav Hlth Care Child Ad	Integrates developmental psychology with pediatric psychology in order to prepare behavioral clinicians to provide screening, assessment, and intervention for children and adolescents in primary care and other medical settings. Presents an overview of developmental stages with an emphasis on critical tasks, while contrasting normal versus abnormal development. Develops societal, familial, and cultural influences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	626	Behavioral Health Management	Presents an introduction to the roles and responsibilities of supervisor/manager in a health care organization. Provides behavioral health professionals moving into management with the necessary knowledge base and skills to be an entry-level manager and focuses on the further knowledge acquisition needed to become an experienced, effective manager and leader. In addition, discusses the larger context in which healthcare businesses operate--health care reform, regulations and technological changes. Participants take time to look at personal characteristics, interpersonal styles and presentation that affect how one is perceived and responded to in an organization. Too often we have observed individuals with high-level clinical skills moving into management without the requisite skills and understanding of issues, restricting their ability to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 626 (or IBC 724) or IBC 780 (Behavioral Health Management)
IBC	630	Financial Mgt of Health Care	Covers the fundamentals of health care finance with a concentration on health care system financing and the related operational management issues. Grounds clinical managers in finance principles and assists those students with understanding the financial issues currently faced by stakeholder organizations in the health care system. Focuses on the information and tools needed by managers to address financial issues and challenges as an organizational leader for integrated care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 630 or IBC 691 (Financial Management in Healthcare)
IBC	634	Strategies & Techn for Behv	Examines and discusses the theoretical and applied health-related research changing nutrition, smoking and physical activity behaviors in clinical practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	640	Family Couples in Primary Care	Explores the systemic dimensions of health care delivery that are relevant to working with families and couples in primary care. Students study models from family therapy and medical family therapy that address family dynamics associated with the management of health and illness, the progression of chronic diseases, and other medical conditions. Reviews strategies for adapting family systemic approaches to provide patient- and family-centered health care in a primary care setting.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 640 or IBC 691 (Family and Couples in Primary Care)
IBC	650	Veterans Health	Provides an introduction to the military and veteran culture and the integrated health care needs and management concerns related to this unique population.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 650 or IBC 691 (Veterans Health)
IBC	660	Healthcare Legal Ethcl & Prof	Integrate three key areas of healthcare ethics, law, and professional issues for the Doctor of Behavioral Health (DBH) clinician in primary care: (1) the code of ethics for psychologists; (2) legal and ethical issues in medicine; and (3) technological issues and the behavioral health provider.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	670	IBH Interv for Sub Use Disord	Focuses on the theoretical foundations, research and strategies for identifying, intervening and/or referring patients in primary care and other healthcare settings that presents with substance use disorders or problem use. Provides detailed information about the clinical model of SBIRT (Screening, Brief Intervention, and Referral to Treatment), along with strategies for implementing sustainable business models for SBIRT in healthcare environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 670 or IBC 780 (Integrated Behavioral Health Interventions for Substance)
IBC	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): IBC 601; IBC 603 or IBC 626; IBC 614; IBC 793 (Introduction to Applied Project [Cohort 1])
IBC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	716	Health Care Information Mgmt	Provides a comprehensive overview of health care information technology (HIT), including the effects of the external environment and government policies on its evolution; the expanded role of the CIO; the basics of hardware, software and communication systems; the types of operational, management and clinical applications; and the value HIT brings to the enterprise. Included concepts reflect a broad vision of HIT management as a combination of technology, information and manpower leadership.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 716 or IBC 691 (Healthcare Information Management)
IBC	718	Healthcare Syst.Org, Del, Econ	Provides an overview of the U.S. healthcare system with a focus on economics and policy. Primary goals of the course are to enable students to recognize the relevance of economics to healthcare and to apply economic principles to better understand health-related issues; understand the U.S. healthcare delivery system in the context of social, policy, and economic factors; evaluate the evolving nature of healthcare reform initiatives and their implications for clinical practice, financing, research and policy; analyze public healthcare policy from an economic perspective. Students also focus on behavioral healthcare economics and policy and the economics of behavioral health services in medical settings. Students also understand the medical cost offset effect, including economic benefits of behavioral interventions for co-morbid medical and behavioral conditions, measurement of medical cost-offset, and cost-offset for psychopharmacology and specific behavioral conditions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	720	Behavioral Health Entrepreneur	Provides an introduction to the essential entrepreneurship skills for the behavioral healthcare clinician. Focuses on entrepreneurial skills designed to prepare the behavioral clinician to start a new business venture or revitalize an existing organization or business, to meet the needs of the evolving healthcare system and marketplace.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	725	Effect Consult Integrated HC	Prepares students to function as effective consultants in integrated care settings. Effective consultation includes the ability to engage, educate, inform, persuade and collaborate with diverse professionals both within the clinic or hospital setting but also in related systems of care. The hospital or clinic setting includes care providers such as PCPs, nurse, allied health administrative support staff, and managers and executives such as medical director, CEO and CFO. The hospital or clinic also includes related departments such as quality improvement, electronic health records/health information technology, billing, finance and actuary. Systems of care include the patient/family, community, health plans, disease prevention or management companies, specialty mental health and substance use disorder providers, community-based resources, large employer group and related EAP providers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 725 or IBC 691 (Effective Consultation in Behavioral Health)
IBC	728	Cultural Diver., Hlth & Illnes	Focuses on the relationship among cultural diversity, health and illness, and multicultural psychotherapy in primary care and other healthcare settings. Prepares behavioral clinicians to identify the relationship between cultural diversity and health and illness and to use effective psychotherapy informed by cultural diversity in primary care and related medical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	732	Leadership in Health Care	Leadership, management and organizational behavior in health care settings. Organizational behavior theories and concepts related to leadership. Uniqueness of structures, processes and interactions in integrated care programs and how to adapt these to medical settings. Communication skills, teamwork and collaboration. Current challenges to leadership in health care reform.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 732 or IBC 691 (Leadership in Healthcare)
IBC	740	Cost Offset and ROI	Research has demonstrated that many integrated behavioral interventions designed to prevent or improve chronic disease outcomes result in cost savings by reducing overuse of health services and associated costs. Reviews research on conditions such as depression and anxiety co-morbid with chronic disease, somatizers, cardiovascular risk factors underlying chronic disease, substance use disorder, pain and opioid misuse, cigarette smoking and insomnia that show evidence for cost savings. The interventions are typically delivered in integrated settings such as primary care and based on the population health management model. Interventions include therapeutic lifestyle change, medication adherence, cognitive behavioral treatment and emerging eHealth and mHealth interventions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IDN	101	Elementary Indonesian I	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
IDN	102	Elementary Indonesian II	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): IDN 101 with C or better OR Visiting University Student
IDN	201	Intermediate Indonesian I	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 102 with C or better OR Visiting University Student
IDN	202	Intermediate Indonesian II	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 201 with C or better OR Visiting University Student
IDN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
IDN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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IDS	140	Nature of Knowledge Systems	Introduces students to the structure and divisions of knowledge systems in the university setting. After surveying the different types of disciplines, students learn processes for using knowledge and insights from different sources in an integrative manner.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
IDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	201	Intellectual Fusion	Introduces students to the history of interdisciplinarity. Examines major theories and methods of interdisciplinarity, and students use these methods to begin to examine complex interdisciplinary problems.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
IDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	300	Theories& Applications Org Stds	Critical analysis and application of organizational theory and conceptual perspectives to identify and solve problems, emphasizing personal and organizational application.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
IDS	301	Becoming Interdisciplinary	The history of interdisciplinarity and methods of integrating knowledge and insights from multiple perspectives.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major OR Visiting University Student
IDS	302	Integration Skills	Develops integrative skills to create new understandings, models, products and ideas.	Y		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better OR Visiting University Student
IDS	310	Integration: Cultural Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand cultural diversity in contemporary U.S. society.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	311	Integration: Global Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand global issues.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
IDS	312	Integrative Perspect on Change	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine ideas, issues and institutions as they change over time.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	313	Integratv Persp on Chnging Wrld	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine global ideas, issues and institutions as they change over time.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	314	Integratv Persp Cultural Dynam	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine the shifting dynamics of cultural diversity in the United States.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
IDS	315	Integration: Social Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human behavior and interactions.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	316	Integration:Humanities Context	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human thought and creativity.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	321	Interdisciplinary Issues	Focuses on an interdisciplinary topic from the perspective of multiple disciplines.	Y		LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	355	Peace Corps Seminar	The Peace Corps: its mission, history, concerns and application process.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	401	Integration: Experiential	Offers students the opportunity to apply their integrative skills in internships, directed projects or other experiential contexts.	Y		RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better; IDS 302 with C or better; minimum 2.00 GPA OR Visiting University Student
IDS	402	Senior Seminar	Capstone course helps integrate classroom and experiential learning. Students choose among course topics that address their interests.	N		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Interdisciplinary Studies student; ENG 101, 105 or 107 with C or better; IDS 302 with C or better; minimum 2.0 GPA
IDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
IDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	OP4	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student

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IDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
IDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
IED	320	Early Ed/Dev. Indigenous Child	Assists students in developing their knowledge of the development of Indigenous children and appropriate methods and strategies for effective instruction in preschool/kindergarten classrooms. Explores issues faced by Native American teachers to provide both an effective and meaningful educational experience for Native American and Alaska/Hawaiian Native children.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum junior standing; Credit is allowed for only IED 320 or IED 394 (Early Education & Development of Indigenous Children)
IED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
IED	410	History American Indian Educ	Philosophical and historical review of the development of American Indian education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Credit is allowed for only IED 410 or 510
IED	430	Lang/Literacy-Indig Peoples	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Credit is allowed for only IED 430 or 530
IED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
IED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
IED	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	501	Indigenous Research Methods	Examines research, its methods and methodologies through an indigenous framework. Presents different methods, their connections to various research questions, and thoughts of ways to analyze extant educational data. Additionally, examines traditional methodologies, methodological clashes, and the insertion of critical indigenous research methodologies into the framing of the conversation. Offers an historical overview of research in indigenous communities.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student; Credit is allowed for only IED 501 or JUS 691 (Decolonizing Indigenous Research Methods)
IED	502	Indigenous Knowledges in Ed	Provides an overview of the literature on indigenous knowledge systems as they tie into education as broadly defined. Specifically focuses on indigenous knowledge systems and how it encapsulates relationships (between people and each other, humans and their environment, and humans and written and oral learning); responsibility; reciprocity; and respect. Covers both historical understandings of indigenous knowledge systems and the ways that these knowledge systems are currently being taken up by tribal peoples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only IED 502 or JUS 691 (Indigenous Knowledges in Education)
IED	503	Current Issues Indigenous Ed	Examines current issues facing indigenous student academic achievements and their path to higher education in the United States. Focuses on how structural and systematic dynamics influence indigenous education. Exposes students to literature and engages in discussions that allow them to analyze how policy, practice and lived-experiences shape indigenous education.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	510	History of Indigenous Educ	Philosophical and historical review of the development of indigenous education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student; Credit is allowed for only IED 410 or IED 510
IED	530	Language/Literacy-Indig People	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only IED 430 or 530

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IED	535	Comm-Based Action Research	Examines the basic structures of what comprises the research paradigm called Community-Based Participatory Action Research (CBPR). CBPR is research that connects "research experts" with community members with an explicit focus on sharing power, knowledge and ownership of data and its concomitant resources and products. Offers a "how-to" for students in constructing research projects utilizing this lens/framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	585	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and allows each student to explore a research area, interest, theme or question within Indigenous education. Develops final written products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	210	Intro Industrial Engineering	History of IE: IE career paths; ethical, social, and contemporary issues; introduces IE techniques, methods, and their application; case studies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 100, EGR 101, FSE 100 or SES 100 with C or better; MAT 265 or 270 with C or better OR Visiting University Student
IEE	220	Business/Industrial Engr	Introduces business for industrial engineers, including business/financial structures, fundamentals of cost and accounting, role of business/engineering in society.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; Introduction to Engineering course with C or better OR Engineering Management student; minimum 25 hours OR Visiting University Student
IEE	300	Economic Anlys for Engineers	Economic evaluation of alternatives for engineering decisions, emphasizing the time value of money.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergrad student; MAT 265 or 270 with C or better and Introduction to Engineering course with C or better OR Engineering Management Minor/Concentration; MAT 265 or 270 with C or better OR Visiting University Student
IEE	305	Information Systems Engr	Overview of computer and information systems applications. Topics include client/server; distributed computing; networks; process modeling; e-commerce; enterprise applications; Internet.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 OR Non-Fulton Engineering undergraduate student; CSE 205; minimum 3.00 GPA OR Visiting University Student
IEE	320	Extreme Excel	Today's workplace environment for engineers demands advanced skills in using worksheet applications such as Microsoft Excel. Course addresses this important gap in the curriculum to provide support for students who are in need of training on the various capabilities of the software. In particular, students become familiar with various functionalities that are critical for performing their jobs as engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only IEE 320 or IEE 394 (Extreme Excel) OR Visiting University Student
IEE	321	Professional Engineering Pract	Methods and tools for preparing students for work in industry including ethics, technical writing and communications; understanding how learned undergraduate skills are used in the workplace and in engineering problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; IEE 300 with C or better; IEE 380 with C or better; Pre- or corequisite(s): IEE 369 with C or better if completed OR Visiting University Student

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IEE	369	Work Analysis and Design	Planning, analysis, and design of methods of accomplishing work. Emphasizes human factors, work planning, methods analysis and design, and work measurement. Applications in diverse fields.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Fulton Engineering undergraduate student or Engineering Management Minor/Concentration; ENG 101, 105, or 107 with C or better; FIN 300 or IEE 300 with a C or better OR Visiting University Student
IEE	376	Oper Rsrch Det Tech/Apps	Industrial systems applications with deterministic operations research techniques. Resource allocation, product mix, production, transportation, task assignment, networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s) with C or better: Indust Engr major; CSE 205; IEE 210; MAT 242, 342, or 343 OR Engr Mngmnt student or Math Concepts of Engr certificate student; CSE 205; MAT 242, 342, or 343 OR Industrial Engr grad student OR Visiting University Student
IEE	380	Prob & Stats Engr Prob Solving	Applications-oriented course with computer-based experience using statistical software for formulating and solving engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	CS	Prerequisite(s): Fulton Engineering undergrad stdnt, Engr Management minor, or Math Concepts of Engr cert stdnt; MAT 266 or 271 with C or better OR Industrial Engr grad stdnt or Data Science, Analytics & Engr PhD stdnt OR Visiting University Student
IEE	381	Lean Six Sigma Methodology	Define, measure, analyze, improve and control (DMAIC) steps of six sigma methodology for business and quality improvement. Reviews the necessary statistical tools and illustrates their integration into the problem-solving process. Overview of lean principles and design for six sigma. Unique features of applying six sigma and DMAIC in transactional and service organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 380 with C or better; Credit is allowed for only IEE 381 or IEE 498 (Six Sigma Methodology) or IEE 498 (Six Sigma Green Belt) OR Visiting University Student
IEE	385	Engr Statistics - Probability	Conditional probability, common probability models, Goodness-of-fit tests and reliability models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate or Mathematical Concepts of Engineering certificate student; IEE 380 with C or better OR Industrial Engineering graduate student OR Visiting University Student
IEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	412	Intro to Financial Engineering	Intensive exploration course of three phases: (1) a preparation phase for the terminology and financial lingo to be used throughout the semester, (2) introduction of more advanced financial topics such as portfolio formation, assessment and traditional portfolio theory, (3) several financial engineering topics such as the application of stochastic models to stock and derivatives pricing and financial risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 300 with C or better; IEE 380 with C or better OR Visiting University Student
IEE	421	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 376 with C or better; IEE 380 with C or better; IEE 385 with C or better; Credit is allowed for only IEE 421 or IEE 498 (Urban Operations Research) or IEE 521 or IEE 598 (Urban Operations Research) OR Visiting University Student
IEE	426	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: IEE 376 and 380 with C or better; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	431	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Fulton Engr undergrad stdt, Dig Cult (Media Processing) BA/BS major, or Engr Mgmt minor or concentration; ENG 101, 105, or 107 w/ C or better; min junior standing; Credit allowed for only IEE 431 or IEE 541 OR Visiting University Student

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IEE	437	Human Factors Engineering	Studies the human psychological and physiological factors that underlie the design of equipment and the interaction between people and machines.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student or minimum 3.0 GPA; Credit is allowed for only IEE 437 or IEE 547 OR Visiting University Student
IEE	454	Risk Management	Methods and tools for identifying, assessing, mitigating and controlling risk in business and engineering design activities. Decision tools include cost-benefit analysis, decision trees, value of information, Bayesian statistical decision making, fault trees, and failure modes and effects analysis (FMEA).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management Minor/Concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	456	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering student; IEE 300 with C or better; junior or senior standing OR Engineering Management minor or concentration; IEE 300 with C or better; Credit is allowed for only IEE 456 or IEE 556 OR Visiting University Student
IEE	458	Project Management	Life-cycle processes for selecting and managing large-scale projects to ensure successful completion. Topics include project phases, defining milestones, work breakdown structure, group decision making and teamwork, organizational structure, human resource management, technological and economic feasibility, configuration management, budget control, and resource allocation and scheduling. Use of modern tools for planning and controlling project performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management minor or concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	461	Production Control	Techniques for the planning, control, and evaluation of production systems. Forecasting, inventory control, scheduling, enterprise requirements planning, supply chain design, and coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; IEE 376 with C or better; IEE 380 with C or better OR Visiting University Student
IEE	470	Stochastic Operations Research	Modeling and analysis with emphasis on stochastic operations research. Models for stochastic processes, including Markov chains, queueing and decision analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Computer Science BS, Engineering Management BSE, Industrial Engineering BSE, Informatics BS, or Mathematical Concepts of Engineering cert student; IEE 376 with C or better; IEE 385 with C or better OR Industrial Engr graduate student OR Visiting University Student
IEE	474	Quality Control	Basic statistical process control techniques, capability analysis, design of experiments, and acceptance sampling plans.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 380 with C or better OR Visiting University Student
IEE	475	Simulating Stochastic Systems	Analyzes stochastic systems using basic queueing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	4	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 with C or better; IEE 385 with C or better OR non-Engineering major; CSE 205 with C or better; IEE 385 with C or better; minimum 3.00 GPA OR Visiting University Student
IEE	477	Syst Dyn & Thinking	Methods for the modeling and analysis of system dynamics; metrics to measure business performance; continuous simulation tools for evaluation of system performance over time.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): CSE 205 with C or better; IEE 380 with C or better; Credit is allowed for only IEE 477 or IEE 498 (System Dynamics Engineering) OR Visiting University Student
IEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		
IEE	485	Systems Design Capstone I	Senior capstone project provides students with the skills required to effectively complete a capstone project in design and development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s) with C or better: Engr Mgmt BSE major; ENG 101, 105, or 107; IEE 321; IEE 369; IEE 458 OR Industrial Engr BSE major; ENG 101, 105, or 107; IEE 321; IEE 369; IEE 376; Pre- or corequisite(s): Industrial Engr BSE major; IEE 475

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IEE	486	Systems Design Capstone II	Project in design and development. Individual or team capstone project in creative design and synthesis.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; minimum senior standing or postbaccalaureate; ENG 101, 105, or 107 with C or better; IEE 485 with C or better
IEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6		Prerequisite(s): Barrett Honors student
IEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-7		
IEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-3		
IEE	505	Information Systems Engr	Studies information systems application engineering. Topics include information technology, data modeling, data organization, process mapping, application and database engineering, and user interface development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506
IEE	506	Web-Enabled Decn Support Syst	Development and analysis of Web-enabled applications for decision support. Topics include: (1) Web application development using ASP.NET; (2) design for computing scalability, interface usability and cyber security; and (3) use of application development skills and design concepts to develop a decision support system consisting of database, analytical data processing, expert knowledge and reasoning, and user-friendly interface for enabling transitions from data to information, knowledge and decisions. Knowledge of database development is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506
IEE	511	Analysis of Decision Processes	Methods of making decisions in complex environments and statistical decision theory; effects of risk, uncertainty, and strategy on engineering and managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 498 (Analysis of Decision Processes) or 511
IEE	512	Intro to Financial Engineering	Introductory course on financial engineering covering traditional portfolio theory, forwards, futures, financial stochastic models, option pricing, and risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	520	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515 or IEE 572 or IEE 578; Credit is allowed for only BMI 555 or IEE 520
IEE	521	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 421 or IEE 521
IEE	526	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	530	Enterprise Modeling	Focuses on social, economic, and technical models of the enterprise with emphasis on the management of technological resources. Includes organization, econometric, financial, and large-scale mathematical models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	533	Scheduling	Provides the basic theory of scheduling and introduction to the applications domain.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student

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IEE	534	Supply Chain Modeling&Analysis	Techniques for modeling and analysis of supply chains. Inventory management, transportation/location models, value of information, channel alignment, risk pooling, contracts. Requires knowledge of basic statistics and probability and some optimization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	535	Intro Intrnl Logistics Systems	Exploratory project-oriented course that addresses domestic and international logistics practices from a high-level descriptive perspective and an analytical model-based perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	541	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student; Credit is allowed for only IEE 431 or 541
IEE	545	Adv Simulating Stochastic Syst	Analyzes stochastic systems using basic queuing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
IEE	547	Human Factors Engineering	Study of people at work: designing for human performance effectiveness and productivity. Considerations of human physiological and psychological factors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 437 or 547
IEE	552	Strategic Technologic Planning	Studies concepts of strategy, strategy formulation process, and strategic planning methodologies with emphasis on engineering design and manufacturing strategy, complemented with case studies. Presents and uses an analytical executive planning decision support system throughout course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	556	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability. Graduate students are expected to have a background in and understanding of large-scale systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 456 or IEE 556 or IEE 598 (Intro to Systems Engineering)
IEE	561	Production Systems	Understanding how factories operate, how performance is measured, and how operational changes impact performance metrics. Operational philosophies, increasing production efficiency through quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	570	Advanced Quality Control	Process monitoring with control charts (Shewhart, cusum, EWMA), feedback adjustment and engineering process control, process capability, autocorrelation, selected topics from current literature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	571	Quality Management	Total quality concepts, quality strategies, quality and competitive position, quality costs, vendor relations, the quality manual, and quality in the services.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	572	Design Engineering Experiments	Analysis of variance and experimental design. Topics include strategy of experimentation, factorials, blocking and confounding, fractional factorials, response surfaces, nested and split-plot designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	573	Reliability Engineering	Nature of reliability, time to failure densities, series/parallel/standby systems, complex system reliability, Bayesian reliability, and sequential reliability tests.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	574	Appl Deterministic Oper Rsch	Develops advanced techniques in operations research for the solution of complex industrial systems problems. Goal programming, integer programming, heuristic methods, dynamic and nonlinear programming.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Industrial Engineering MS, MSE or PhD student
IEE	575	Appl Stochastic Oper Rsch Mdls	Formulate and solve industrial systems problems with stochastic components using analytical techniques. Convolution, continuous-time Markov chains, queues with batching, priorities, balking, open/closed queuing networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	576	Network Optimiz and Algorithms	Algorithms to solve network flow problems with an objective to improve computational complexity by using appropriate data structures and computing procedures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 576 or IEE 598 (Network Flows and Algorithms) or IEE 598 (Network Optimization and Algorithms)

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IEE	577	Data Sci Sys Decision Analyt	Focuses on applied data science techniques for the system decision support in PYTHON. Also targets anyone who is interested in data analytics in general or plans to work with data in a future career (such as data scientist and data analytics). Highly encourages some prior knowledge about PYTHON. Focuses on the conceptual understanding of system modeling, statistical and machine learning, and optimization with some mathematical formulation. Also covers the main concept and some implementation of the latest development in data science, such as distributed computing, large-scale optimization, and deep learning. Furthermore, covers how to implement these models for different types of data, such as tabular data, images, text data. Finally, discusses how to interpret these models for decision support of complex systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	578	Regression Analysis	Regression model building oriented toward engineers and physical scientists. Topics include linear regression, diagnostics, biased and robust fitting, nonlinear regression.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	579	Time Series Analy/forecasting	Forecasting time series by regression-based, exponential smoothing, and ARIMA model techniques; uses digital computer programs to augment the theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	581	Six Sigma Methodology	The six sigma process improvement strategy of define, measure, analyze, improve, and control (DMAIC). Integrates and deploys statistical methods and other six sigma problem solving via the DMAIC framework. Requires background in undergraduate engineering statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	582	Response Surfaces/Process Opt	Classical response surface analysis and designs including steepest ascent, canonical analysis, and multiple responses. Other topics include process robustness studies, robust design, and mixture experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better
IEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	585	Six Sigma Capstone	The DMAIC (define, measure, analyze, improve, control) improvement strategy is applied in the formulation and execution of a six sigma project.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student; IEE 530, 561, 572, 573, or 578; IEE 570; IEE 581
IEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		Prerequisite(s): Engineering graduate student
IEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IEE	605	Foundations of Information Sys	Introduces science and engineering technologies of information systems design and analysis with focus on industrial engineering applications. Topics include: design and analysis of computational algorithms; and data mining techniques for classification, clustering, feature extraction and data reduction problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): graduate Industrial Engineering student
IEE	620	Optimization I	First course of the PhD-level deterministic course series. Covers foundations of optimization and linear programming. Prior working knowledge of linear algebra and knowledge of how to formulate linear programs is required for this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	622	Optimization II	Introduces computational methods to solve optimization problems with integer variables and the mathematical theory behind them. Follows formulation of integer programming models with a survey of relaxation, decomposition and cutting-plane methods. Discusses various practical problems such as facility location, transportation and distribution problems. Assigns computational examples using the software IBM ILOG OPL.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 620; Credit is allowed for only IEE 622 or 598 (Optimization II)
IEE	640	Prob. & Stochastic Processes	Presents fundamentals of probability and stochastic processes from a non-measure theoretic point-of-view to develop (a) basic model building and probabilistic reasoning skills, and (b) an understanding of important qualitative characteristics of some basic stochastic processes used to model dynamical systems with noise. Topics include a review of probability theory with particular attention to conditional probability and expectation; Markov chains; Renewal theory and the Poisson process. Considers applications in reliability, inventory theory, queueing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 470, Graduate Industrial Engineering major; Credit is allowed for only IEE 598 (Prob & Stoch Model) or 640
IEE	670	Mathematical Statistics	Introduction to the field of mathematical statistics at a level intended for first-year PhD students in Industrial Engineering. Builds a solid background in the principles, concepts, and techniques of mathematical statistics. Prepares students for advanced study and research in statistics, and is useful for understanding statistical data analysis techniques and developing statistical thinking. Completion of at least one course in probability and statistics is required prior to taking this class.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	672	Adv Topics-Experimental Design	Multilevel and mixed-level factorials and fractions, design optimality, incomplete blocks, unbalanced designs, random effects and variance components, analysis of covariance.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better
IEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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IFT	100	Intro to Info Technology	Project-based introduction to the key concepts, tools and devices underlying today's technologies. Introduces computer hardware, software and system architecture, the Internet, the World Wide Web and information technology ethics. Forms a foundation for future courses offered in the Information Technology major and the information technology discipline.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	101	Info Tech Programming Logic	Introduces basic analysis and synthesis procedures for an understanding of information system logical structures. Topics include: identifying organizational domains for potential automation, informational descriptions (scenarios) of those domains, and program structure and logical designs for potential problem/opportunity resolution. Uses graphical and textual models to express the logic and uses Python to implement the logic.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Credit is allowed for only IFT 101 or IFT 194 (Information Technology Programming Logic) OR Visiting University Student
IFT	103	OS Architecture	Introduces Linux, Windows and Mac operating systems. Begins with an overview of the hardware of modern computer and operating systems. Also introduces user management, memory management, network and disc storage. Provides hands-on practices to introduce computer and operating system virtualization. Provides an isolated environment to practice and do labs on advanced topics in the field of memory management, different portable data file input/output. Students learn Command Line Interface (Bash/Power Shell) to interact with computers and transfer data files from one operating system to another operating system. Also introduces basic computer networking and hardware security.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	166	Intro to Internet Networking	Introduces the OSI model and the protocol layers associated with information communication technology. Describes the role and purpose of each layer. Covers various network topologies, communications protocols, transmission media, networking hardware and software, network management and troubleshooting. Students gain hands-on experience in basic network configuration.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	200	Info Model, Store & Retrieval	Covers the different types of data modeling with emphasis on the relational model. Develop solutions for data modeling problems, starting with identifying user and data requirements. Fundamentals of database design going through the conceptual, logical and physical data modeling steps. Create relational databases in order to store data. Utilize Structured Query Language (SQL) to represent, retrieve, and manage a database. Students learn how applications connect to databases, and interact with them.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student
IFT	202	Fdn of Info and Comp Sys Secur	Introduces information technology (IT) security aspects and how technology can be vulnerable to unwanted intrusions. Project-based introduction to privacy, ethics, legal, social and professional responsibilities for information technology. Principles of information security and assurance and their implications on access. Tools and methods to identify intrusion, best security practices. Securing communications and applications.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better; IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student
IFT	210	Intro to Java Technologies	Introduces Java as a platform for application development. Fundamental concepts of the Java language (classes, objects, conditions, loops, arrays), object-oriented programming and design (inheritance, polymorphism, interfaces), exceptions, and basics of the user interface programming.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student
IFT	220	Man Config & Active Dir	Introduces the concept of Directory Services by exploring Active Directory from design and implementation. Further explores the role Active Directory plays in managing computer policy and security, user's identity management and authentication, and configuration management of both client computers and servers. Introduces the use of PowerShell scripting. Students implement their own Active Directory domain and then use it to perform various configuration management tasks. Assumes no previous experience with Configuration Management concepts or Active Directory.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student

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IFT	250	Intro to UNIX Utilities	Technical overview (introduction) to Unix-style operating systems such as Linux. Covers a broad range of features of the operating system from core system technologies such as the Filesystem Hierarchy Standard (FHS), to using the shell and common Unix/Linux utilities to accomplish day-to-day computing tasks. Includes output redirection, file manipulation, basic system and environment configuration, and system monitoring. Assumes no prior experience with the Unix operating system.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better OR Visiting University Student
IFT	266	Network Info Comm Tech	Focuses on the physical layer, data-link layer and network layer of the OSI model. Introduces data communications, including signals and transmission impairments. Also introduces network topologies and local-area networks with particular attention on the network switch. Network layer protocols (IPv4 and IPv6) are included with focus on IPv6. Subnetting (classful and classless) are explored in more detail and Variable Length Subnet Mask) VLSM is introduced.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 166 with C or better OR Visiting University Student
IFT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	300	Intermediate DB Mgmt Systems	Fundamental methods in managing data-oriented systems. Relational, object and hierarchical data architectures. Query languages including SQL. Semantics of transaction processing. Database system architectures including cloud-based, client-server and embedded databases. Security and privacy issues associated with SQL-structured databases. Modern trends in data management including unstructured data type management, data mining and business analytics. Describes NoSQL data management platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student
IFT	301	Web Programming for HCI	Human-computer interaction design for rich media systems. Design processes, tools and principles for applications that are highly interactive with their users and which include multiple input/output modalities and multimedia. Project-driven course. Key topics include wireframes and persona structures associated with HCI.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better OR Visiting University Student
IFT	310	Info Systems Project Dev	Intense review of information technology organizational management; project development for IT infrastructure, management and security systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 202 or 394 (Intro to Cyber Security) with C or better; IFT 266 or 394 (Networking Character & Protocols) with C or better OR Visiting University Student
IFT	320	Managing the Cloud	Provides a hands-on comprehensive study of Cloud concepts and capabilities across the various Cloud service models including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Studies the latest solutions for cloud computing developed by Google, Amazon and Microsoft.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 202 or 394 (Intro to Cyber Security) with C or better; IFT 266 or 394 (Networking Charac & Protocols) with C or better OR Visiting University Student
IFT	360	Applications in AI	Artificial Intelligence (AI) is one of the most exciting technologies, both shaping and challenging the future of our industries and workforce. AI is a multidisciplinary area comprising theoretical, experimental and applied investigations of intelligent systems. Converging technologies along with natural language processing, big data and the Internet of Things (IoT) are driving the growth of AI. An introductory course in AI is a good place to start as it gives students an overview of the components, brings students up to speed on the AI research and developments to date. Covers examples of AI in use today such as Web crawlers, how humans detect financial frauds, self-driving cars, facial recognition systems, and natural language processors. Provides hands-on experience with the AI programming of different intelligent agents.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 210 with C or better OR Visiting University Student
IFT	365	Applied Programming Lang IT	Object-oriented programming (OOP) with a focus on advanced techniques used in developing applications. Emphasizes problem solving using the software development life cycle. Supports application creation and testing through study of programming basics, data structures and OOP fundamentals resulting in a framework of collection classes students use to solve problems and create applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 210 with C or better OR Visiting University Student

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IFT	366	TCP/IP and Routing	In-depth study of the TCP/IP protocol suite and router technology. Covers the underlying applications, components and sub-protocols that make up the TCP/IP suite. Emphasizes the fundamentals of routing, router configuration, understanding routing protocols and setting up access control lists.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 or 394 (Networking Charac & Protocols) with C or better OR Visiting University Student
IFT	370	Mobile Computing & Apps for IT	Infrastructure and architecture of mobile computing, wireless protocols, design principles, patterns and practices for mobile app development Android and iPhone platforms. Presents the development processes for both types, focusing on Android development with Java in providing hands-on development of applications in support of an applied practice learning experience.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 210 with C or better; IFT 301 with C or better OR Visiting University Student
IFT	372	Wireless Fundamentals	Foundational course in wireless networking includes systems-level coverage of advanced information communication technology (ICT) focusing on digital wireless communications systems used in today's ICT networks. Introduces communication techniques that allow high-speed mobile connectivity. Includes topical areas in noise, modulation techniques, signal path loss, basic antenna theory and other similar topics required to understand how a wireless network architecture is developed. Also introduces the characteristics of both Wi-Fi based systems and smart phone-based systems. Specific topics include: binary communications, QPSK, PCM, TDM, QAM, OFDM, OFDMA and the wireless environment. Lays the foundation for fully understanding how to create and develop a wireless network.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 or 394 (Networking Character and Protocols) with C or better OR Visiting University Student
IFT	380	Advanced Systems Config Mgmt	Explores in-depth advanced configuration management concepts and methods of deploying, configuring, monitoring and reporting on systems (both servers and workstations). Utilizes widely used CM tools to help illustrate and study patch management, application deployment, OS deployment, remote control, configuration baselines, drift remediation, inventory management and compliance reporting. Uses PowerShell as a scripting language. Assumes previous experience with directory services and PowerShell and introduces query languages without expecting prior experience.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 220 with C or better OR Visiting University Student
IFT	381	Information System Security	Fundamental course in information systems security that focuses on various security concepts. Students learn about intrusion systems and techniques to identify and help limit incursions. Familiarizes students with the different types of firewalls and their applications in the network. Details software security, hacking techniques and operating systems security. Moreover, emphasizes the initial security and privacy issues of some new technologies such as cloud computing, fog computing, Internet of Things (IoT), and blockchain. Finally, presents the fundamentals of AWS security testing.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 202 or 394 (Intro to Cyber Security) with C or better OR Visiting University Student
IFT	383	Shell and Script Program/UNIX	UNIX operating system programming of shells, environment and 4th-generation languages and tools, such as sed, awk, perl, grep, make.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 250 with C or better OR Visiting University Student
IFT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	401	Info Tech Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s) with C or better: IFT 250; IFT 266 or 394 (Networking Characteristics & Protocols); IFT 300 (IFT 433); IFT 301; IFT 310; IFT 381; minimum senior standing
IFT	402	Info Tech Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 401 with C or better
IFT	410	Big Data Tools and Practices	Architecture of Hadoop clusters at both the hardware and system software levels. Applies Hadoop and related Big Data technologies such as MapReduce, Pig, Hive and Impala in developing analytics and solving the types of problems faced by enterprises today. Expects programming experience in Java or Python and a general understanding of databases, networking and distributed systems.	N		LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better OR Visiting University Student

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IFT	420	Cloud Architecture Info Tech	Cloud technology has increased usability and reduced the cost of computing for global business environments. Leveraging the interoperability and rapid time to deployment allows for a high level of availability and scalability. Provides an overview of the methodologies and techniques that address cloud automation, design patterns, and optimization which are used to build a well-architected cloud computing environment. Students have the opportunity to learn how to deploy a fault-tolerant, efficient and scalable cloud infrastructure that considers important factors as security, reliability and high availability. Leverages the AWS Academy Cloud Architecting course, which supports students in preparing for AWS Certified Solutions Architect - Associate exam.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; IFT 366 with C or better OR Visiting University Student
IFT	421	Data in the Cloud Info Tech	Examines the architecture, frameworks and tools used to develop, analyze and communicate data using cloud services. Topics include the benefits, risks and opportunities represented by cloud technologies as well as the unique tools and infrastructure. Also covers cloud data solutions, data acquisition, migration, security, identity management and disaster recovery.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; Pre- or corequisite(s): IFT 300 with C or better if completed OR Visiting University Student
IFT	422	Cloud Security & Operations IT	Cloud security solutions are required to address availability, authentication, integrity, confidentiality and auditing. It starts with a combination of operating system virtualization, processes automation and dynamic response to changing business conditions. Covers the way traditional models of security, governance, and operations have changed due to the fact that the cloud user and the cloud provider both hold responsibilities for the security measures. Provides an overview of the methodologies and techniques to create and maintain a secure well-operated cloud computing environment. Students have the opportunity to learn how to manage, secure and scale cloud infrastructures and their underlying functions for scaling, container computing, monitoring, database services and account security. Leverages the AWS Academy Cloud Operations course, which supports students in preparing for the AWS SysOps Administrator - Associate exam and (ISC)2 CCSP exam.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; IFT 381 with C or better OR Visiting University Student
IFT	443	Analyzing Big Data	Data mining and statistical techniques that arise in data analytic applications. Students learn and practice working with big data using data analytic techniques presented in earlier coursework. Discusses one or more applications associated with data analytic techniques. Practices using advanced techniques that build on the knowledge provided in earlier coursework and knowledge gained from a statistical methods course. Familiarity with databases and statistics are essential.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 410 (IFT 333) with C or better OR Visiting University Student
IFT	458	Middleware Prog & Database Sec	Covers the main concepts of middleware technologies. Includes the various methodologies used to integrate applications, databases and Web services. Students develop multilevel applications using programming/scripting languages (such as PHP, Java, Python, Perl) which access data stored in a database. Middleware programs typically control database access and protect database SQL programs from security breaches. Students access the data from applications and other Web technologies such as XML, as well as protecting the data from unauthorized access.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): Graphic Information Technology (Full-Stack Web Development) BS major; GIT 215 with C or better OR IFT 301 with C or better; IFT 383 with C or better; Credit is allowed for only ACO 321 or IFT 458 OR Visiting University Student
IFT	460	Mnging Intel Device Entpr Env	Systems and devices with unique identifiers that are connected to the Internet. Hands-on study of enterprise-related intelligent applications including energy, logistics, industrial control, retail and agriculture, among multiple domains. Includes the development of working code for real-world Internet of Things (IoT) applications. Requires high-level programming skills. Incorporates a taxonomy of IoT systems with increasing levels of complexity. Programming aspects of IoT devices and rapid prototyping follows the foundational information. Covers IoT data analytics and tools used to manage these intelligent devices.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s) with C or better: IFT 200; IFT 202; IFT 250; Credit is allowed for only IFT 460 or IFT 494 (Managing Intelligent Devices in an Enterprise Env) or IFT 598 (Managing Intelligent Devices in an Enterprise Env) OR Visiting University Student

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IFT	466	Adv Computer Networks Info Tec	Redundancy protocols, QoS and the implementation of wide area networks. Focuses on advanced concepts and implementation of EIGRP, OSPF, BGP and extended ACLs. Also covers in detail implementing routing from an IPv6 perspective. Additional topics include cloud computing and SDNs.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 366 with C or better OR Visiting University Student
IFT	475	Security Analysis	Processes used in cyber security analyses. Presents through exercises techniques to ensure confidentiality, integrity and availability. Includes vulnerability assessments based on faulty software design. Explores malicious code and computer crime, including operating system (OS) root kits. Students are instructed in how to conduct analyses in support of cyber security initiatives.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 381 with C or better OR Visiting University Student
IFT	482	Network Forensics	Use and creation of advanced network forensics tools: intrusion detection and prevention, honeynets, traffic routing and management, and data reduction and graphing tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 475 with C or better; Credit is allowed for only ACO 331 or IFT 482 OR Visiting University Student
IFT	483	Developing Security Policy	Focuses on development of security policy, risk solutions and incident response facilities. Using the information security framework, identifies strategies and processes used in governance, risk management, asset management, human resources and physical security to create, evaluate and audit security policies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 381 with C or better OR Visiting University Student
IFT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		
IFT	488	Systems Administration of UNIX	UNIX administration of system and user services using command line and GUI tools. System security and forensics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 383 with C or better OR Visiting University Student
IFT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6		Prerequisite(s): Barrett Honors student
IFT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IFT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-3		
IFT	510	Princ of Comp & Info Tech Arch	A comprehensive introduction to computer and information technology architectures. Provides a detailed understanding of computer architecture, system software and network architecture, including the relationships among these IT-related entities. Forms a technical foundation for understanding current IT-related technologies and how they work as an integrated system. Begins with the historical study of computing and networks and progresses through computer and networking architecture. Topics include principles of a computer's physical and operating system architecture and its relationship to a network's architecture, including hardware and software functionalities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	520	Adv Info Systems Security	Advanced methods that can be used to make the information secure in different environments. Provides details about modern cryptographic algorithms and their applications to make the IoT, Cloud and Big data information secure. Also provides comprehensive information about how to make wireless networks secure, different case studies and application in a real environment. Finally, covers the human aspect of information security for identifying issues and developing real solutions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IFT	530	Adv DB Management Systems	Teaches advanced concepts of database management systems, for example, further dependencies and higher normal forms, indexing, transaction and locking, concurrency control, database security, backup and recovery, accessing XML data, query optimization techniques, and databases for web applications. Students expand their SQL programming knowledge through focused database design practice with an increasingly complex problem and solution set using Microsoft SQL Server. Introduces NoSQL for SQL developers and about unstructured "big data" databases and hands-on experience with MongoDB. Project-driven course builds on the background presented in Software Development for Information Technology. Familiarity with information modeling and software development process is essential.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	540	Info Systems Development	Proven techniques and methodologies for modeling information requirements and organizational data resources with a strong focus on gleaning information from data. Students learn how to discover, document and structure functional system requirements and user interface requirements at a level appropriate for advanced information technology practitioner, and develop conceptual data models. Covers the phases of a generic systems development life cycle (SDLC), object-oriented analysis and design (OOAD) with UML modeling, and Agile methodologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	545	Advanced Security Analysis	Advanced inspection of concepts and exercises related to security analysis. Expands analysis techniques to include wireless protocols, interception techniques, man-in-the-middle attacks, forgeries, cloned and replay attacks, cyber warfare, data corruption, data leakage and peer-to-peer networks. Through a variety of exercises, students work with tools and technologies available on the commercial market. The teaching environment is designed to impart the skills required by a corporate security professional.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		
IFT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IGD	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	601	Re-Thinking Global Development	Traces and analyzes the origins of international or global development as theory, concept, policy and practice. Studies the key theories that have been influential in development conceptualization and policy, within the context of the history in which they arose; evaluates the results; and considers future trends and scenarios considering the critiques of such mainstream approaches.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	602	Innovation for Inclusive Devel	Clear advances in economic, social and political development and wealth generation have been uneven, and have resulted, as well, in an increasing gap between wealth and poverty. Continuing in the same direction could exacerbate existing problems, and in this course, we imagine different future outcomes and how to make policy today for a better future.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	603	Methods-Research Global Devel	Provides a practical introduction to research methods and methodologies in global development. Through hands-on exercises, exposes students to issues around quantitative and qualitative data collection and management, analysis and interpretation of results, and research ethics and practice in development as well as application of research to policy development and its implications.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	604	Colloquium-Innovation Glob Dev	This student-centered and faculty-mentored colloquium provides critical opportunities for leadership, organization, planning and implementation of events related to global development studies. Encourages students to propose and plan their own events, focused on issues and topics of importance to them, and utilizing the resources on the ASU campus and Phoenix area.	N	SEM	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection, analysis and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	120	Drawing for Industrial Design	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for industrial design thinking.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design BS or Industrial Design BSD major OR Visiting University Student
IND	121	Principles-Industrial Design I	Industrial design as a language and process for creative thinking and realization.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Industrial Design major. Corequisite(s): IND 122
IND	122	Prin for Industrial Design II	Continued exploration of industrial design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): IND 120 with C or better; Environmental Design or Industrial Design major. Corequisite(s): IND 121
IND	227	Visual Methods-Problem Solving	Introduces conceptual design activity based on the mind-eye-media feedback loop. Graphic language used to represent conjecture, analysis, synthesis of objects, and their contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major, IND 122 with C or better; Passed Milestone; Corequisite(s): IND 260 OR Visiting University Student

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IND	228	Imaging and Visualization	Design activities stressing graphic language abstraction practiced for presentation. Discusses structure of criticism, including description, interpretation, and evaluation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 227 with C or better; Co-requisite: IND 261
IND	242	Materials and Design	Materials application in design. Introduces characteristics and properties of metals and organic materials, including plastics, and inorganic materials.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	243	Design - Ecology&Social Equity	Explores the role of design in the ecological crisis; materials, processes, strategies and methods to design more ecologically friendly and socially equitable products.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	260	Industrial Design I	Introduces the method and process of the industrial designer. Determinants necessary in small product design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; IND 122 with C or better; Passed Milestone; Corequisite(s): IND 227 OR Visiting University Student
IND	261	Industrial Design II	Issues of physical form development related to product and design; form development properties of paper, fibers, wood, metal, and plastics.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 260 with C or better; Co-requisite: IND 228
IND	316	20th-Century Design I	European and American design from 1850 to 2000 with thematic emphases on worldview, technology, transportation, economics and nature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
IND	317	20th-Century Design II	European and American design from 1850 to 2000 with thematic emphases on communication, education, material culture, politics and society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours
IND	327	Presentation Graphics	Studies methods for portfolio and professional product presentation using graphic media for information transfer. Stresses aesthetic judgment, organization, and craftsmanship .	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; Corequisite(s): IND 360 OR Visiting University Student
IND	328	Graphics for Industrial Design	Investigates and applies applications and planning to the development of an identity for a product line structured as a system.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 327 with C or better; Co-requisite: IND 361
IND	344	Human Factors in Design	Man-machine environment systems; human characteristics and behavior applied to design of products, systems, and their operating environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	354	Principles of Product Design	Influences of physical and mechanical concepts in product design; mechanisms, kinematics, and fastening systems. Concepts of analysis for product design. Influences of concepts on aesthetics.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Digital Culture (Design) BA, Industrial Design BSD, or Pre-Industrial Design major; PHY 111 with C or better
IND	360	Industrial Design III	Methods of visual thinking, conceptualization, and ideation related to building skill levels in professional design presentation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 261 with C or better; Corequisite(s): IND 327 OR Visiting University Student
IND	361	Industrial Design IV	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials, and manufacturing.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Industrial Design student; IND 360 with C or better; Co-requisite: IND 328
IND	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IND	424	Packaging Design	Reviews how companies package and brand their products to attract consumers. Students examine the packaging design of their choice of product in the marketplace and create packaging design by considering user experience, sustainability aspect, materials and branding. Final-review format includes a full-scale 3D mockup of the packaging redesign, supplemented with graphical data and drawings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design, Industrial Design, or Interior Design major; minimum 60 hours; Credit is allowed for only IND 424 or IND 494 (Packaging Design) or IND 494 (Product Branding for Package Design)
IND	460	Design Project I	Complete analysis of the product unit as an element of mass production, featuring marketing, technology, human factors, and visual design. Emphasizes professional standards.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 361 with C or better; Corequisite(s): IND 484; IND 470 OR Visiting University Student
IND	461	Design Project II	Product design, with emphasis in systems interaction. Culmination of design process and technique. Encourages individual project direction.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 460 with C or better
IND	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
IND	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student

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IND	470	Prof Practice-Industrial Design	Business procedures, management techniques, accounting systems, ethics, and legal responsibilities of the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Design Studies minor student; ENG 101, 105, or 107 with C or better OR Industrial Design BSD major; ENG 101, 105, or 107 with C or better; Corequisite(s): IND 460 OR Visiting University Student
IND	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Industrial Design major; IND 361 with C or better; Corequisite(s): IND 460 or 464
IND	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
IND	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IND	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IND	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
IND	504	Contemporary Issues IND Design	Survey of contemporary design issues in industrial design as defined by the faculty and students.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design student; Corequisite(s): IND 521; Credit is allowed for only IND 504 or IND 598 (Industrial Design Seminar: Contemporary Issues)
IND	510	Foundation Ind Design Studio	Fundamentals of industrial design, methodology, visualization and representation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 510 or IND 590 (Foundation Industrial Design Studio)
IND	511	Core Industrial Dgn Studio I	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials and manufacturing.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 510 with C or better; Credit is allowed for only IND 511 or IND 590 (Core Industrial Design Studio I)
IND	512	Core Industrial Dgn Studio II	Industrial design projects with an emphasis on research and visualization techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 511 with C or better; Credit is allowed for only IND 512 or IND 590 (Core Industrial Design Studio II)
IND	516	The Culture of Objects	Examines the meanings of objects from the perspectives of design, material culture, philosophy and cultural studies. Covers such concepts as form language, planned obsolescence, object fetishism, product semantics, consumer value, production labor and user needs. Explains these ideas theoretically but also with case studies of historical and contemporary objects. Looks behind the scenes and beneath the surface at some of our most familiar and iconic objects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design (Industrial Design or Interior Design or Visual Communication Design) student; Credit is allowed for only IND 516 or DSC 598 (The Culture of Objects)
IND	521	Adv Industrial Des Studio I	Design language, motivation and inspiration, form exploration sketching, rough form study mock-ups, form development, and presentation. Product redesign. Students create new design language proposals for an existing product and redesign the product based on one of these languages. Provides instruction and opportunities to understand product design language and how to redesign existing products with different design guidelines. Results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Industrial Design major. Credit is allowed for only IND 521 or IND 590 (Advanced Industrial Design Studio I)

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IND	522	Adv Industrial Des Studio II	New product development with emphasis on design research, problem solving and functional/aesthetic development. Preliminary research about human behavior and health promotion. Based on the research findings, students conduct design research in teams and work on individual design projects. Student project results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and final appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion, and the public exhibition and presentation of design work.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 521. Corequisite(s): DSC 501. Credit is allowed for only IND 522 or IND 590 (Advanced Industrial Design Studio II)
IND	532	Solving Problems with LCA	Teaches the method known as Life Cycle Assessment (LCA), which quantitatively estimates the environmental health and human health performance of materials, energy sources and processes. This science-based method informs design teams how to reduce or eliminate complex environmental problems caused by the production, use and disposal of physical products and related services. Teaches attributional LCA that conforms to ISO 14040-series LCA guidelines.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; IND 522 OR Master of Science in Design (Industrial Design) student; Credit is allowed for only IND 532 or IND 598 (Solving Problems with LCA)
IND	544	Human Factors Sys/Documentatn	Advanced topics associated with theory and methods of human factors in design. Individual projects stressing problem organization, evaluation, and documentation.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
IND	548	Design for Sustainable Dev	Research on designing systems that are economically viable, ecologically friendly, and socially equitable.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	550	Furniture Design	Explores furniture design and production methods for industrial design.	N		SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 550 or IND 598 (Furniture Design)
IND	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	621	Adv Industrial Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to identify new design concepts that improve society and the natural environment while also delighting users and creating value for business. For approximately one week, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 522
IND	622	Adv Industrial Des Studio IV	Challenges students to create new design concepts that improve society and the natural environment while also delighting users and creating value for business. Requires some independent direction by the student; however, instructor assigns deadlines and expectations for deliverables, and requires cooperation and collaboration among students. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 621

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IND	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	111	Interior Dsgn Issues/Theories	Interiors issues, theories, and philosophies. Emphasizes unique social and cultural factors that shape 20th-century design concepts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
INT	120	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student
INT	121	Intro Cmprtr Modl-Interior Dsgn	Computers in interior design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	
INT	122	Principles of Design	Applied visual vocabulary: studio experience exploring applications, process and conceptual development of the principles of order and composition.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Interior Design major; INT 120 with C or better; Corequisite(s): INT 124
INT	123	Introduction to CAD and BIM	Introduces AutoCAD computer-aided design and Revit building information modeling principles and strategies for designers of the built environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
INT	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
INT	131	Design and Human Behavior	Applies conceptual design to issues of programming and space planning, user needs, and behavior.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	SB	
INT	223	Drafting for Interior Design	Orthographic, paraline, axonometric, and perspective projection; shades and shadows; and basic descriptive geometry for interior designers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Passed Milestone; Corequisite(s): INT 261 OR Visiting University Student
INT	253	Interior Matrls/Finishes/Spec	Survey, evaluation, and specification of materials, finishes, and performance criteria for interiors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; INT 261 with C or better
INT	261	Interior Design Studio I	Studio problems in interior design related to behavioral response in personal and small-group spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; passed milestone; Corequisite(s): INT 223 OR Visiting University Student
INT	262	Interior Design Studio II	Focuses on environments that entertain or host the public, including but not limited to nightclubs, restaurants, theaters, hotels, city and country clubs, golf facilities, cruise ships and conference facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; INT 261 with C or better OR Visiting University Student
INT	310	History of Interior Design I	Evolution of interior design as an expression of cultural influences from the ancient periods to 1835. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
INT	311	History of Interior Design II	Evolution of interior design as an expression of cultural influences 1835 to present. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Pre-requisite(s): INT 310 with C or better
INT	341	Interior Codes:Public Welfare/	Codes and regulations as performance criteria for interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisite: Interior Design student; Co-Requires: INT 253; INT 262
INT	351	Ambient Environment	Surveys environmental control systems, acoustics, and lighting issues.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; PHY 101 with C or better; Corequisite(s): INT 352; INT 362 OR Digital Culture (Design) BA major OR Visiting University Student
INT	352	Construct Methods/Inter Desig	Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 362 OR Visiting University Student
INT	354	Construction Documents	Elements of construction drawing sets, application of codes and specifications, and contract administration.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Interior Design student; Co-requisite: INT 363
INT	362	Interior Design Studio III	Investigates interior design issues in hospitality and retail environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 351; INT 352 OR Visiting University Student

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INT	363	Interior Design Studio IV	Explores the poetics of materials and their assemblage in the design of public and private spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 362 with C or better; Corequisite(s): INT 354
INT	381	Preinternship Seminar	Preparation of internship materials that produce and enhance a successful internship experience.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite: INT 262
INT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	412	Hist Decorative Arts-Interiors	Design of decorative arts as an expression of cultural influences and as an extension of interior spaces.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): INT 311 with C or better. Credit is allowed for only INT 412 or INT 515
INT	413	Hist Textiles-Interior Design	Cultural and historical expression of textiles as related to interiors.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 412 with C or better. Credit is allowed for only INT 413 or INT 516
INT	415	Latin American Design	The impact of Latin American culture and civilization on design throughout the Americas.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum junior standing. Credit is allowed for only INT 415 or INT 494 (Design and Culture in Latin America) OR Visiting University Student
INT	446	Furniture Design & Production	Design, construction, cost estimating, and installation in interior furniture and millwork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Graphic Design BSD, Interior Architecture BSD or Industrial Design BSD student
INT	464	Interior Design Studio V	Studio problems in interior design-related issues in work environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 363 with C or better; Corequisite(s): INT 471 OR Visiting University Student
INT	465	Interior Design Studio VI	Advanced interior design problem solving related to institutional facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 464 with C or better; Corequisite(s): INT 472 OR Visiting University Student
INT	471	Facilities Management	Facility management process in large-scale organizations. Planning, long-range forecasting, and productivity. Project management methodologies using micro-based software programs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
INT	472	Prof Practice/Interior Design	Business procedures, project control, fee structures, and professional product liabilities.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisites: Interior Design student; Co-requisite: INT 465
INT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Interior Design BSD major; INT 363 with C or better
INT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
INT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
INT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
INT	510	Foundation Int Arch Studio	Fundamentals of interior architectural design, methodology, visualization and representation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Interior Architecture MIA student; Credit is allowed for only INT 510 or INT 590 (Foundation Interior Architecture Studio)
INT	511	Core Int Arch Studio I	Applies design fundamentals in interior architectural problems, including construction, materiality, technology, programmatic and environmental determinants.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Architecture MIA student; INT 511 with C or better; Credit is allowed for only INT 511 or INT 590 (Core Interior Architecture Studio I)
INT	512	Core Int Arch Studio II	Applies interior architectural design fundamentals to increasingly complex problems, including specific sites and activities.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Interior Architecture MIA student; INT 511 with C or better; Credit is allowed for only INT 512 or INT 590 (Core Interior Architecture Studio II)
INT	519	Designing with Materials	A comprehensive overview of technical specifications, materiality and interior construction; emphasizes the selection and specification of interior building materials.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Architecture MIA student; Corequisite(s): INT 521; Credit is allowed for only INT 519 or INT 598 (Contemporary Issues in Interior Arch Seminar)
INT	520	Pro Practice for Interior Arch	Business procedures, project control, fee structures and professional product liabilities.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	2		Prerequisite(s): INT 521; Credit is allowed for only INT 520 or INT 598 (Professional Practice for Interior Design)

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INT	521	Adv Interior Arch Studio I	Studio problems in interior architecture related to the integration of building structure and systems with the behavioral response to personal spaces.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Interior Architecture major. Credit is allowed for only INT 521 or INT 590 (Advanced Interior Architecture Studio I)
INT	522	Adv Interior Arch Studio II	Investigates interior architecture issues, including construction, technology, programmatic and environmental determinants.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 521; Corequisite(s): INT 527; Credit is allowed for only INT 522 or INT 590 (Advanced Interior Architecture Studio II)
INT	527	Contemporary Design Theory	Aesthetic, political, economic, and social theories that have shaped modern design; theory as the basis for design philosophies.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	529	Design Criticism	Applies critical methods to design as material culture and human expression; evaluates achievement versus intention.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	541	Codes and Building Regulations	Codes and regulations as performance criteria for interior design.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): INT 521; Credit is allowed for only INT 541 or INT 598 (Codes and Building Regulations)
INT	550	Envir Systems of Int Arch	Surveys building environmental control systems, acoustics, materiality and lighting properties.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts graduate student; Credit is allowed for only INT 550 or INT 598 (Environmental Systems for Interior Architecture)
INT	554	Construction Docs for Int Arch	Elements of construction drawings sets, application of codes and specifications, and contract administration.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 521; Credit is allowed for only INT 554 or INT 598 (Construction Documents in Interior Architecture)
INT	558	Lighting Design	Fundamentals of lighting, which includes daylighting and artificial lighting; understanding of lighting as a design element; lighting concepts, design strategies, techniques, documentation, case studies and analysis tools.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student
INT	581	Preintern Sem for Int Arch	Preparation of internship materials, which produce and enhance a successful internship experience.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Interior Architecture student; Corequisite(s): INT 521; Credit is allowed for only INT 581 or INT 598 (Preinternship Seminar for Master of Interior Arch)
INT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	602	Research Methods for Int Arch	Seminar course in research, with a particular emphasis on quantitative and empirical methods. Students develop an appreciation for and understanding of different conceptual frameworks of design, environment and the arts knowledge; develop a knowledge of a broad range of alternative approaches to interdisciplinary research with emphasis on quantitative methods; become aware of different research methods, tools and approaches; craft a research question and transform it to a plan of research; understand the components of the research process and research proposal; develop improved skill in scholarly writing; become aware of ethical and other critical issues related to research; critically assess the strengths and weaknesses of various research studies and techniques; analyze data using several statistical methods, using statistics software.	N		SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts graduate student
INT	621	Adv Interior Arch Studio III	Structured around the Design School traveling-studio model, based on design problems emphasizing the global context of interior architecture as it influences interior space and architectural form.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 522
INT	622	Adv Interior Arch Studio IV	Individual, student-initiated capstone project reflecting a culminating synthesis of interior architecture ideas.	N		STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 621

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INT	650	Diversity and Design	Seminar-based investigation of how different aspects of embodied identities impact how spaces are designed and how people experience spaces. Explores the history of identity politics in relation to the design professions, as well as critiques of design approaches based on a universal body. Students learn about the relationship between design and, among other aspects, gender, race, ethnicity, culture, disability, age, class, gender identity, or sexual orientation. Expects students to recognize and understand what biases impact their work as designers. Critically investigates methods to assess these biases and their impact on users, as well as solutions to avoid or mitigate them.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only INT 598 (Diversity and Design) or INT 598 (Identities and Design) or INT 650
INT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IPI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0.25-4		
IPI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	296	Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward the goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Students learn how to understand a complex problem through multiple steps, to approach challenging primary content, to productively critique each other's work, and to think critically. Students meet for 2 hours per week but work extensively outside of class.	Y	LEL	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		
IPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
IPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	496	Advanced Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward our goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Each student runs an independent research project using the techniques taught throughout the course. The research project requires some knowledge creation—that is, development of ideas, supported hypotheses, observations and the like, that add to the mass of human knowledge rather than just restating it.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		Prerequisite(s): IPI 296 completed two times with C or better OR IPI 296 with C or better; HUL 250 with C or better
ISS	110	Dimensions of Social Science	Introductory survey of the disciplinary components of social science, including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only ISS 110 or ISS 302
ISS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	301	Integrated Soc Sci Rsrch Meth	Overview of the methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include data collection and data management techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	302	Scope of Social Science	Surveys the disciplinary components of social science including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 110 or ISS 302 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ISS	304	Integrated Theories Social Sci	Broad survey of the major foundational theories in the disciplines of social science, including sociological theory, economic theory, political theory, anthropological theory and philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
ISS	401	Statistics Integrated Soc Sci	Statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures and inferential statistics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): MAT 142 or higher
ISS	410	Integrative Leadership Studies	Explores the concept and practice of leadership by examining general leadership theories and personal leadership skills with a view to transcending disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	415	Knowledge Management	Overview of concepts in knowledge management, types of knowledge, processes of knowledge generation, codification and transfer. Role of technology and networks in knowledge management and effective leveraging of organizational intellectual capital.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	428	Religion and Global Violence	Examines the tensions and interplay of religious and secular accounts for violence globally; considers theoretical frameworks from the social sciences for understanding such violence.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	437	Integrative Ethics in Soc Sci	Investigates ethical issues across professional disciplines in the social sciences with a view to integrating the literature and innovations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ISS	441	Conflict&Conflict Resolution	Overview of peace theories and peace movements; peace and peacebuilding; the nature and sources of global conflicts; critical security studies (covering human, food and environmental security); mechanisms for peaceful resolution of conflicts; culture of peace; and the relationship between underdevelopment and conflicts, particularly in politically fragile societies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	450	Consumerism & Sustainable Dev	Analyzes the impact of the quest for more and better consumer goods as it affects sustainable development and global ecology.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	456	Culture, Conflict and War	Explores the complex relationship between culture and conflict through an analysis of past and present conflicts and the role of culture in those conflicts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ISS	482	Globalization&Int'l Polit Econ	Surveys the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 482 or ISS 522
ISS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 87 hours
ISS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 87 hours
ISS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
ISS	501	Adv Integrated Soc Rsrch Meth	Advanced review of methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include the scientific method, theory building and hypotheses, measurement and scaling, reliability and validity, and the structure and development of research designs and applications.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	502	Adv Seminar Integrated Soc Sci	Integrative survey of the disciplinary components of social science as disparate ways of making sense of human experience, including sociology, political science, philosophy and economics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ISS	504	Adv Integratd Theories Soc Sci	Cross-disciplinary examination of major social science theories, such as: rational choice, environmentalism, institutionalism, functionalism, sociology, world systems approach, Marxism and democratic theory. Emphasizes bridging disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	505	Adv Methodologies Social Sci	Applies advanced statistics and statistical modeling in decision making in social research, with emphasis on regression modeling techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	506	Comm Gov, Ldrshp&Civic Engagmt	Explores theory and research on community governance with an emphasis on analyzing leadership in promoting civic engagement.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	508	Knowledge,Innovation&SocChange	Surveys the sources of knowledge and knowledge generation, facilitating factors for innovations especially in the development of technologies that drive significant, universal and enduring social change.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	510	Relig,Secularism&Soc Dynamics	Analyzes the role of religion and secularism in the modern social sphere, and the social processes that govern religious belief and behavior. Emphasizes reading current research, applying relevant social theories, and deriving scientifically valid explanations for observations about religion.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	512	Adv Integrative Ethics Soc Sci	Investigates ethical issues across professional disciplines in the social sciences through an overview of recent innovations, discoveries and developments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	514	Culturi Div&Gender Undrstrndng	Reviews the epistemological, theoretical and legal premises on the concept of social justice and the cultural, racial, ethnic, gender and other bases for the agitation for social justice, including strategies in pursuit of social justice.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	516	Conflict Res, Peace Studies	Evaluates the intersection of peace, conflict and social movements through a survey of social movements that promote war or peace throughout the contemporary world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	518	Science, Tech & Social Systems	Issues, definitions and literature involved in the study of science, technology and the evolution of social systems, emphasizing contemporary issues confronting modern societies and potential solutions to resolving these issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	522	Globalization&Int'l Polit Econ	Advanced treatment of the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ISS 482 or ISS 522
ISS	562	Pol Developmnt&Underdevelopmnt	Examines the various perspectives and premises associated with efforts to promote economic and political change in different parts of the world, particularly in poor countries. Topics include population growth; migration and management; food production; shelter; education; industrialization; comparative advantage; foreign aid; and corruption.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	N	RSC	N	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	SEM	N	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ISS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	101	Elementary Italian I	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	102	Elementary Italian II	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	110	Intensive Italian I	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only ITA 101 or ITA 102 or ITA 110 or ITA 111
ITA	112	Ita Romance Lang Speakers	15-week hybrid course: 3 hours class meetings, 1 hour student self-study. Designed for students with an active competence in Spanish or another Romance language such as French, Portuguese and/or Romanian, who wish to learn the essential elements of the Italian grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension" which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities between Spanish, other Romance languages and Italian, students master the four language skills of listening, speaking, reading and writing of in Italian at a faster pace.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only ITA 112 or ITA 194 (Italian for Spanish Speakers) or ITA 194 (Italian for Romance Language Speakers)
ITA	114	Gateway to Italy	Designed for students who have no previous knowledge of Italian, but wish to attend a study abroad program in Italy or acquire novice proficiency in the Italian language along with basic notions of Italian geography, society and culture. Develops basic vocabulary that enable students to engage in simple, everyday conversations in order to enhance and support their Italian experience, minimize stress and reduce the culture shock. Offers an insight into a wide array of cultural norms and practices of Italy, which are essential for an initial contact with the country and serves as a stepping stone for further study.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed only for ITA 114 or ITA 194 (Gateway to Italy)
ITA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	201	Intermediate Italian I	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on both spoken and written genres of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	202	Intermediate Italian II	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on values of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	210	Intensive Italian II	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills. Class meets four times a week.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): ITA 102 with B or better or ITA 110 with C or better; Credit is allowed for only ITA 201 or ITA 202 or ITA 210
ITA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	311	Speak Italy: Lang,People,Cultr	Develops oral/aural proficiency through the study of diverse voices from Italian culture and the analysis of spoken multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	312	Write Italy:Lang,People,Cultr	Develops reading/writing proficiency through the study of various texts in Italian and the analysis of written multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; ITA 202 with C or better OR Visiting University Student
ITA	315	Italian Culture:Good,Bad&Ugly	Studies the rich diversity and complexity of Italian culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	319	Italian for Professions	Conversation and composition course in which students gain the linguistic skills necessary to work in Italy.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ITA 202 with C or better
ITA	321	Italian Renaissance Culture	Studies the new voices of Renaissance culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	Prerequisite(s): ITA 202 with C or better

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ITA	322	Modern Italian Culture	Studies the contributions of Italian thinkers to the development of modern western culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ITA 202 or 210 with C or better
ITA	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student
ITA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	413	Advanced Italian	Development and assessment of advanced spoken and written Italian proficiency through activities using all four skills.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 311 or 312 with C or better
ITA	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
ITA	420	Italian Cinema	Major trends of Italian cinema from the post-war period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ITA	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
ITA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ITA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ITA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ITA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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ITA	550	Italian for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ITA 494 (Italian for Reading Knowledge) or ITA 550
ITA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	525	Fund of Entrepreneurial Leader	"Experiential" course for students to practice "being" a leader at the personal, interpersonal and community levels. While typical leadership classes leave one knowing about leaders and leadership, this class leaves students being leaders as part of their natural self-expression. The program follows an ontological pedagogy, rather than epistemological one. Ontology is the study of the nature and function of being "as lived" in real time. Epistemology by contrast deals with the varieties, grounds, and validity of knowledge. Leadership skills include mastery of communication at each of the three levels, from personal relationships to large-scale messaging for media and branding; and looking beyond the personal and interpersonal sociological level of analysis to incorporate principles of social and environmental justice into their relationships and the enterprises they lead.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; Corequisite(s): IVD 560
IVD	560	Innovation Studio I	A prerequisite for successful innovation and venture development is a deep understanding of the multidimensional context in which the innovation will be situated, and in which the venture will compete, whether a commercial enterprise or nonprofit. This course gives students the design, business and engineering research and evaluation tools and experience to investigate and immerse themselves in industry or sector customer needs, the competitive landscape and cultural context, as well as ways to predict and mitigate the unintended consequences of their innovation on society and the environment. Teaches students where to begin, how to inquire, how to evaluate information they uncover, and how to use critical thinking and analysis to develop the insights that become the foundation of their venture-development journey.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student
IVD	561	Innovation Studio II	Problem reframing is essential to the innovation process, and to properly diagnosing problems so they can be investigated from multiple perspectives. It entails pushing past conventional assumptions about barriers to success, to find root causes--sometimes different problems altogether--that inspire novel, diverse approaches. Problem reframing is a powerful tool that increases the options and resources available in addressing any challenge. Students learn the difference between root causes and symptoms, understand the systems affected by and affecting their challenge, and learn to see and act on problems as opportunities for breakthrough solutions.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 560; Corequisite(s): IVD 525

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IVD	562	Innovation Studio III	In this iterative, creative "make-to-learn" phase of venture development, students explore prototyping and testing with audiences or end-users to develop feedback loops for real-time evaluation of their ideas, then synthesize learning from both successes and failures to progress toward a solution. Key components include mastery of ideation and creative development, framing strategic questions and success indicators for prototyping of services or products, evaluation of feedback and iteration of progressively more promising ideas, and evaluation of their innovations measured against the success indicators they developed. Students learn and practice prototyping service interactions as well as product innovations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 561; Corequisite(s): IVD 630
IVD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	630	Scaling Entrepreneurial Leader	The personal skills required to succeed in a small start-up environment are different from those required to run a successful enterprise or nonprofit. Many entrepreneurs do not have access to the learning that prepares them to both launch and successfully scale their venture. Complexities of board management, fostering a creative culture, codifying a communication system that becomes a source of energy and a north star for the organization, inculcating values of social and environmental justice into a culture and translating them into daily behavior are required capacities which cannot be learned in theory, only in practice. Students master the skills to lead an enterprise through the challenges of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; GRA 562 with C or better; Corequisite(s): IVD 562; IVD 660
IVD	660	Innovation Studio IV	Faced with the challenge of business model generation and prototyping, students need to define the starting points of value proposition, supply chain and customer segments. Later in the process, a clear description of the revenue model, customer relationship, key resources, key activities, key partners and cost structure complement the original value proposition design. The refinement of the newly created business model is made through a process of iteration. Students have an overall comprehension of the strategic innovation process made of (a) strategy, (b) execution, (c) tools and (d) metrics before moving to the stages of scaling and growth of the business. In order to develop a viable business model, students need to understand the costs of development, manufacturing and getting their goods or services to customers.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 560; IVD 561; IVD 562; Corequisite(s): IVD 630
IVD	661	Innovation Studio V	SCALE is translated as proportional growth of production and profit aiming at a larger market position. Understanding the timing to scale a business model is crucial to its success and scaling can be discussed in terms of market, process and team. Faced with scaling issues of their business models, students need to build their own framework—or tools—in order to make decisions concerning the whens (time) and hows (market, process, tools) of scaling. Topics covered also include, but not limited to, venture funding strategies, budgeting capital needs, developing e-commerce, CRM analytics, supply chain and operations. At the end of this semester, students present a fully developed venture, with clearly articulated market need, viable innovation based on end-user feedback, business model and plan for scale. Where relevant, students register their intellectual property through ASU, using the university's published guidelines and procedures.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): IVD 525; IVD 560; IVD 561; IVD 562; IVD 630; IVD 660
IVD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JHR	100	Intro Soc Justice Human Rights	Interdisciplinary introduction to the study of social justice and human rights through examination of materialism, intersectionality and inequality, advocacy and social change, and critical trauma studies and humanitarianism in transnational and global perspective.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
JHR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
JHR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
JHR	305	Theory Soc Justice Human Rts	Interdisciplinary survey of theories and practices of social justice and human rights in transnational and global perspective. Explores various theories of social justice and human rights and examines in-depth case studies of social injustice and human rights challenges. Also explores the future of social justice and human rights in light of global climatic and environmental change. Social sciences theories and methods combine with humanistic philosophy to understand the foundations of social justice and human rights.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours
JHR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours
JHR	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3	L & G & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
JHR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
JHR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
JHR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): minimum 45 hours
JHR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Social Justice & Human Rights MA student
JHR	501	PS Social Justice&Human Rights	Classical and contemporary theories of social justice and human rights in the context of current local, national, and international issues. Special reference made to the roles of both governmental and nongovernmental organizations in addressing social justice and human rights issues.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	506	Grant Writing	Seminar in grant writing and fund raising for social justice and human rights. Provide an introduction to the grassroots grant writing and fund raising process, with a particular focus on justice-oriented nonprofit and international nongovernmental organizations.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	510	Problem-Based Sem Social JHR	Interdisciplinary seminar examines current problems in social justice and human rights from several different theoretical and analytical viewpoints. May be repeated once for credit.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student

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JHR	511	Community-Embedded Seminar	Interdisciplinary seminar requiring students to be placed in community organizations dealing with the course issue during the semester. Emphasizes developing effective strategies for partnerships with relevant community organizations and evaluating institutional settings, policies, and procedures from the perspective of social justice and human rights.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	525	Action Research	Advanced practicum in engaged, community-embedded research and interpretive analysis. Gives students experience in the practice of engaged fieldwork as well as the writing it generates.	N	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	549	Capstone Social Just Human Rt	Culminating experience for students in the MA in Social Justice and Human Rights program. Analyzes and evaluates literature in the field and recommends practices of social justice and human rights through written and/or media projects. Includes practices of social justice and human rights within and across various organizations and local, global or transnational contexts.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Social Justice and Human Rights MA online student
JHR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Social Justice and Human Rights MA student
JHR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JMC	101	Grammar for Journalists	Grammar course specifically designed to help journalism majors master the essentials of grammar. All majors must achieve an 80 percent in the course, indicating a mastery of grammar, before they can move on to any other journalism course.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student

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JMC	102	Coding for Journalists	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
JMC	110	Principals & Hist of Journalism	Fundamental principles of journalism and the evolution of those principles through the history of the U.S. news media. By understanding the history of journalism, students learn about the most critical values of the profession. This is the first of four "values" courses Cronkite students take during the four-year curriculum.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 110 or MCO 120 OR Visiting University Student
JMC	120	Studio Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major; Credit is allowed for only JMC 120 or 194 (Studio Production) OR Visiting University Student
JMC	121	Sports Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Sports Journalism major; Credit is allowed for only JMC 121 or JMC 194 (Sports Production) OR Visiting University Student
JMC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major OR Visiting University Student
JMC	201	News Reporting and Writing	Introductory news writing course required for all Cronkite majors. Students learn the basic reporting and writing skills needed for further study in print, broadcasting, online or public relations. Students practice reporting and writing news stories with an emphasis on accuracy, newsworthiness, deadlines, objectivity and fairness.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B or better; JMC 110 or MCO 120 with C or better OR Visiting University Student
JMC	220	Broadcast Voice and Delivery	Builds vocal skills both for everyday life, and for on-air performance. Focuses on breathing, voice control and pitch, articulation, stress and intonation, resonance, sounding conversational, anchoring, and on-camera body language.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; Credit is allowed for only JMC 220 or JMC 294 (Broadcast Performance Skills) or JMC 294 (Broadcast Voice and Delivery) OR Visiting University Student
JMC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major
JMC	301	Intermediate Reporting&Writing	Students produce a wide range of news and enterprise stories that take them into the community to report on police, courts, business, government and diverse communities, among other topics. Students hone their interviewing, reporting and writing skills and pitch their stories to professional and student media outlets. They gain a deeper and more sophisticated understanding of newsworthiness, journalism ethics, and law.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	302	Sports Reporting	Students learn how to cover a sports beat in this hands-on class. They develop story ideas and sources and report and write multiple stories on deadline. Expects students to pitch stories to professional outlets with the goal of publication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	305	Multimedia Journalism	Software and digital tools commonly used by multimedia journalists, including shooting and editing photos and video, social media, Web analytics, basic HTML, blogging, and design for the Web.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B or better; JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student

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JMC	306	Sports Multimedia Journalism	Students learn and employ a range of software and digital tools commonly used by multimedia sports journalists. They shoot and edit photos and video, create social media, analyze and understand audience analytics, and learn basic design for the Web, with a focus on creating content for sports audiences.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B or better; JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student
JMC	310	Principles of Strategic Comm	Introduces students interested in careers in public relations, strategic media and related areas to the practices and principles of public relations in corporate, nonprofit, agency, government and other settings. Covers the role of public relations professionals, how the field is changing and career opportunities.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	313	Introduction to Editing	Hands-on training in editing copy, photos and graphics and writing headlines and other display text for print and digital platforms. Emphasizes editing for accuracy, clarity, brevity, grammar and tone. Students practice AP style, develop news judgment and consider the ethical implications of their work.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 101 with B or better; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	315	Intermed Rept & Writ (Brdcast)	Intermediate broadcast news reporting and writing techniques with emphasis on audio.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA
JMC	320	Newscast Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience and assignments based on editorial judgment, technical skills and industry awareness. Students emerge with strategies for total newsroom management, confidence in producing news content and newscasts under deadline pressure and prepared for a variety of producer-related roles in professional newsroom environments.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302 or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	325	Breaking News Multimedia Reprt	Students cover breaking news for azcentral.com, gaining practical experience in an online, multimedia environment. Students are selected by The Arizona Republic and work with professional editors in the Republic Media newsroom. Their work appears on azcentral.com and may appear in the print edition of the newspaper. Students must commit to two full days a week, and they earn pay in addition to class credit.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	330	Television Reporting	Hands-on experience reporting and producing television news packages. Teaches visual storytelling skills including writing, reporting, videography and editing for broadcast and other platforms.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; JMC 301 or 315 with C or better; JMC 345 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	331	Television Sports Reporting	Hands-on experience reporting and producing television sports packages. Skills taught include sports writing, reporting and editing for broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 302 with C or better; JMC 346 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	333	Adv Bilingual Brdcast Reporting	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Students develop advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish, preparing them for entry-level positions in a small/medium market local television newsroom.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 or 315 with C or better; JMC 345 with C or better; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 or JMC 494 (Advanced Bilingual Broadcast Reporting)
JMC	345	Videography	Students conceive, plan, shoot, write and edit television news packages in this hands-on class. Skills taught include sequencing, framing, lighting, sound, story structure, news judgment, storytelling and editing. Students may use school-supplied cameras and editing facilities but must provide a Flash Memory card and portable external FireWire Hard Drive.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student
JMC	346	Sports Videography	Develops an understanding of visual sports storytelling and craft compelling sports stories using video and sound.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 102, 105, or 108 with C or better; JMC 302 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student

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JMC	351	Photojournalism I	Teaches basic skills required to compose, shoot and prepare still photos for publication. Hands-on, with students shooting a range of assignments from news events to environmental portraits, and producing a portfolio of their work. Students may share a school-supplied Canon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with Flash (built-in or external) for this class.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student
JMC	352	Sports Photojournalism	Students learn photojournalism skills, including composition, shooting and preparing still photos for publication in a sports context. Hands-on, with students shooting a range of sports assignments and producing a portfolio of their work. Students may share a school-supplied Cannon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with flash (built-in or external) for this class.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student
JMC	366	Journalism Ethics & Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journ & Mass Comm major; JMC 101 or 194 (Gramr for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	367	Ethics Diversity Sports Journ	Explores ethical problems related to sports media in a seminar setting. Discussion-based course applies journalistic values and principles to contemporary ethical dilemmas in sports media and helps prepare students for work in the profession.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Sports Journ BA major; JMC 101 or 194 (Gram for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; minimum 2.50 GPA OR Visiting University Student
JMC	402	Mass Communication Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Journ & Mass Com or Sport Journ major; ENG 102, 105, or 108 w C or better; JMC 101 or 194 (Gram Journ); JMC 201 w C or better; min 2.50 GPA; min 56 hours; Credit allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
JMC	406	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)
JMC	410	Turning Points in TV History	Uses historic television footage to talk about the evolution of news coverage and the ethical decisions journalists face.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 101 or MCO 101; minimum 2.50 GPA; Credit is allowed for only JMC 410 or JMC 494 (Turning Points in TV History) OR Visiting University Student

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JMC	412	Opinion Writing	Traces the evolution of a new form of writing that blends the traditions of magazine features and classic newspaper opinion. Students pitch and write features in consultation with editors for Slate, the popular online magazine. Emphasizes curiosity-driven, smart and witty writing that advances an argument with strong voice and intellectual integrity.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication and Mass Comm major; JMC 301 with C or better; minimum 2.50 cumulative GPA
JMC	413	Advanced Editing	Builds on skills learned earlier. Students master editing skills that include AP style, grammar, headline writing and page layout as well as editing graphics and other visuals, editing Web content and uses of social media. Students hone their news judgment and learn to work quickly and accurately on deadline.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 313 with C or better; minimum 2.50 GPA
JMC	414	Digital Graphic Design	Theory, organization, and practice of layout, typography, and design in traditional and multimedia publishing.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	415	Writing for Public Relations	Develops the professional-level writing and strategic skills expected of public relations practitioners. Students learn how to design and produce strategic plans, news releases, media kits and executive communications. They are exposed to communications approaches required for different audiences and media and learn about public relations theory as well as audience research and analysis.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 with C or better; JMC 310 with C or better; minimum 2.50 GPA OR graduate Mass Communication student OR Visiting University Student
JMC	417	Public Relations Campaigns	Students work with professional clients in an agency setting to research, plan and create comprehensive public relations campaign that address clients' needs. Concepts, theories and techniques relevant to public relations campaigns as well as strategic planning, campaign components and technology resources and tools. Analyzes, discusses and responds to current public relations issues and case studies.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 cumulative GPA OR graduate Mass Communication student
JMC	419	Strat Comm Leadership & Ethics	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 419 or MCO 519 OR Visiting University Student
JMC	421	Advanced Digital Storytelling	Explores and practices the art of storytelling for digital audiences. Each student produces a digital project consisting of images, sound and text using various storytelling forms. Projects may consist of narrative multimedia features, news coverage, enterprise or investigative reporting. Emphasizes creating quality journalism, visual impact and creative use of multimedia tools and techniques. The best work is entered in national and regional contests. It is recommended that students have taken other classes or can demonstrate skills in visual journalism (photography, videography or graphics).	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 421 or JMC 494 (Advanced Digital Storytelling)
JMC	430	Sports Marketing and Campaigns	Creates a professional campaign engaging viewers and fans in new and meaningful ways solidifying Fox Sports Network's (FSN) position as a leader in sports programming. Students work within FSN's "Creative University" program to execute the campaign; FSN selects a campaign to implement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 430 or JMC 494 (Sports Marketing and Campaigns) OR Visiting University Student
JMC	434	Advanced Bilingual Reporting	In this project-based class, students work together to cover various angles of a topic related to Latinos in the U.S. Their digital and video stories, photographs and graphics often result in publication. Students need some ability to report in Spanish, although they do not have to be proficient. Prepares students for work in the Borderlands Bureau of Cronkite News or Cronkite Noticias, the school's Spanish-language news site.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s) w/ C or better: Journ & Mass Comm or Sprt Journ mjr; JMC 201; JMC 301, 302, or 315; JMC 305; min 2.50 GPA; Credit allowed for only JMC 434 or JMC 494 (Adv Biling Report) or MCO 534 or MCO 598 (Adv Biling Report) OR Visiting University Student

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JMC	435	Latino and Transnational Issue	This fall-only seminar gives students a nuanced understanding of topics such as immigration, trade, health care, politics and cross-border conflict and cooperation, preparing them to report on some of today's most important issues. Students who complete the course are considered for a spring in-depth reporting course, which includes a reporting trip to another country.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 101 or MCO 101 with C or better; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	436	Public Relations Research	Students learn about the importance of research in communications, conduct research using qualitative and quantitative methods, and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research and are exposed to types of research and their application in the field of public relations.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; JMC 301 with C or better; JMC 310 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 436 or JMC 494 (Public Relations Research) OR Visiting University Student
JMC	437	Documentary Production	Students learn the fundamentals of producing documentaries, including research, script writing, production and shooting and editing video. Students produce a long-form documentary. Students become familiar with television documentary history in order to identify trends and learn about legal and ethical issues relevant to video documentary production.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 345, 346, or 448 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	440	Magazine Writing	Students report and write stories suitable for magazine outlets. They develop and pitch stories, learn new reporting techniques and employ literary techniques such as description and scene setting in their writing. See class notes for additional information.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 with C or better; minimum 2.50 GPA OR Sports Journalism MA student OR Master of Mass Communication MMC student OR Visiting University Student
JMC	441	Narrative Writing & Reporting	Covers the elements of narrative journalism--structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing--and applies them to a long-form story students report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journalism&Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 w/C or better; min 2.50 GPA; Credit allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing) OR Visiting University Student
JMC	444	Accountability Journalism	Accountability journalism in the digital age -- its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; min 45 hours; min 2.50 GPA; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism) OR Visiting University Student
JMC	446	News 21	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 201 with C or better; JMC 301, 302, or 315 with C or better; min 2.50 GPA; Credit is allowed for only JMC 446 or JMC 494 (News21) or MCO 546 or MCO 598 (News 21 Seminar)
JMC	448	Non-Narr Video Storytelling	Teaches students how to create video pieces that effectively communicate a story, information or concept to an audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Jm & Mass Com or Spts Jour maj; JMC 305 w/ C or btr; min 2.50 GPA; Crdt for only JMC 448 or JMC 494 (DSLR Vid Strytell or Non-Nar Vid Strytell) or MCO 548 or MCO 598 (DSLR Vid Strytell or Non-Nar Vid Strytell) OR Visiting University Student

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JMC	450	Issues in Coverage of Bus&Econ	Basics of business and economic reporting, one of the fastest-growing areas of Journalism. Students learn what skills are needed to cover business and economic stories as well as the basics of how private companies operate and the factors that drive the economy. Students learn about opportunities in the field and hear from leaders in business journalism.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major or Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	451	Photojournalism II	Develops photojournalism and visual storytelling skills through extensive hands-on practice shooting and editing for online and print media. Introduces shooting video with DSLR cameras and becoming proficient at image cropping, writing cutlines and editing using Adobe Photoshop.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; JMC 351 or 352 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	452	Visual Storytelling	Develops visual storytelling skills, working closely with a professional visual journalist to tell multimedia documentary stories that utilize video, still photos and text. In addition to the basics of storytelling, covers non-traditional techniques, including time-lapse, panos, HDR and star trails. Students should have basic skills in both still photography and videography and are expected to provide their own DSLR camera that can accommodate external mics and that have video capability.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; minimum 2.50 GPA; JMC 345 or JMC 351 with C or better
JMC	453	Reporting on Business and Econ	Trains in the basics of reporting about business and the economy. Helps students tell the stories behind companies, people and money, while improving competence in using numbers in stories. Offers the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 453 or JMC 494 (Reporting on Business/Economy)
JMC	455	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; JMC 305 with C or better; Credit is allowed for only JMC 455, JMC 494 (Digital Media Entrepreneurship), MCO 555, or MCO 598 (Digital Media Entrepreneurship)
JMC	457	Advanced Radio Reporting	Develops planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news, business, as well as hard and soft news feature reporting. Emphasizes pre- and post-production planning, development and execution.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism & Mass Communication BA major; JMC 301, 302 or 315 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting) OR Visiting University Student
JMC	460	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave the course with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content, and the requisite storytelling skills to produce work of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 460 or MCO 515 OR Visiting University Student
JMC	465	Telling Stories with Data	Techniques and tools of reporting using data and public records as well as how to use the Internet and other online sources to find information and sources for stories. Students get experience with computer spreadsheets, database software and statistical techniques as they develop their advanced reporting skills.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	470	Depth Reporting	Students learn to conceptualize, report and write or produce long-form, in-depth stories for publication or broadcast. Students learn techniques of investigative reporting, including use of public records and data, as well as advanced interviewing techniques, and discover compelling ways to tell complex stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	473	Business&Future of Journalism	Exposes advanced journalism students to broad media management problems; helps students understand how essential the bottom-line and quality journalism are to the entire journalistic enterprise; helps students think about how to balance those two concerns.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journ & Mass Comm BA major; JMC 101 or 194 (Grammar for Journ); JMC 201 with C or better; min 2.50 GPA; Credit for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journ) OR Visiting University Student

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JMC	474	Advanced Issues Sports & Media	Exposes challenges facing sports and media in the 21st century, including changing content models, revenue streams, and the evolving relationship between teams and media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or 194 (Grammar for Journalists); JMC 201 with C or better; min 2.50 GPA; Credit allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Explor the Bus of Journalism) OR Visiting University Student
JMC	475	Cronkite News: Broadcast	Students increase their knowledge of the television and multimedia news industry and receive a realistic experience in field and studio newscast production.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 330 or 331 with C or better; minimum 2.50 GPA
JMC	476	Public Relations Laboratory	Synthesizes and applies the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. Students: (1) analyze, discuss, then respond to public relations case studies; (2) develop an in-depth understanding of a client's needs; (3) conduct primary and secondary research; (4) work with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; (5) design and develop media products for client; (6) formally present the proposal to the client and the class.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	477	InnovationEntrepreneurship Lab	Research and development program designed to help media companies create new and exciting multimedia products and to help students create digital media startups. Brings together students from disciplines across campus, including journalism, business, computer engineering and design. Journalism students conduct research into developing new products and creating prototypes for those products. Students learn by doing, interacting with clients or investors, the director and the lead Web developer. Students schedule meeting times with the director to discuss projects.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/C or better; min 2.50 GPA; Credit allowed for only JMC 477 or JMC 498 (Innov & Entrepreneurship Lab) OR Visiting University Student
JMC	478	Cronkite News: Phoenix Bureau	Applies and enhances reporting, writing and multimedia skills.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	479	Cronkite News: Washington	Students participate in a full-time regional reporting bureau that gives them the opportunity to work as a Washington correspondent.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 478 (Cronkite News - Washington Bureau) or JMC 479 OR Visiting University Student
JMC	480	Cronkite News: Phoenix Sports	Students gain valuable experience in sports reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/ C or better; min 2.50 GPA; Credit allowed for only JMC 480 or JMC 478 (Cronkite News- PHX Sports Bureau) OR Visiting university Student
JMC	481	Cronkite News: LA Sports	Students gain valuable experience in sports journalism reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journ & Mass Comm BA or Sports Journ BA major; JMC 330 or 331 w/ C or better; min 2.50 GPA; Credit is allowed for only JMC 481 or JMC 478 (Cronkite News - L.A. Sports) or JMC 478 (Sports Journ Santa Monica) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Enroll	Mult Primary	Component	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
JMC	482	Sports Knowledge Lab	The Sports Knowledge Lab is part of the Global Sport Institute, an international sports research and knowledge lab based at Arizona State that connects people to the power of sport by translating and amplifying complex sports research to broad, global audiences. Under the guidance of the executive editor of the Sports Knowledge Lab, students are responsible for the production and presentation of a variety of curated and original content from across the globe that examines the impact of sport on society and provides context for top sports headlines from around the world. Content includes long-form writing, documentaries, articles, newsletters, data visualization and podcasts. Global Sport Matters provides compelling angles that not only deepen people's understanding of issues that fit within the framework of the Global Sport Matters mission, but provides unique context, knowledge and tools that can lead to change.	N		LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301, 302, or 315 with C or better; JMC 305 with C or better; Credit is allowed for only JMC 482 or JMC 498 (Sports Knowledge Lab)
JMC	483	CronkiteNews-DigitalProduction	Students produce stories and multimedia across platforms for Cronkite News and professional news outlets.	N		LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 483 or JMC 478 (Cronkite News Digital Production)
JMC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N		LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA
JMC	485	TV Magazine	Produce a 13-week television magazine program for Arizona PBS focusing on science research at Arizona State University, using long form DSLR video storytelling skills. Opportunity to field produce, research, report, use videography, writing and graphic skills under the direction of instructors.	N		LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prereq(s) C or better: Journ & Mass Comm or Sprts Journ BA mjr; JMC 301 or 315; JMC 345 or 494 (DSLr Vid Story); min 2.50 GPA; Credit allowed for only JMC 478 (TV Special Prj) or 485 or 494 (Pub Insight Net) or 498 (TV Mag) OR Visiting University Student
JMC	486	Digital Audiences Lab	Students participate in an immersive professional program experience to grow and engage digital audiences for real clients in an agency-like setting. Conduct audience and competitive research; analyze site and social content performance; create and measure paid and organic social media campaigns; execute SEM campaigns; create and optimize digital content; and make strategic recommendations to clients.	N		LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 315 with C or better; JMC 305 with C or better; MCO 307 with C or better; Credit is only allowed for JMC 486 or JMC 498 (Digital Audiences Lab) OR Visiting University Student
JMC	487	Howard Ctr Investigative Journ	Develops the next generation of watchdog reporters through hands-on investigative journalism projects. Students produce in-depth digital and documentary-style journalism that illuminates problems or wrongdoing and holds public officials accountable. The Center partners with national and regional news organizations to disseminate and publish student work. Completion of one Advanced Skills course with C or better (from Journalism and Mass Communication major map) is recommended to succeed in this course.	N		LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; Credit is allowed for only JMC 487 or JMC 498 (Howard Center for Investigative Reporting) OR Visiting University Student
JMC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 cumulative GPA OR graduate Mass Communication student OR Visiting University Student
JMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		Prerequisite(s): Journalism and Mass Communication BA major; minimum 2.25 GPA; successful completion of English proficiency exam OR Master of Mass Communication student
JMC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-3		
JPN	101	First-Year Japanese I	Basic speaking, listening, reading, writing, computer skills, and culture. Hiragana, katakana, 75 kanji. For students without previous Japanese instruction.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	

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JPN	102	First-Year Japanese II	Continued development of JPN 101 skills. 99 additional kanji. Communication skills goal: ACTFL Guideline Novice-Mid to Novice-High.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Pre- or corequisite(s): JPN 101 with C or better if completed; Students may not take JPN 102 if they have received credit for JPN 201, 202, 309, 310, 311, 312, 313, 314, or 321 OR Visiting University Student
JPN	110	Intensive Japanese I	First semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only JPN 101 or JPN 102 or JPN 110
JPN	115	Japanese Popular Culture	Examines different media of Japanese popular culture such as comics (manga), animation (anime) and film for evidence of how the Japanese express their self identity in Japanese society. By separating the media into themes such as technology and the future, war/apocalypse/disaster, violence in society, gender and sexuality, and human relations, understands the Japanese culture (and social consciousness) more intimately. Students view films, read scholarly articles on the subject matter, and actively participate in the course through written papers and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed for only JPN 115 or 194 (Japanese Popular Culture: Anime, Manga, and Film)
JPN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	201	Second-Year Japanese I	Continued development in speaking, listening, reading, writing, culture, and computer skills. 74 additional kanji. Introduction to kanji dictionary.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 102 with C or better; Students with credit for JPN 202, 309, 310, 311, 312, 313, 314, or 321 may not enroll in JPN 201 OR Visiting University Student
JPN	202	Second-Year Japanese II	Continued development of JPN 201 skills. 116 additional kanji. Communication skills goal: ACTFL Guideline Intermediate-Low to Intermediate-Mid.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 201 with C or better OR Visiting University Student
JPN	206	Japanese Calligraphy	Introduces Japanese calligraphy using traditional implements, starting with basic brush strokes and stroke order for kanji and kana.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
JPN	210	Intensive Japanese II	Second semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): JPN 102 with B or better or JPN 110 with C or better; Credit is allowed for only JPN 201 or JPN 202 or JPN 210
JPN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	301	Third-Year Japanese I	Development of reading skills, using authentic materials to comprehend structure, grammar, idioms, and culture. Expansion of kanji and vocabulary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	302	Third-Year Japanese II	Continued development of reading skills, as in JPN 301. Reading proficiency goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 301 with C or better OR Visiting University Student
JPN	309	Japanese Oral Communication I	Development of interpersonal, interpretive, and presentational oral/aural skills in familiar topics with sociolinguistic skills and understanding of Japanese culture. JPN 309 and 310 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	310	Japanese Oral Communication II	Continued development of oral/aural skills, with increased emphasis on honorifics. Speaking proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 309 with C or better
JPN	311	Japanese Composition I	Learning structural guidelines for narrative writing, developing organization skills to support ideas. Writing proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better

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JPN	315	Lang of Japanese Pop Culture	Develops reading and listening skills using Japanese popular culture materials of various genres, including narratives, comics, anime, film and music. Introduces linguistic elements that are not found in regular language textbooks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or JPN 210 with C or better; Credit is allowed for only JPN 315 or JPN 394 (The Language of Japanese Popular Culture I)
JPN	316	Lang Japanese Popul Culture II	Understands Japanese popular culture materials such as anime, music, movies, manga and narratives through their target language of Japanese. Emphasized language areas are honorifics, formal expressions, dialects and slang and vulgar expressions that are tolerable in the classroom environment. Introduces elements of the history, geography and culture of Japan to further students' understanding of the materials. Students improve their receptive skills, i.e., listening and reading, by engaging with these materials, and through the technique of shadowing, also improve their pronunciation, intonation and grammatical accuracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre- or corequisite(s): JPN 301 with C or better if completed; Credit is allowed for only JPN 316 or JPN 394 (The Language of Japanese Popular Culture II)
JPN	333	Japanese Civilization	Provides an overview of the entire sweep of Japanese history and culture from the earliest inhabitants of the Japanese archipelago, circa 30,000 BCE, to the earthquake and tsunami of March 2011 and beyond. Covers the main events, narratives, and individuals of Japanese history through documentary sources and literary works such as plays, novels, poetry and manga.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only JPN 333 or JPN 394 (Japanese Civilization) or SLC 394 (Japanese Civilization)
JPN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	401	Reading Modern Japanese Texts	Readings in modern literary and expository texts. Focus varies from year to year.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; JPN 302 with C or better; SLC 202 with C or better OR Visiting University Student
JPN	414	Intro to Classical Japanese	Readings from various genres of pre-20th-century literature, with analysis of the structure of the classical language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better OR Visiting University Student
JPN	415	Advanced Classical Japanese	Close readings of selected premodern texts, with focus on grammatical and stylistic features.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 414 with C or better
JPN	445	Readings in Modern Japanese	Advanced study of selected facets of modern Japanese letters and culture, including literature, material and visual culture, film, and other media.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 401 with C or better; SLC 202 with C or better; Credit is allowed for only JPN 445 or JPN 535
JPN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
JPN	485	Japanese Lit & Art of Translat	Examines the theory and practice of literary translation with two-fold aims: first, to analyze the ways in which translation has been theorized and practiced in a variety of historical contexts; second, to provide a space in which to discuss, experiment with, and polish original translations of Japanese-language texts in a wide range of written and visual forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better; Credit is allowed for only JPN 485 or JPN 585 OR Visiting University Student
JPN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
JPN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JPN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
JPN	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501

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JPN	502	Academic Writing	Trains graduate students in research methodology and conventions in academic writing. Centers on fine tuning students' command of the various components in English expository essays within the academic field of East Asian studies. Also addresses various contexts in academic writing, such conferences and proposals targeting audiences beyond the disciplinary boundaries of East Asian studies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 502 or JPN 502
JPN	585	Adv Problems of Translation	Theories and practice of translation; strategies for handling a variety of Japanese texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only JPN 485 or 585
JPN	586	History of Japanology	Provides students at the MA level with a deep understanding of the history of Japanese studies in the United States, Japan and Europe; the key issues and debates that have characterized the study of Japan from the eighteenth century to the present; and the methodological approaches employed in the professional study of Japanese literature and culture. Centers on the close reading and discussion of a range of primary and secondary sources (in English and Japanese) dealing with central issues in the development of Japan studies. In addition to pursuing independent research, students are expected to make regular presentations summarizing the main points in each week's readings. The course presumes that participants have the equivalent of 3+ years of college-level Japanese language study and a B.A. (or equivalent) in Japanese literature, language and/or culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JST	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)

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JST	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
JST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
JST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211
JST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
JST	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
JST	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
JST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
JST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
JST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student
JST	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
JST	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST or REL 315 OR Visiting University Student
JST	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
JST	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375
JST	346	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
JST	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
JST	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
JST	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
JST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
JST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
JST	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student

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JST	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
JST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
JST	490	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
JST	491	History of Antisemitism	Antisemitism means hostility, negative perceptions and persecution of Jews. Examines the evolution of antisemitism in the West from antiquity to modern times. Explains the history of antisemitism by looking at the interplay of religious, economic, cultural and political factors. Gives special attention to the origins of Christianity, the place of Judaism in Christian self-understanding, the power struggle between popes and emperors during the Middle Ages, the involvement of Jews in money lending, the alliance between the Jews and the secular princes, the rise of modern nationalism, and the place of racism in the politics of modern nation states. With a better understanding of the history of antisemitism, ponders the differences and similarities between premodern anti-Judaism and modern antisemitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
JST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
JST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	495	Judaism, Science & World Rel	Studies the correlation between science and religion as an interdisciplinary study from a historical perspective. Session topics fall into three distinct units. The first correlates the physical sciences with Western religious theology; the second explores the consequences of the life sciences on religious psychology; and the third examines the impact of the interconnection between sciences and religions in society. Each unit is studied through specific readings, film, lectures, and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours
JST	496	Biblical Narratives	Presents different trends in synchronic approaches applied to the Bible such as narrative criticism, semiotics, reader-response criticism, and situates them both in the postmodern cultural context and in the history of biblical exegesis. Explores various literary devices in biblical narratives, such as repetition, type-scenes, characterization, the change of points of view, the use of metaphors. Studies each technique on particular biblical texts, literally translated into English, with a special emphasis on how these techniques guide the interpretation and create meaning. Questions the significance of literary approaches for religious or ideological texts, such as the Hebrew Bible. Also considers criticisms raised against these approaches, assesses their limits, and envisions their future.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours
JST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		

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JST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JUS	105	Intro to Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for freshmen and sophomores.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 105 or 305 OR Visiting University Student
JUS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisites: Must have less than or equal to 25 earned hours
JUS	200	Topics/Concepts/Issues/Justice	Uses critical thinking skills to analyze and comprehend controversial social issues (e.g., abortion, affirmative action, capital punishment, the flat tax, and immigration).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	207	Homicide and Serial Killers	Explores the scholarship, research and rational analysis of the mass, spree and serial killer. It will examine some of the causes and underpinnings of these killers within the U.S. as well as the major theories and understandings of this phenomenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
JUS	214	The Pursuit of Justice	Introduces a wide variety of institutions and organizations—locally, nationally and internationally—that seek justice. Provides an understanding of the many ways justice is institutionalized in modern societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
JUS	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
JUS	222	Drugs and Justice	Provides an historical overview of the development and circulation of certain drugs; explores the more specific effects of drug use and abuse in everyday life; and examines the efforts by governments to both restrict/end and facilitate/expand the drug trade.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 200 (Drugs and Justice) or 222
JUS	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
JUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
JUS	300	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
JUS	301	Research in Justice Studies	Focuses on developing and evaluating research designs, data collection, and the relationship between validity and reliability. Stresses methods for conducting research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	302	Statistical AnalysisJusStd	Concepts and application of descriptive and inferential statistics, including linear regression, for justice studies research..	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170, or approved MA General Studies course with C or better; minimum 24 hours OR Visiting University Student
JUS	303	Justice Theory	Examines classic and contemporary philosophies and theories of justice, including legal, social, and criminal justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304

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JUS	305	Principles of Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for juniors and seniors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 105 or JUS 305 OR Visiting University Student
JUS	308	Courts and Society	History and development of courts. Relationship between dispute resolution mechanisms and cultural/social structure/processes in which they are embedded.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
JUS	320	Community and Social Justice	Discusses and analyzes definitions of community; impact of environment on behavior; promises of community organization for local empowerment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	321	Wealth Distribution & Poverty	Examines wealth and income distribution in the United States and analyzes ideological and political forces producing an increasingly unequal society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	323	Justice&Develop, Welfare State	Provides a comprehensive overview of the development of social welfare and relevant issues pertaining to social justice. Introduces upper-division students to different ideas about the meaning of social welfare in the context of the development of the U.S. welfare state.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
JUS	326	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
JUS	329	Domestic Violence	Critical inquiry into the legal, historical, theoretical, comparative, and treatment literatures on domestic violence; application of contemporary justice and social change theories to research how society defines and organizes against domestic violence. May include consideration of intimate partner abuse, child abuse and neglect, and gender violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student
JUS	332	Politics Energy Policy&Justice	Examines the social and political dimensions that shape energy and environmental policy. Focuses primarily on the U.S. Introduces elements of regional or global policy where they influence or shape domestic politics and policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334
JUS	335	Organized Crime	Critical inquiry into organized crime and its illegal activities; analysis and application of contemporary theories; analysis of strategies for reducing the prevalence and power of organized crime in the U.S. and other nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours

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JUS	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
JUS	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345
JUS	347	Immigration Education &Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
JUS	350	Immigration and Justice	Examines immigration policy, history of immigration, refugee issues, labor force participation, gender, family, children, social networks, and transnationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	352	Global Politics of HumanRights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
JUS	353	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
JUS	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
JUS	360	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	365	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
JUS	370	Cultural Diversity and Justice	Analyzes how cultural diversity challenges and broadens conventional understanding of justice. Examines how cultural beliefs and practices come into conflicts with public law and policy. Assesses the U.S.'s performance on incorporating cultural diversity in its social institutions including education, media, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	371	Sexuality and Social Justice	Theoretical and case-study based examination of how people, either alone, in groups, as members of an organization or participants in a social movement, seek to change the meaning, representation and regulation of sexuality. Analysis and practice of skills, strategies and tactics associated with the pursuit of "sexuality justice" by advocates within social movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 371 or JUS 394 (Sexuality and Social Justice)

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JUS	374	Holocaust,Genocide&HumanRights	Explores the psychological, social, historical, and political dimensions of the Holocaust and the phenomenon of genocide. Also examines the more recent international cases of genocide along with a discussion and analysis of the Universal Declaration of Human Rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	375	Justice and the Mass Media	Analysis of the impact of mass media and popular culture on social justice issues, including criminal justice. Critical inquiry into portrayals of gender, race, culture and class in mass media and other forms of popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	377	AZ Immigration,Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
JUS	382	Justice and Pop Culture	Explores the connections between the production, reproduction, and consumption of popular culture and the resultant impact on issues of justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	385	Justice and Everyday Life	Justice and injustice in everyday life and how small things can become legal issues. Role of language and interaction in social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	405	Inequality, Economy & Justice	Addresses economic issues and justice implications, including the interplay among economic conditions, race-ethnicity, class, and gender worldwide.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	408	Comparative Develop of Welfare	Embodies a multidisciplinary perspective on welfare issues and exposes students to different ideas about justice beyond the United States. Allows them to better understand how and why states organize and deliver justice in different ways. Exposes students to cross-national variation in how history, culture, politics, and economics have shaped the development and content of different types of welfare states. Engages theoretical perspectives from political sociology and political economy concerning the emergence and future fate of these welfare states. Analyzes comparative analysis of three distinctive types of welfare states; Liberal, Conservative, and Social Democratic Welfare States, with particular emphasis on their varying capacity to combine economic efficiency with social justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	410	Punishment: Logic and Approach	Analyzes forms of punishment, how and why they have changed. Areas include philosophy, history, and social structure of punishment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	420	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
JUS	421	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
JUS	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422
JUS	424	Ethics and Alternative Tourism	Cultural processes related to alternative tourism and their impact on both the tourist and local. Travel, tourism, globalization, development, human rights and the commodification of people and places. Topics include issues pertaining to Western tourism, commodification, race/class/gender and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 424 or JUS 494 (Sex, Drugs and Death)
JUS	425	Race, Gender, and Justice	Critically examines major theories, research findings, policies, and controversies concerning race, ethnicity, gender, and crime.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours

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JUS	427	Identity and Justice	Theory of symbolic interaction which provides a vocabulary, observational methodology (i.e., dramaturgy) and a set of grounding concepts that allow students to explore identity in its everyday practices. Explores the transformation and emergence of identities in public discursive spaces and the political impact of identity as it is deployed (invoked) and interpreted (imputed) among interactants in the social world. Establishes the position that identity operates as a central constitutive function in the construction of meaning and, subsequently, our ideas and attitudes about justice.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 36 hours; Credit is allowed for only JUS 427 or JUS 494 (Identity & Justice)
JUS	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
JUS	430	Soc Protest/Conflict & Change	Analyzes historical and contemporary protest movements advocating equality based on race, gender, and sexual orientation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
JUS	435	Cinema and Justice	Tracks the conceptualizations of justice that have been and are currently conveyed in film, including but not limited to the relationship between crime and various notions of justice. Other depictions include social issues such as gender, race, or economics.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	437	Disability and Justice	Examines the construction of disability as a social, cultural and political phenomenon. Dominant understandings of disability typically use narrow medical and therapeutic explanations and thus disabled individuals often are defined as deviant, stigmatized, incompetent and marginal. Disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, this class examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 437 or JUS 494 (The Social Construction of Disability)
JUS	438	Human Diff.Dilemmas of Justice	General examination of democracy and human differences that expands into in-depth investigations of (1) racial difference and identity politics; (2) gender and sexual difference in democracy; and (3) cultural difference and the multiculturalism debate.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	440	PrisonsPower&Punishment	Examines the history and logics of a "U.S. Penal Democracy," tracing how prisons became the preferred and accepted choice for punishment. Traces how the practices, policies and rationalizations of punishment (physical, psychological and social) have been at the center of U.S. politics beginning in the 17th century.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 440 or JUS 494 (Prisons, Power and the Punishments of History)
JUS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
JUS	445	Surveillance and Society	Explore how surveillance technologies alter social life; the complex ways that they interact to produce security, fear, control, and/or vulnerability.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours

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JUS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
JUS	460	Feminism and Justice	Explores feminist thought and critiques traditional political theories. Examines issues of racism, sexuality, and the law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	463	Discretionary Justice	Use/abuse, key issues/manifestations of discretion in legal system and other societal institutions. Theoretical/empirical linkages between discretion and discrimination, based on race, ethnicity, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	465	Death Penalty in the U. S.	Focuses on capital punishment in the United States; explores negotiation of law, politics, morality, public policy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	467	Terrorism, War, and Justice	Examines the relationship among terrorism, war, and justice. Analyzes terrorism within the larger study of deviance and social control, comparative politics, hegemony, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	468	Protest, Justice, Law & Media	Examines research on protests, political deviance, trials/law and justice, and critiques some of the media representations of related ideas. Investigates global social movements, political protests and nascent political trials. Analyzes varied justifications for defining action as diversity, deviance or crime and the reasons for using criminal, civil or alternative (positive) sanctions (especially via indigenous peoples). Explores the encompassing meaning of a political trial. Many people throughout the world find everyday life to be a trial, especially those placed on the margins of globalization. Expands the research on media and trials that usually have been examined narrowly by legal institutions in North America and reinforced by hegemony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 468 or JUS 494 (Protest, Justice and the Media)
JUS	469	Political Deviance and the Law	Examines the controversies created by political and deviant behavior, including a critical view of law as an agent of social control.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	470	Alternative Dispute Resolution	Critical examination of the tenets of alternative dispute resolution movement; exposure to the programs of ADR, including community and court based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	475	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
JUS	477	Youth and Justice	Critical examination of youth-related justice issues, including economic justice, violence against youth, delinquency, and the juvenile justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
JUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student

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JUS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
JUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
JUS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Social and Cultural Pedagogy MA student, Justice Studies MS or PHD student
JUS	501	Justice Theory	Theories and philosophies of social, economic, political, and criminal justice. Applies theories to contemporary justice issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	509	Stat Problems/Justice Research	Methodological problems of research design and statistical methods specific to justice studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	521	Qualitative Data Analysis & Eval	Analyzes qualitative data, e.g., field notes, in-depth interview transcripts, document analysis, coding, and retrieval with a microcomputer; qualitative evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	530	Policy, Advocacy & Disability	Graduate seminar focuses on social policy and critical advocacy as it relates to disability culture and rights. Focuses on state, national and international discourses around disability-related policies, rights, social movements and advocacy/activism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only JUS 530 or JUS 598 (Policy, Advocacy and Disability) or JUS 598 (Social Policy and Critical Advocacy)
JUS	542	American Indian Justice	Provides a broad overview of American Indian and Alaskan Native issues of justice and injustice in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	550	Gender, Race, & Economic Justice	Provides a critical social scientific perspective on economic issues particularly as they relate to gender, race, and class equality. Examines issues of economic inequalities as they are distributed along the lines of gender and race. Components converge to identify the social justice ramifications of economic policy and economic conditions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	555	Migration/Immigration & Justice	Explores the causes and consequences of immigration to the United States and the incorporation of immigrants into the American economy and society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	560	Women, Law, and Social Control	Gender issues in the exercise of formal and informal mechanisms of social control, including economic, social, legal factors, both violent and nonviolent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	565	Crit./Comp. Issues: Disability	Examines the construction of disability as a social, cultural and political phenomenon. Focuses on how disability is defined and represented in society as well as the implications/consequences of such definitions. Hegemonic understandings of disability typically have employed narrow medical and therapeutic explanations. From such deterministic perspectives, the disabled individual often has been defined as deviant, stigmatized, incompetent and marginal. This class rejects the perception of disability as a functional impairment that limits a person's activities. Instead, disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 565 or JUS 598 (The Social Construction of Disability)
JUS	575	Race, Gender, and the Law	Explores the law and social sciences literature on race, ethnicity, gender, and the legal order. Critically assesses the major contemporary theoretical and policy debates and controversies in the field from a variety of disciplinary and interdisciplinary lenses, setting these debates in their historical contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	588	Justice and the Mass Media	Analyzes the nature and impact of mass media messages about justice concerns for social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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JUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	610	Law and the Social Sciences	Analyzes the theoretical grounds underlying diverse studies of law and society; creation and administration of law; and jurisprudence and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	620	Justice Research Methodology	Covers the epistemology of knowledge and method in justice research, history, and philosophy of social science and critical inquiry, as well as perspectives that link these concerns to research strategies. Explores the strengths and weaknesses of introduced methodologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 500 with C or better
JUS	630	Data Analysis for Justice Rsch	Bivariate and multivariate techniques of data analysis and hypothesis testing for justice-related research and use of information and statistical programs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 509 with C or better
JUS	633	Community Research	Focuses on epistemology, methodology, and the production of knowledge about community and seeks to link theory, methodology, specific research strategies, and social criticism about the conduct of community research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	640	Theoretical Perspect/Justice	Analyzes philosophical perspectives of justice; linkages between social science theory and justice constructs; application of justice to social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 501 with C or better
JUS	650	Adv Qualitative Data Analysis	Advanced qualitative data collection and analysis techniques, including ethnography, in-depth interviews, field notes, coding, transcribing, content analysis, textual analysis.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	651	Theorizing Sexuality&Soc Just	Examines the intellectual development of "sexuality" knowledge across disciplines; analyzes the regulation of sexuality through social policy and cultural norms; case studies of how social movements counter normative definitions of sexuality and work toward their vision of "sexuality justice."	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 591 (Sexuality and Social Justice) or JUS 651 or JUS 691 (Sexuality and Social Justice)

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JUS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
JUS	660	Globalization&Economic Justice	Explores the political economy of globalization from a theoretical as well as practical standpoint. Sources used come from a variety of disciplines--sociology, political science, international relations, geography, and economics--all of which contribute unique theoretical and normative tools for analyzing the effect of global forces on economic justice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Graduate student
JUS	669	Political Trials/Indigenous Ju	Focuses upon research on political trials, deviance, and conceptions of indigenous and contemporary justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
KIN	101	Introduction to Kinesiology	Introduces the disciplines and professions associated with kinesiology, including an overview of historical and philosophical foundations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
KIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	290	Intro Evidence-Based Practice	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the health and health care professions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s) w/ C or better: College of Health Solutions major; ENG 101, 105, or 107; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321; Credit allowed for only KIN 290 or NTR 290 OR Visiting University Student
KIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	310	Collegiate Sports	Participation in men's or women's intercollegiate competition. May be repeated for 4 hours 1 per year. Y/E grade.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		
KIN	334	Functional Anatomy/Kinesiology	Muscles, bones, joints, and nerves and how they produce movement. Emphasizes muscle origins, insertions, actions, and innervations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR Visiting University Student

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KIN	335	Biomechanics	Basic anatomical and mechanical principles applied to human movement. Emphasizes kinematic and kinetic concepts.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; PHY 111 with C or better; MAT 170, 210, 251, 270, 271, or 272 with C or better OR Visiting University Student
KIN	340	Physiology of Exercise	Physiological mechanisms of acute responses and chronic adaptations to exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; CHM 101, 113, 114, 115, 116, 117, or 118 with C or better OR Visiting University Student
KIN	345	Motor Behavior	Evaluates movement through the perspectives of neural control, development through the lifespan, and the most effective ways to teach and learn motor skills.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better; BIO 201 with C or better OR Visiting University Student
KIN	348	Psych Skills for Optimal Perf	Applies psychological techniques and their use to improve effectiveness and performance in sport and related areas.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 101; PSY 101 OR Visiting University Student
KIN	352	Psychosocial Aspects/Phys Act	Interrelationships between physical activity and psychosocial variables, including socialization, cultural values, aggression, and motivation. Includes the psychological benefits of physical activity and exercise adherence.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C	Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better OR Visiting University Student
KIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
KIN	412	Biomechanics/Skeletal System	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discussion of injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 with C or better; Credit is allowed for only KIN 412 or KIN 512 OR Visiting University Student
KIN	413	Qualitative Analy/Sport Biomec	Develops systematic approach for detecting and correcting errors in human performance using anatomical and mechanical principles.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 (EPE 335) with C or better
KIN	414	Electromyographic Kinesiology	Muscular contributions to human movement, muscle mechanics, electrophysiological basis, and practical application of electromyography.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 335 with C or better; KIN 340 with C or better OR Visiting University Student
KIN	415	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 330 or KIN 334; Credit is allowed for only KIN 415 or KIN 515 or KIN 494 (Theory of Corrective Exercise) OR Visiting University Student
KIN	418	Experimental Neuromechanics	Students experience different quantitative techniques to analyze human movement from a motor control and biomechanical perspective.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 290; KIN 335; KIN 345; Credit is allowed for only KIN 418 or KIN 494 (Experimental Neuromechanics)
KIN	421	Human Motor Control	Focuses on understanding how the human central nervous system controls, regulates, and learns movements.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	422	Motor Control/Spcl Populations	Discusses principles of motor control theories and related practical applications for certain special developmental populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	423	Motor Control and Aging	Functional and behavioral changes to the motor control system as humans age, how specifically it impacts motor control and learning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	424	Neural Aspects Move & Rehab	Provides an in-depth understanding of how the nervous system controls movement. Students gain insight into how the enormous repertoire of human movements (e.g., gait, posture, voluntary hand movements) is controlled by a distributed motor system (e.g., spinal cord, basal ganglia, motor cortex); how pathology to the system alters movements; and how rehabilitative approaches address these pathologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 345; Credit is allowed for only KIN 424 or KIN 494 (Neural Aspects of Movement and Rehabilitation) OR Visiting University Student

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KIN	437	Biomechanics and Motor Control	Guides students to critically evaluate how the physical and mechanical properties of organisms and their environment affect biological tissues, structures, and motor control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 181 with C or better; MAT 170 with C or better; PHY 111 with C or better; Credit is allowed for only BIO 537 or KIN 437 or KIN 537 or KIN 494/598 (Comparative Biomechanics and Motor Control)
KIN	440	Exercise Biochemistry	Study of bioenergetics and metabolism of cellular (skeletal muscle, heart, and liver) organelles and proteins during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 440 or 532
KIN	441	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better; Credit is allowed for only KIN 441 or KIN 531 OR Visiting University Student
KIN	442	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 442 or KIN 536 OR Visiting University Student
KIN	443	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better; Credit is allowed for only KIN 443 or KIN 533 OR Visiting University Student
KIN	444	Metabolic Adaptations/Exercise	Examines physiologic adaptations to exercise training as they relate to metabolism and tissue functions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Visiting University Student
KIN	446	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)
KIN	447	ECG Interpretation	Using ECG data, this course comprehensively investigates cardiac arrhythmias and interactions with therapeutic drugs and exercise.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 447 or KIN 547 OR Visiting University Student
KIN	450	Biopsychosocial Perspectives	Uses a biopsychosocial perspective to examine the interrelationships on physical activity and health (physical and mental).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 352 (EPE 352) with C or better
KIN	452	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 352 (EPE 352 or PED 352) with C or better; Credit is allowed for only KIN 452 or 522
KIN	454	Motivational Theory Exe/Health	Assesses motivational theories relevant to the field of exercise and health psychology. Evaluates research and utilizes the findings to create applied public service announcements targeted toward a specific health issue (e.g., exercise, nutrition, smoking) and a specific population. Assesses students on four group public service announcements and "mini exams" for each unit. Taught in class, online and in a hybrid format.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 352 with C or better; Credit is allowed for only KIN 454 or KIN 494 (Motivational Theory in Exercise & Health)
KIN	460	Theory of Strength Training	Research and theories on developing muscular strength; programs for developing muscular strength.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better OR Visiting University Student

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KIN	465	Muscle Physiology	Discusses the cellular and systems physiology of the skeletal and cardiac muscle systems, as well as presents research on the effects of exercise on skeletal muscle function and adaptation. Describes and recognizes the detailed structure, composition and biochemical properties of skeletal muscle. Applies knowledge of ultrastructure, microanatomy and biochemical properties of skeletal muscle to factors influencing its form and function. Describes the factors that affect muscle adaptation. Applies knowledge of muscle gene expression to the heterogeneity of metabolic and molecular responses to skeletal muscle. Compares and contrasts differences among skeletal, smooth and cardiac muscle fiber types. Interprets and analyzes current research findings and applies these concepts to endurance and strength training adaptations. Develops an understanding of many of the molecular signaling pathways regulating muscle adaptation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340 with C or better; Credit is allowed for only KIN 465 or KIN 494 (Muscle Physiology) or KIN 598 (Muscle Physiology) OR Visiting University Student
KIN	466	Cardiovascular Exercise Phys	Examines varying concepts related to cardiovascular exercise physiology. Covers the basics of the cardiovascular system, how the system works both at rest and during exercise, and how it responds to exercise training. Evaluates research and utilizes the findings to enhance learning of course topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 466 or KIN 494 (Cardiovascular Exercise Physiology) OR Visiting University Student
KIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; Corequisite(s): junior or senior standing
KIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
KIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
KIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): minimum 25 hours OR Visiting University Student
KIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
KIN	512	Biomechanics/the Skeletal Syst	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discusses injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 412 or 512
KIN	515	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only KIN 415 or KIN 515
KIN	520	Applied Sport Psychology	Psychological theories and techniques applied to a sport to enhance the performance and personal growth of athletes and coaches.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate OR undergraduate postbaccalaureate student; Credit is allowed for only KIN 448 or KIN 520
KIN	522	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 452 or 522
KIN	523	Motor Control and Aging	Focuses on the functional and behavioral changes to the motor system as humans age and how specifically it impacts motor control and learning.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	530	Exercise and Sport Physiology	Covers both acute and chronic adaptation to physical activity with emphasis placed on exercise prescribed to enhance performance in sport and occupational fields relying on maximal or near-maximal efforts.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate or undergraduate postbaccalaureate student
KIN	531	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 441 or 531

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KIN	532	Exercise Biochemistry	Understanding the basic biochemical principles and enzyme pathways involved in energy transduction during exercise.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 440 or 532
KIN	533	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 443 or 533
KIN	536	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 442 or 536
KIN	540	Sport Biomechanics	Includes instruction and practical experience in the detailed analysis of sport movements designed to both reduce injury potential and maximize performance.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate or undergraduate postbaccalaureate student
KIN	545	Movement Assessment and Eval	Students perform different laboratory and clinical techniques to analyze human movement for biomechanical applications. Delivered as two components: lecture and laboratory. The lecture component serves to discuss the theory behind quantitative analysis techniques, proper equipment usage, data processing techniques and the connection to biomechanical principles. During the laboratory component students gain hands-on experience with the equipment by performing assigned experiments and clinical assessments. Follows with practice in analyzing, reporting, interpreting and presenting data. Additionally, students make recommendations and assign exercises to correct impaired movement when appropriate.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515
KIN	547	ECG Interpretation	Comprehensive investigation of the heart rhythm disturbances that occur within the chambers and conducting tissue of the heart. Partitioned into three sections allowing the systematic review of arrhythmias that occur in the atria, AV junction and ventricles of the heart. The material is designed to maximize understanding by analyzing electrocardiogram rhythm strips to reinforce applying the theoretical component of the course. Also uses the application of these theories through laboratory experiences allowing hands-on experience with electrode placement and 12 lead ECG interpretations.	N		LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Clinical Exercise Physiology MS or Exercise and Wellness MS student; Credit is allowed for only KIN 447 or KIN 547 or KIN 598 (ECG Interpretation)
KIN	550	Clinical Appl in Biomch	Hands-on experience utilizing clinical techniques and equipment to analyze human movement for biomechanical applications. Uses the student biomechanics laboratory as a simulated clinic environment where volunteers may participate as clients for students to gain experience with clinically relevant biomechanical assessments. Additionally, requires students to showcase successful interpersonal skills to be able to work with a variety of individuals (clients, peers and supervisors) and show an ability to think critically and pay attention to details.	N		LAB	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515; KIN 540; KIN 545
KIN	552	Appl Research Methods Biomch	Develops research skills and gains further experience working in a biomechanics research environment. Assigns a variety of projects to facilitate the student's skill development for biomechanics research such as utilizing modeling applications with related computer processes, inverse kinematics calculations and motion tracking techniques.	N		LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500; EXW 501; KIN 540; KIN 545
KIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y		LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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KIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KOR	101	First-Year Korean I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills, including Han'gul. Lecture, recitation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
KOR	102	First-Year Korean II	Continuation of KOR 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): KOR 101 with C or better OR Visiting University Student
KOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	201	Second-Year Korean I	Continual development of communication skills. Increased emphasis on reading and writing, vocabulary building, and review of fundamentals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 102 with C or better OR Visiting University Student
KOR	202	Second-Year Korean II	Continuation of KOR 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 201 with C or better
KOR	250	Korean Culture and Society	Surveys Korean culture and society, covering history, religious traditions, gender, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
KOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	313	Third-Year Korean I	Continued development of ability to communicate orally and in writing. Exposure to a variety of Korean written styles.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): KOR 202 OR Visiting University Student
KOR	314	Third-Year Korean II	Continuation of KOR 313.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: KOR 313
KOR	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321
KOR	347	Korean Film and Literature	Introduces aspects of Korean history, culture, and society through Korean film and literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
KOR	350	Women of Korea	Examines the changing role and status of women in modern Korea in relation to political and cultural changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	
KOR	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieus. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
KOR	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)
KOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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KOR	401	Advanced Korean I	Offers students the opportunity to acquire advanced levels of vocabulary, reading proficiency and writing ability for an academic or professional purpose. Also helps students prepare for the TOPIK (Test of Proficiency in Korean). Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean. Students can take this course in conjunction with other Korean three-hundred level language courses upon instructor approval.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 314 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes I)
KOR	402	Advanced Korean II	Constitutes the second of two semesters of study of fourth-year Korean. Offers the opportunity to acquire advanced levels of vocabulary, reading proficiency, and writing ability for an academic or professional purpose. Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 401 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes II)
KOR	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 491 (Asian Popular Culture) or SLC 494 (Asian Popular Culture) OR Visiting University Student
KOR	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student
KOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
KOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
KOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
KOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
KOR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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LAP	231	Intro to Apps for Designers	Fundamentals of professional computer operation for designers including basic system usage, introduction of software packages focused on the design of sustainable environments, and utilizing computers to assist in environmental analysis and analytic decision making. Software packages include Microsoft Office, Adobe multimedia and creativity products, Esri ArcGIS geographic information systems (GIS), Autodesk AutoCAD computer aided design/drafting (CAD), and Trimble SketchUp 3D modeling software.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Landscape Architecture BS major; Corequisite(s): LDE 261 OR non-Landscape Architecture major with sophomore standing OR Visiting University Student
LAP	251	Plant Materials Sust Landscape	Plants as landscape architectural elements. Emphasizes plant identification and the uses of particular plants in landscape architecture.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Design Studies minor; ALA 102 OR Environmental Design BS major; EDS 223 OR Landscape Studies minor; ALA 102 OR Corequisite(s): Landscape Architecture BSLA major; LDE 262 OR Visiting University Student
LAP	311	History Landscape Architecture	Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): Landscape Architecture major; ALA 100 or 102; passed degree milestone review OR non-Landscape Architecture major; minimum sophomore standing OR Visiting University Student
LAP	312	20th-Century Landscape Arch	Explores concerns, projects, and movements in landscape architecture of late 20th-century understanding; social, ecological, regional, and historical influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): Landscape Architecture majors; ALA 100 or 102; passed the degree milestone review OR non-Landscape Architecture major; minimum junior standing OR Visiting University Student
LAP	332	GIS Application in Environ Dgn	Addresses fundamentals of geographic information systems (GIS), especially as they relate to applications by environmental planners and designers (including architects, landscape architects, urban designers and related professionals). Focuses on using GIS as tools. Explores the techniques and procedures for acquiring, displaying, editing, analyzing and modeling spatial information.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Landscape Architecture BSLA major; ALA 235 or LAP 231; minimum junior standing OR Visiting University Student
LAP	341	Landscape Construction I	Landscape constructions focusing on landform transformations. Topics include landform analysis, grading, and earthwork.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): LDE 361 OR Visiting University Student
LAP	342	Landscape Construction II	Characteristics of materials and methods used in landscape architectural construction.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; LAP 341 (LTC 343) with C or better; Corequisite(s): LDE 362 OR Visiting University Student
LAP	352	Ecosystems&Sustainable Design	Increases awareness and understanding of the biotic and abiotic systems, processes and factors of our biosphere in order to facilitate sustainable landscape architectural design and applications.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design major; LAP 254 OR Landscape Studies minor; LAP 254 OR Design Studies minor; LAP 254 OR Corequisite(s): Landscape Architecture major; LDE 361 OR Visiting University Student
LAP	353	Planting Design Sust Landscape	Functional and aesthetic use of plants in arid-region landscape design. Explores design philosophies through planting design problems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; Corequisite(s): LAP 341 (LTC 343); LDE 361 OR Visiting University Student
LAP	371	Professional Practice	Landscape architecture practice including contracts, project and office management, liability, licensing, and professional development.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Landscape Architecture BSLA major; Corequisite(s): LDE 362 OR Visiting University Student
LAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	413	Landscape ArchTheory/Criticism	Critically analyzes landscape architecture theories and projects to evaluate validity of design and contribution to society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prereq(s): Lndscp Arch maj; ENG 101,105, 107 w/C; LDE 362 w/C; Coreq(s): LDE 461 OR Envirnmntl Dsgn maj or Lndscp Studies min; ENG 101,105,107 w/C OR Dsgn Studies min; ENG 101,105,107 w/C; LAP 311 (LPH310); LAP 312 (LPH311) OR Visiting University Student

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LAP	443	Landscape Construction III	Landscape construction focusing on low-technology, biotechnical, regional, and experimental techniques or systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; LAP 342 (LTC 344) with C or better; Corequisite(s): LDE 462 OR Visiting University Student
LAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Landscape Architecture BSLA major; Pre- or corequisite(s): LDE 361
LAP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
LAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
LAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		Prerequisite(s): Landscape Architecture BSLA major or Landscape Studies minor; minimum junior standing
LAP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	585	International Field Studies	Organized field study in specified international locations.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or LAP 585 or PUP 485 or PUP 585
LAP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	205	Deep Roots: Latin America	Introduces the diversity of Latin-American traditions through its cultural production. The approach is interdisciplinary (art, architecture, literature, film, theater, business and anthropology). Studies the history and culture of Latin America and its concept of identity and nation through a variety of genres. Focuses on aspects that reveal the complexity of Latin America and in turn provides insights into Latin American culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
LAS	206	Locating Lat America/Methods	Methodologies course designed to provide exposure to academic fields and research approaches that intersect in Latin American studies	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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LAS	330	From the Inside/Lat Am Journey	Journeys through a wide variety of genres and critical scholarship in Spanish. Provides a broad exposure to different types of reading and writing. Because the Latin American Studies program is flexible, students must be able to engage with many different types of texts across disciplines. Covers Latin American cultural history from pre-Colombian to the post-modern by exploring different formats and genres around major central themes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): SPA 313 and 314 with C or better OR SPA 315 and 316 with C or better OR SPA 325 with C or better OR Visiting University Student
LAS	340	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341
LAS	350	Construction of a Nation:Chile	Examines Chilean history, politics and cultural production through its historical development and explores a multiplicity of cultural issues. Develops knowledge and appreciation of cultural and visual production of Chile and Latin America as well as acquired skills for critically analyzing texts in their applicability to modern-day society. Considers the variety of cultural and artistic productions (novel, poetry, short story, film, music, pop culture, presidential speeches) as sources of social commentary in which observations of national identities are constructed.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; Credit is allowed for only LAS 350, ENG 494 (Construction/Nation:Chile in the 20th/21st Cen) or SPA 494 (Construction/Nation:Chile in the 20th/21st Cen)
LAS	351	Cityscapes: Urban Mexican Lit	Examines major developments in contemporary Mexican literature. Begins at mid-20th century as the novel turns away from the rural novel of the Revolution, toward a more urban setting. Mexico City serves as a cultural and political center, and the novels mark social and political changes across different literary currents.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	355	Contemporary Mexican Cinema	Examines major themes and auteurs in contemporary film as their work intersects with larger cultural phenomena, expanding students' cultural knowledge as well as critical communication skills.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
LAS	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
LAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Álvaro Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
LAS	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419

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LAS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student
LAS	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
LAS	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
LAS	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
LAS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequality)
LAS	471	Treaties/Cultural Production	Emphasizes sociocultural values associated with national, transborder and transatlantic identities providing a panoramic view of treaties, agreements, constitutions and cultural production by Americans and Spaniards from 1812 to 2012 with particular focus on the themes of nations, borders, citizenship and identity.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
LAS	480	New Media/Theatre:Lat Am/Spain	Overview of the transatlantic cultural interrelationships between Latin American and Spanish theatre and performance in the 20th and 21st centuries. Explores topics such as cyber-theatre, Internet theatre and multimedia theatre.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
LAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
LAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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LAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
LAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
LAT	101	Elementary Latin	Basic Latin grammar with an emphasis on developing reading skills. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
LAT	102	Elementary Latin	Continuation of LAT 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: LAT 101
LAT	140	Grk&Lat Roots Biosctfc Trmngly	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
LAT	143	Roman Civilization	Introduces ancient Roman civilization from the earliest times (ca. 1200 BCE) through the fall of the Western Empire (CE 476) and the reign of the Byzantine Emperor Justinian (6th c. CE). Examines ancient Roman society, history, art, architecture, literature, mythology and legends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only LAT 143 or LAT 194 (Roman Civilization) or SLC 143 or SLC 194 (Roman Civilization)
LAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	201	Intermediate Latin I	Final semester of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisite(s): LAT 102 OR Visiting University Student
LAT	202	Intermediate Latin II	Beginning reading of Latin authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisites: LAT 201
LAT	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)
LAT	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
LAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	301	Roman Authors	Intermediate Latin reading class that introduces Roman prose authors such as Livy, Cicero and Pliny and explores the variety of genres within Latin prose, such as historical accounts, personal letters and political oratory.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better; Credit is allowed for only LAT 301 or LAT 394 (Introduction to Latin Authors)
LAT	322	Medieval Latin	Surveys Late Antique and medieval Latin authors and texts, both prose and poetry. Some review of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better
LAT	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
LAT	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
LAT	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student

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LAT	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
LAT	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
LAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	421	Roman Literature	Readings in the Latin masterpieces. Authors read change each year in accordance with needs of the class. May be repeated for credit.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): LAT 202 OR Visiting University Student
LAT	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
LAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
LAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
LAT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	210	Intro to American Legal System	Introduces the American legal system and an overview of laws that impact business in the United States. Initially examines the questions: What is law? What is the source, nature, and scope of laws; and how is law shaped by our culture and political institutions? How is the American legal system structured and operated? The majority of substantive content examines the role of law in business.	N		LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum sophomore standing OR Visiting University Student
LAW	310	The Global Legal Community	Introduces the building blocks of the developing "global legal community," global governance institutions, both public and private, international law and transnational legal regimes. Examines how dynamic area of law is influenced by, and influences the conduct of the international and domestic relations.	N		LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only LAW 310 or 394 (The Global Legal Community)
LAW	315	American Business Law	Explores the foundations of American business law. Topics covered include: the structure and processes of the U.S. legal system, a comparison of transactional law and business litigation concepts and processes, and the role of regulation in the free market. Students read law cases and other legal texts such as legislation, professional and academic legal writing.	N		LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum 45 hours
LAW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	480	The Law of Business Orgs	Describes how companies can be organized in various ways to achieve different goals. Studies the forms in which business enterprises can be organized, and the pros and cons of each form. Examines sole proprietorships, agency, partnerships, corporations and the increasingly popular new form of enterprise called the limited liability company ("LLC"). Focuses on corporations, the most popular form of business organization used in capital raising to drive growth strategies.	N		LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Business (Law) BA major; LAW 210; LES 305 or any 300- or 400-level LAW course; minimum junior standing OR Visiting University Student
LAW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	515	Contracts	Explores common law legal method and the structure of Article 2 of the U.C.C. in the context of issues of contract formation.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	516	Criminal Law	Substantive law of crimes.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		

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LAW	517	Torts	Legal protections of personality, property, and relational interests against physical, economic, and emotional harms.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	518	Civil Procedure	Explores the structure of a lawsuit and techniques of alternative dispute resolution. Specific topics include commencement of suit, joinder of parties, discovery, pretrial motions, subject matter and personal jurisdiction, res judicata, collateral estoppel, and choice of law under the Erie doctrine.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	519	Legal Method and Writing	Examines methods used to analyze legal problems. Reviews precedent statutory construction and basic res judicata problems. Use of basic legal writing formats.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	522	Constitutional Law	Role of courts in the federal system, distribution of powers between state and federal governments, and the role of procedure in litigation of constitutional questions.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		
LAW	523	Property	Indicia of ownership, found property, estates in land, landlord tenant, nonpossessory interests in property, nuisance, land use planning, and transfers of interests in property.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	524	Legal Advocacy	Continuation of LAW 519.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2		
LAW	530	Fundamentals of Contract Law	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N		LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Master of Legal Studies major; Credit is allowed for only LAW 530 or LAW 598, Fundamentals of Contract Law
LAW	581	US Law & Legal Analysis	Introduces non-JD students to the U.S. legal system and to the types of legal reasoning used by U.S. lawyers and judges. Provides the necessary instruction to use legal reasoning in work, including reading and understanding cases and statutes and applying existing law to the issue presented. Extensive written legal analysis exercises.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Laws (Global Legal Studies) or Legal Studies or Master of Sports Law and Business student
LAW	582	Patent Drafting	Prepares students to draft patent applications on behalf of clients. Additionally, students learn the techniques and language necessary to reply to Offices Actions issued by the United States Patent and Trademark Office (USPTO). Provides significant drafting experience, requiring three separate writing submissions and revisions based on instructor feedback throughout the course. Students create work product examples that can be shared with potential employers and/or prospective clients.	N		LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Master of Legal Studies major
LAW	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	585	Comprehensive Patent Practice	Prepares students for the patent prosecution process, as administered by the United States Patent and Trademark Office (USPTO). Uses a "cradle to grave" approach, beginning with the earliest steps taken when preparing to draft a patent application for a client and ending with post-decision options and activities available to those awarded with an issued patent or denied an issued patent.	N		LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	5		Prerequisite(s): Master of Legal Studies major
LAW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	596	Professional Legal Writing	Teaches non-JD students how to organize a legal research project by analyzing the facts and identifying the issues involved, determining the research tools needed to correctly investigate the legal problem, and systematically using these tools to strengthen and support the desired legal argument.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: Laws (USLaw&Global Legal Pract) or Legal Studies students
LAW	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	600	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	601	Antitrust Law	Legislation and its implementation to prevent monopoly and business practices in restraint of trade, including restrictive agreements involving price-fixing, trade association activities, and resale price maintenance.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: College of Law student

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LAW	602	Civil Procedure II	Focuses on the Rules of Civil Procedure and how lawyers use the Rules in litigating civil cases from initiation through the pre-trial stages.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		
LAW	603	Conflict of Laws	Problems arising when the operative facts of a case are connected with more than one state or nation. Choice of law, bases of jurisdiction, effect of foreign judgments, and underlying federal and constitutional issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	604	Criminal Procedure	Nature of the criminal procedural system with special focus on constitutional protections for the accused.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisites: College of Law student
LAW	605	Evidence	Principles and practice governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge, and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student
LAW	606	Federal Income Taxation	Federal income tax in relation to concepts of income, property arrangement, business activity, and current tax problems, with focus on the process of tax legislation and administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student
LAW	607	Nanotechnology	Provides an overview of the legal and policy issues relating to nanotechnology, including risk management, national and international regulations, intellectual property, privacy issues, and liability issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	608	Taxation of Business Entities	Key concepts and issues in the taxation of business entities, including C corporations, S corporations, LL.C.s and partnerships. Considers the tax issues that arise when forming a business entity, how to treat income earned by the entity and distributions from the entity to its owners, and consequences of dissolving or selling business entities. Coursework includes review of specific code provisions, administrative materials and important cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 606; Credit is allowed for only LAW 608 or LAW 691 (Tax Business Entities)
LAW	609	Administrative Law	A large portion of federal law comes from administrative agencies such as the Environmental Protection Agency, the National Labor Relations Board and the Department of Defense. Examines the institutional role and legitimacy of these federal administrative agencies. Topics include the source of administrative authority; the rationale for delegation of authority to administrative agencies; constitutional constraints on agency power; the different forms of agency rulemaking; agency adjudication of facts and law; the scope and purpose of judicial review of agency action; and the degree to which administrative agencies exercise executive, legislative and judicial powers.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 609 or LAW 600 (Administrative Law)
LAW	610	Advanced Criminal Procedure	Topics in criminal procedure, with emphasis on legal constraints on grand jury investigations, police practices, pretrial release, preliminary hearings, prosecutorial discretion, and plea bargaining.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	611	Estate and Gift Tax	Tax laws relating to transfer of wealth both at death and during lifetime, including federal estate tax, gift tax, and income taxation of estates and trusts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student; LAW 606
LAW	612	Family Law	Legal and nonlegal problems that an individual may encounter because of a situation as a family member.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	613	Federal Courts	Federal judicial system; relationship of federal and state law; jurisdiction of federal courts and their relation to state courts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	614	International Contracts	Explores the laws applicable to international contractual relations, focusing heavily on the United Nations Convention on Contracts for the International Sale of Goods. One of several offerings in the field of International Business Transactions, touches on choice of law rules and a comparison of selected UCC with CISG provisions; a comparison of the contract law of selected foreign nations with the UCC; and the law of contracts in the United States. The casebook is heavily oriented toward a problem method of study.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	615	Public International Law	Role of law in international disputes. Considers drafting and interpretation of treaties and multilateral conventions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	616	Jurisprudence	Introduces legal philosophy, with readings on the nature of law and legal reasoning, the relationship between law and morality and equality and social justice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617

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LAW	618	Decedent's Estates	Substantive concepts involved in transmitting wealth, including interstate succession, wills and will substitutes, the modern trust as a family protective device, creation of future interests in a planned estate, social restrictions of a nontax nature, and methods of devoting property to charitable purposes.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	619	Energy Law & Policy	Examines laws relating to the ownership, consumption and conservation of energy resources, including coal, petroleum, natural gas, sunlight and wind. Explores and analyzes laws that allocate interests in energy resources and that regulate energy production and delivery strategies so as to promote economic efficiency and to mitigate adverse impacts on the natural environment.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for LAW 619 or LAW 691 (Energy Law & Policy)
LAW	620	Civil Rights Legislation	Coverage of the rights and remedies provided by federal civil rights legislation, principally, the key provisions of the Reconstruction Era Civil Rights Acts, portions of the employment discrimination legislation, and voting rights legislation.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	621	Sales	Advanced issues involving the formation and interpretation of sales and lease contracts. Focuses primarily on Articles 2 and 2A of the Uniform Commercial Code.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	622	Secured Transactions	Secured transactions under Article 9 of the Uniform Commercial Code and other relevant sections. Overview of the creation, perfection, and priority effects of security interests. Financing of business enterprise and consumer credit.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	624	Community Property	Property rights of husband and wife; the Arizona community property system; homestead.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-2		Pre-requisite: College of Law student
LAW	625	Individual Rights in Con Law	Fundamental protection for person, property, political, and social rights.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Prerequisite(s): College of Law student
LAW	626	Writing for Law Practice	Helps students attain an advanced level of writing proficiency by exposing them to a broad range of legal documents.	N		SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: Juris Doctor Candidate; Credit is allowed for only LAW 626 or 665
LAW	627	Corporate Taxation	Problems in taxability of the corporation, corporate distributions, and corporate reorganizations.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 606 with C or better
LAW	629	Employment Law	Employment law topics including testing, privacy, OSHA, FLSA, benefits, worker's compensation, rights to compensation, workplace emotional injuries, termination, and sexual harassment.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	630	Employment Discrimination	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	631	Environmental Law	Litigation, administrative law, and legislation relating to problems of environmental quality. Topics covered may include air and water pollution, toxic substances, pesticides, and radiation.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	632	Federal Indian Law I	Inquiry into legal problems special to American Indians and tribes.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	633	Law, Litigation, and Science	Fills a gap in the education of most lawyers, namely, how to effectively think about and use empirical evidence.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	634	Election Law	Explores the law governing politics and elections in the United States. Examines a variety of topics, including: the Constitution and its protection of the right to vote; reapportionment; the Voting Rights Act; gerrymandering; the constitutional rights of political parties; campaign finance regulation; and election administration (e.g., the use of electronic voting equipment, provisional and early voting). Also considers the relationship between these topics and partisanship.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 634 or LAW 691 (Election Law)
LAW	635	Juvenile Law	Special problems in the juvenile system.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	636	Land Use Regulation	Legal problems in the regulation and control of land development by state and local governments. Administration of zoning, subdivision, and other planning controls; issues of fairness and procedure in the utilization of such controls.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	637	The Litigation Experience	Offers the opportunity to serve as trial lawyers in a simulated case. Using a "learning by doing" format, students take a hypothetical civil lawsuit from the pleading stage through discovery, pretrial motion practice, ADR and trial.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; Pre- or corequisite(s): LAW 605
LAW	638	Professional Responsibility	Emphasizes the Model Rules and Model Code that govern the professional responsibility of lawyers and their interpretation and application.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student

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LAW	639	Natural Resource Law	Examines the constitutional basis for federal land management and the different kinds of public lands management schemes (e.g., parks, forests, wildlife refuges), emphasizing acquisition of right to, and regulation of, the different uses of public lands and resources (e.g., mining, grazing, timber, wildlife habitat, recreation).	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	640	Securities Regulation	Selected problems arising under the major statutes concerned with regulating the securities market.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 654
LAW	642	White Collar Crime	Examines the ways in which white collar crime is prosecuted, principally in the federal system.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	643	Water Law	Acquisition of water rights; water use controls; interstate conflicts.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	644	Trademark Law	In-depth examination of substantive trademark and unfair competition law with focus on both policy and practical considerations.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 644 or LAW 691 (Trademark and Unfair Competition Law)
LAW	645	Patent Law	In-depth examination of substantive patent law as it applies to the commercialization and enforcement of patent rights.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	646	Copyright Law	Legal rights in original forms of human expression.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	647	Mass Tort Litigation	Examines unique procedural and substantive issues that arise in mass tort litigation.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	649	Scientific Evidence	Examines the use of scientists and scientific tests or studies in criminal and civil litigation.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	650	Health Law	Introduces health law.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	651	Public Health Law	Addresses the relationship between the state and the population's health.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	652	Bioethics and the Law	Covers a range of issues relating primarily to human reproduction and life and death decisions.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	653	Bankruptcy	Covers basic bankruptcy law and practices.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	654	Business Organizations	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies, and corporations.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisite: College of Law student
LAW	655	Chapter 11	Covers the law and practice of reorganizing business entities under Chapter 11 of the United States Bankruptcy Code.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	656	Value Real Est/Close-Held Bus	Focuses on the valuation of interests in real property and closely-held businesses.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	657	Private Property Rights	Explores the conflict between property rights and the right of the government to acquire private property for public use.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	658	Arizona Constitutional Law	Examines the basic provisions of the Arizona Constitution and the judicial decisions interpreting those provisions.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	660	Advanced Estate Planning	Covers advanced estate planning and estate administration issues.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	662	ADR and Employment Law	The use of alternative dispute resolution has been most extensive in the area of employment law. Mediation and arbitration are widely used not only in the collective bargaining setting, but also in virtually every aspect of the employment relationship. Offers a comprehensive review of the subject with special emphasis on the extensive body of law that has developed in regulating employer-imposed arbitration. Discussion of mediation includes use of simulations to enable the students to understand how mediation can effectively resolve employment disputes. Opportunities to observe real mediations of employment disputes. Experienced attorneys discuss the "real world" use of employment ADR from a plaintiff's and a defendant's perspective.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	664	Intellectual Property	Surveys the laws conventionally grouped as intellectual property, with a focus on patents, copyrights, and trademarks. Explores the policy rationales for each body of law. Particularly relevant for two types of students: (a) those who are unsure they want to specialize in IP and want a general introduction, and (b) those who do not have room in the schedules to take all of the upper-level offerings here at ASU. Not appropriate for students who have already taken the upper-level courses in copyright, trademark, and patents; students who have taken these offerings may be withdrawn.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		

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LAW	666	Corporate Governance	Explores current issues in the corporate governance of publicly traded business corporations under both state and federal law. Also addresses the ethical dilemmas with respect to governance issues that lawyers face when advising corporate clients.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 654; Credit is allowed for only LAW 666 or LAW 691 (Corp Governance)
LAW	667	FDA Regulation	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate
LAW	668	Trade Secrets	Considers the law of trade secrets, focusing on the principles set forth in the Uniform Trade Secrets Act, the Restatement of Torts, the Restatement (Third) of Unfair Competition, and the Defend Trade Secrets Act. The second portion of the class focuses on the law of restrictive covenants, with an emphasis on Arizona case law and principles. Students learn principles of drafting effective restrictive covenants, non-disclosure and confidentiality agreements, as well as an overview of litigation strategies and techniques.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 668 or LAW 691 (Trade Secrets and Restrictive Covenants)
LAW	669	Bar Exam Prep	This two-credit course prepares students to take (and pass) the bar exam. The principal focuses of this course are: (1) writing and analysis for bar exam essays, (2) the MBE (multiple choice section of the bar exam), and (3) the MPT (Multi-state Performance Test) as they pertain to the Arizona bar exam. Although this course primarily focuses on the Arizona bar exam, the skills and strategies learned are applicable for any state's bar exam.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 669 or LAW 791 (Bar Prep)
LAW	670	Pro Sport Team Ops/Legal Issue	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 670 or LAW 691 (Business Operations for Team Sports) or SLB 519
LAW	671	Sports Venue Construction	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 671 or SLB 520
LAW	672	MLB's Impact on Law/Society	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 672 or SLB 523
LAW	673	Risk Management for Venues	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 673 or SLB 521
LAW	674	NCAA Compliance, Infractions	Provides a real-world view of a Division I Power 5 Conference Compliance Office and the manner in which such an office directs its institution's efforts to maintain compliance with National Collegiate Athletic Association and member conference legislation governing intercollegiate athletics.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 674 or LAW 791 (Infractions/Compliance - Intercollegiate Athletics) or SLB 522 or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
LAW	675	Professional Sports Law	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
LAW	676	Amateur Sports Law	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)

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LAW	677	Law of Sports Branding	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 677 or SLB 524
LAW	681	Construction Law	The construction of an actual project serves as the "laboratory" for the course. Many of the problems presented in class each week are based on "real time" events occurring on that project and the class visits the actual construction site during one of the classes. Focuses on practical construction law issues taught by an experienced practicing lawyer. Topics include: types of construction contracts; the basic relationships among the owners, architects/engineers, general contractors, subcontractors and material suppliers on a project; express and implied warranties; the role of the schedule and claims related to scheduling; change orders and concealed site condition claims; the Economic Loss Doctrine; mechanics' liens, stop notices and other payment remedies; proving damages; and the trial of a construction case and the use of expert witnesses. Expects extensive student participation during class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 681 or LAW 691 (Construction Law)
LAW	682	Persuasive Speech	This performance-based course focuses on persuasive communication skills. Borrowing proficiencies typically developed for the theatre and applying them in a legal context, students gain increased confidence in communicating and advocating in the courtroom or ADR setting by developing such skills as: pacing, use of gestures, voice projection, voice modulation, and body positioning. Students are on their feet speaking to an audience (the class) each day of class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Juris Doctor of Law student; Credit is allowed for only LAW 682 or LAW 791 (Persuasive Speech)
LAW	685	Separation of Powers	Studies the separation of powers in our federal government by examining the impact of key historical events on constitutional law. Topics include the election of 1800, the Civil War, the Great Depression and World War II, presidential impeachments, and the war on terror.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 685 or LAW 691 (Separation of Powers)
LAW	686	Victims in Criminal Procedure	Considers the emerging field of crime victims' rights and the tensions victims' rights create with traditional prosecution and defense interests.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 686 or LAW 791 (Victims in Criminal Proceed)
LAW	687	Civil Pretrial Practice	Identifies the skills needed for civil pretrial practice and to appreciate what is involved in developing and applying these skills. In addition to discussion of the rules and their application, class focuses on custom and practice with the goal of preparing students for the practice of law in Arizona. There is insufficient time in this class, or frankly any class, to develop the skills to a point where students can feel comfortable that they have sufficient expertise to competently apply these skills. However, by participating in class activities that involve implementing these skills in the context of a specific case, students should leave with sufficient understanding of these skills that they can move quickly into and through the learning process that comes with practice experience.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 687 or LAW 691 (Civil Pretrial Practice)
LAW	688	Jury Selection	Provides a firm foundation for selecting juries in both civil and criminal cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 688 or LAW 791 (Jury Selection)
LAW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	701	Arbitration	Examines the Federal Arbitration Act and the Uniform Arbitration Act as it has been adopted in Arizona.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	702	Alternative Dispute Resolution	Broad exposure to methods of settling disputes in our society such as mediation, arbitration/conciliation, and negotiation, including examination of the current litigation model.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student

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LAW	703	Law, Science, and Technology	Legal mechanisms used in dealing with various issues raised by contemporary science and technology. Explores current legal responses to science and technology.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	704	Federal Indian Law II	Surveys the federal legal doctrines surrounding Indian ownership and exploration of resources.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	705	Media Law	Examines First Amendment principles and statutory and regulatory requirements with respect to the conventional print and broadcast media, as well as recent technologies such as cable.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	706	Immigration Law	Explores political, economic, social, and legal issues concerning immigration. Specific topics covered include citizenship and naturalization, denaturalization, deportation, and refugee rights and asylum.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	707	Elder Law	Looks at legal and policy questions related to aging individuals and an older society.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	709	International Human Rights	International rules and procedures governing the protection of human rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	713	Tribal Law and Government	Analyzes particular problems in tribal law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	714	Biotechnology	Examines the legal, regulatory, scientific, policy and ethical aspects of biotechnology, focusing on genetically engineered plants, animals, foods, drugs, vaccines and other products. Covers issues such as regulation, labeling, liability issues, intellectual property issues, antitrust, the role of the public in biotechnology decisions, international regulation, international trade, bioprospecting/biopiracy, xenotransplantation, animal cloning, synthetic biology, and bioterrorism.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 714 or LAW 691 (Biotechnology)
LAW	715	Sports Law	Unique legal problems relating to professional sports, including their relationship to antitrust laws, the nature of player contracts, and associated tax problems.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	716	Contract Drafting	Provides the opportunity to learn the basic principles of contract drafting, interpretation and negotiation, including drafting contracts that: (1) effectuate the clients' needs; (2) anticipate, and hopefully avoid, potential legal disputes; and (3) are written in plain language. Students represent a particular client throughout the course, and are required to work independently and collaboratively to draft a series of written contracts on behalf of the client. Students also learn about the role of transactional lawyers, ethical considerations, and effective client communications.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; LAW 515; Credit is allowed for only LAW 716 or LAW 691 (Contract Drafting)
LAW	717	Reproduction and the Law	When it comes to the creation of human life, yesterday's science fiction has become today's reality. Stories about baby sellers, egg freezing, runaway surrogate mothers, genetic enhancement and ootomoms have exposed the lack of meaningful legal regulation of assisted reproductive technologies and have spurred calls for reform. But the extent to which the State should regulate who can reproduce and under what circumstances raises a host of difficult questions. This course searches for answers to those questions by considering the role the Constitution, tort, contract, property and criminal law have traditionally played in advancing the State's interest in reproduction and discussing how those doctrines should adapt to new technologies and family configurations. Topics covered include abortion, gamete donation, In Vitro Fertilization, surrogacy, genetic screening and enhancement, eugenics, medical ethics, and alternative family formation.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 717 or LAW 791 (Reproduction and the Law)
LAW	718	Econ Dev in Indian Country	Focuses on the unique legal, economic, and political issues confronting tribal governments in developing diversified reservation economies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: Law major; Credit is allowed for only LAW 718 or PUP 718
LAW	719	Int'l Indigenous Rights	Examines the developments in recognizing indigenous rights in people's systems of international law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	720	Indian Gaming Law	Surveys the law surrounding the Indian gaming industry.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	721	Education and the Law	Current legal problems affecting institutions of higher education, faculty, students, and governing boards.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	723	Cultural Resources Law	Focuses on the protection of Native American cultural resources and religions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	724	Privacy	Traces the development of privacy law with special attention to contemporary challenges.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		

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LAW	725	Critical Race Theory	Focuses on the idea of "race" as a social/political construct and examines the impact of American law on the construction of race. Provide historical and legal background necessary to understand the significance of race within American law and policy. Evaluate a number of legal frameworks that address issues of race and ethnicity in various contexts (e.g. segregation laws, civil rights law, federal Indian law, international human rights law). Assesses various jurisprudential accounts evaluating the ethical and moral underpinnings of the law. Critical race theory is known as a jurisprudential framework that is often critical of standard liberal approaches. Evaluates the critiques of liberalism and the scholarship of both liberal and critical theorists.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	726	Indian Legal Research	Teaches students how to research Federal Indian law and tribal law issues. In addition to providing instruction about how to use particular research tools and sources, this course teaches students how to analyze research problems and how and why to use particular types of sources in their legal analysis.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 726 or LAW 691 (Indian Legal Research)
LAW	727	Int'l Legal Research	Teaches students how to research international and foreign law. As a course project, students prepare a bibliography on an international law topic of their choice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 727 or LAW 691 (Research & International Law)
LAW	728	The State Attorneys General	The legal jurisdiction of attorneys general varies significantly from state to state. Course represents the instructor's best judgment as to how to teach in a way that gets to the realities of the operations of attorneys general.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 728 or LAW 691 (The State Attorneys General)
LAW	730	Appellate Advocacy	Covers the conventions of appellate practice while further developing analytical, drafting and oral communication skills. Tasks students both with drafting an appellate brief and with presenting a formal appellate oral argument.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 730 or LAW 691 (Appellate Advocacy)
LAW	731	High-Tech Licensing	Dedicated to learning the law, skills and strategies for licensing intellectual property rights relating to technology. Familiarizes students with licensing parties' objectives, intellectual property rights to be licensed, and writing contracts to achieve the client's goals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 731 or LAW 791 (High Tech Licensing)
LAW	732	Patent Prep and Prosecution	Dedicated to learning the mechanics and strategies for preparing, filing and prosecuting patent applications. Familiarize students with guiding an invention from conception to patent, both domestically and abroad. Considers strategies of patent drafting to provide broad patent scope and enforceable patent claims. Knowledge of intellectual property or patent law recommended prior to taking this course.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Credit is allowed for only LAW 732 or LAW 691 (Patent Preparation)
LAW	733	Negotiation	Explores alternative models of negotiated dispute resolution, as well as the roles of lawyer and client in the negotiation process. Extensive use of simulation exercises.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	734	Products Liability	Traces the development of products liability law; analyzes the major issues currently confronting the courts in this area.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	735	Teaching Assistant	Legal writing teaching assistants assist a writing professor with various tasks throughout the semester.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	736	Adv Legal Research Seminar	Focuses on a rigorous review of basic print and electronic resources and strategies for conducting legal research, federal/state.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	737	Cults & Alternative Religions	Provides opportunity to study laws and policies governing cults. While the definition of a "cult" will be a topic of initial study in the seminar, it may be conceived of loosely as a group with a charismatic leader whose members are persuaded to relinquish their self-identities and material possessions in furtherance of the group's goals. In addition to analyzing the definition of a cult, the first part of the seminar discusses the various types of cults, studying particular cults, and learning about cultic activities. The remainder covers domestic and foreign legal and policy issues generated by cults, including the legal rights of cultic organizations, anti-cult organizations, cult members, and cult members' families. Covers conventional religions that are conceptually similar to cults, to the degree that religious movements fall outside the mainstream.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	738	Trial Advocacy	Confronts issues of trial advocacy through simulation of a variety of aspects of trial practice in a mock court setting.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 605
LAW	745	The Supreme Court	Intensive examination of selected current decisions of the U.S. Supreme Court.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		

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LAW	751	Death Penalty	Surveys the major constitutional and operational issues relating to the death penalty in the United States.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 751 or LAW 691 (Death Penalty)
LAW	768	Intl Business Transactions	Introduction to U.S., foreign, and international law regulating cross-border business transactions and to the structure of cross-border business deals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 515 and 654
LAW	770	Law Journal	Academic credit for successful completion of editorial work by a member of the staff of Arizona State Law Journal.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	771	Jurimetrics Journal	Academic credit for successful completion of editorial work by a member of the staff of the Jurimetrics Journal of Law, Science, and Technology.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	772	Defender Clinic	Placement in the Public Defender Clinic and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	773	Civil Litigation Clinic	Student attorneys in the Civil Litigation Clinic are certified by the Arizona Supreme Court to represent people who do not have adequate resources to hire an attorney in cases such as consumer fraud, employment discrimination and wage claims, benefits eligibility for people with disabilities, and tenant's rights. Student attorneys are involved in all aspects of civil and administrative practice including interviewing and counseling clients, fact investigation, drafting pleadings, motions and appellate briefs, conducting discovery such as taking depositions and propounding interrogatories, and representing clients in trials, arbitrations and mediation. Student attorneys may also present oral argument in appellate courts.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student
LAW	774	Prosecution Clinic	Placement with various prosecutor offices in the Phoenix area and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; LAW 605
LAW	775	Mediation Clinic	Study of the mediation process and experience as mediators in cases pending before the justice courts and administrative agencies.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	776	Indian Legal Clinic	Provides law students the opportunity to participate in cases dealing with native peoples and Indian issues.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	777	Innovation Advancement Clinic	Allows students to gain real-world experience in legal areas such as patentability of inventions, patent drafting, and technology valuation.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	778	Immigration Clinic	The Immigration Clinic collaborates with local nonprofits, governmental agencies and community advocates to identify foster children in need of immigration services. The clinic also provides legal advice and referral at events organized by community agencies, nonprofits and elected officials.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	779	Patent Law Clinic	Trains students to perform the legal skills necessary to practice transactional patent and trademark law.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 779 or LAW 791 (Patent Litigation Clinic)
LAW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	781	Independent Study	With the approval of a faculty member, a student may research a legal subject of special interest and prepare a paper suitable for publication.	Y	IND	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	785	Externship	Supervised, practical lawyering in an external placement proposed by the student or established by a sponsoring agency and approved by the Sandra Day O'Connor College of Law. In addition, an associated academic component is established by the student with a member of the faculty.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	786	Post-Conviction Clinic	Investigates claims of wrongful conviction and manifest injustice from prisoners convicted of crimes in Arizona. Post-conviction work is a specialized practice area that delves into both fundamental and nuanced aspects of criminal law and criminal procedure—one that is becoming increasingly vital as over 400 prisoners nationwide have been exonerated either in full or in part by DNA testing, and over 1,500 people have been exonerated by other means. Arizona is home to more than 40,000 prisoners and more than 5,000 on community supervision. Arizona incarcerates more people per capita than any other state in the west and ranks sixth in the country. The clinic works in conjunction with the Arizona Justice Project and some of the case profiles.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; Pre- or corequisite(s): LAW 516; LAW 518; LAW 605; LAW 638; Credit is allowed for only LAW 786 or LAW 791 (Post Conviction Clinic)
LAW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		

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LAW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-15		Prerequisite(s): College of Law student
LAW	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		
LAW	797	Visiting Student Program	-	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	0-1		Prerequisite(s): College of Law student
LDE	261	Landscape Arch Design Fund III	Applies design fundamentals with an emphasis on landscape architectural issues.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture BSLA major; passed milestone; ALA 122 with C or better; Corequisite(s): ALA 235 or LAP 231 OR Visiting University Student
LDE	262	Landscape Arch Design Fund IV	Applies design fundamentals to landscape architectural design with emphasis given to human factors.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture major; LDE 261 with C or better
LDE	361	Landscape Architecture I	Site planning; analysis of natural and cultural features; site systems and implications for plan making and design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 262 with C or better; Corequisite(s): LAP 352; LDE 363; LTC 343 OR Visiting University Student
LDE	362	Landscape Architecture II	Site design: site-specific design of configured space by the creative development of form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 361 with C or better; Corequisite(s): LAA 345; LAP 352
LDE	461	Landscape Architecture III	Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 362 with C or better; Corequisite(s): LPH 411 OR Visiting University Student
LDE	462	Landscape Arch IV	Advanced landscape architecture: integrative capstone studio with multifaceted design problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 461 with C or better; Corequisite(s): LTC 446
LDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LDE	521	Adv Landscape Arch Studio I	Explores landscape architecture and design with emphasis on the urban landscape and the significance ecology plays in the design process. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Landscape Architecture student; Credit is allowed for only LDE 521 or LDE 590 (Advanced Landscape Architecture Studio I) or LDE 590 (Applied Landscape Architecture)
LDE	522	Adv Landscape Arch Studio II	Explores landscape architecture and design with emphasis on urban landscapes and human health. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 521 with C or better; Credit is allowed for only LDE 522 or LDE 590 (Advanced Landscape Architecture Studio II) or LDE 590 (Advanced Landscape Studio II)
LDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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LDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	621	Adv Landscape Arch Studio III	Structured around the Design School's "traveling studio" model and provides an opportunity for graduate-level students to refine their talents while also contributing to a better future. Challenges students to work in a multidisciplinary environment to identify new design concepts that improve society and the natural environment. For approximately one week during the semester, students travel to an off-campus location (either in the U.S. or abroad) to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 522 with C or better; Credit is allowed for only LDE 621 or LDE 690 (Advanced Landscape Architecture Studio III)
LDE	622	Adv Landscape Arch Studio IV	Capstone course. Students complete a design project that demonstrates mastery of landscape architecture skills and knowledge. Requires some independent direction. The instructor determines deadlines and expectations for deliverables. Requires cooperation and collaboration between students. Design performance is the themed topic and focus. Students develop a complex design project that addresses a significant professional issue. The project explores and demonstrates how advanced design resolves that issue in a performative manner using evidence-based practices and performance-based metrics. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 621 with C or better; Credit is allowed for only LDE 622 or LDE 593 (Advanced Landscape Architectural Studio IV)
LDE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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LES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	305	Business Law&Ethics for Mgrs	Legal theories, ethical issues, and regulatory climate affecting business policies and decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey student OR non-business student; minimum 2.50 GPA; minimum 56 hours OR non-degree student; minimum 2.50 GPA OR graduate student OR Visiting University Student
LES	380	Consumer Perspective Bus Law	Role of law as it affects society. Uses case studies to present principles that govern business and consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.00 GPA ; minimum 56 hours, OR non-degree student with minimum 2.0 GPA, OR graduate student OR Visiting University Student
LES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Pre-requisites: Minimum 2.00 GPA; Minimum 56 hours OR Non-degree seeking student
LES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	582	Ethical Issues for Managers	Studies ethical decisions; the role of business in society.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5-3		Prerequisite(s): W. P. Carey MBA student
LES	586	Fund Ethical Issues Managers	Studies ethical decisions, the role of business in society. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
LIA	101	Student Success in The College	Introduces students to resources that help them succeed in The College of Liberal Arts and Sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Credit is allowed for only LIA 101 or LIA 194 (Introduction to Liberal Arts and Sciences)
LIA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
LIA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIN	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Also serves as an introduction to the profession.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 501 or LIN 501
LIN	510	Linguistics	Overview of linguistics, its subfields, and some of its applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510
LIN	511	Phonetics and Phonology	Current trends in phonological theory and its basis in acoustic and articulatory phonetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	513	Semantics	Current approaches to linguistic meaning with particular attention to English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	514	Syntax	Analyzes syntactic structures using a generative theoretical model with a focus on English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	515	American English	Development of the English language in America, including regional and social varieties, and its relationship to other immigrant and native languages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	516	Pragmatics/Discourse Analysis	Studies language use in context and language structures in spoken and written texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517

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LIN	520	Second-Lang Acquisition Theory	Theories of second-language acquisition, including the linguistic, cognitive, and sociocultural aspects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	521	Mthds Teachng Engl as Sec Lang	Methods of teaching English as a second language, language teaching trends, practical applications, and the teaching of different skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	522	Grammar for TESL	Surveys major grammatical structures in English and how they can be taught to ESL speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	523	Language Testing and Assessmnt	Introduces the theory and practice of language test construction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	524	Curriculum Design/Material Dev	Practical guide to curriculum and materials development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
LIN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	597	MTESOL Capstone	Provides MTESOL students with a culminating experience in which they bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that the students carry out to demonstrate their ability to apply scholarly and professional knowledge in TESOL practice. Provides opportunities to engage in some professional activities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Teaching English to Speakers of Other Languages MTESOL student; Credit is allowed for only ENG 597 or LIN 597
LIN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	610	Advanced Studies Linguistics	Different topics such as morphology, semantics, typology, history of linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	614	Advanced Studies in Syntax	Focuses on morphosyntactic feature checking, movement, phrase structure, and their crosslinguistic differences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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LIN	615	Adv Studies Sociolinguistics	Language in its social setting, e.g., social variation among native speakers, sociolinguistics aspects of second-language acquisition, and language policy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	616	Adv Studies Discourse Analysis	Advanced analysis of spoken and written discourse emphasizing different methodological and theoretical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	617	Adv Stdy Historical Linguistic	Overview of theories on language change, the history of languages, and of methods in historical linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	620	Adv Stdy Second-Lang Acquisitn	Selected topics in second-language acquisition, such as phonetics and phonology, morphology, syntax, and discourse.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing—an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
LIN	655	Adv Disciplinary Discourses	Advanced investigation of professional and disciplinary issues related to linguistics and applied linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LPH	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	322	Fundamentals of Ecology Lab	Investigational field course on fundamental concepts in ecology.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 320 or BIO 320 with C or better if completed OR Visiting University Student
LSC	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student

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LSC	347	Fundamentals of Genetics	Science of genetics, gene flow, and genetic engineering in humans and other organisms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 or 188 with C or better; BIO 182 or 187 with C or better; CHM 116 with C or better OR Visiting University Student
LSC	348	Fundamentals of Genetics Lab	Investigational activities using modern molecular techniques to analyze various genetic phenomena.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 347 with C or better if completed OR Visiting University Student
LSC	359	Animal Physiology Laboratory	Investigative lab experience using animals (including humans) and models.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 358 or BIO 360 with C or better if completed
LSC	362	The Human Environment	Evolution of humans' physiological, ecological, and behavioral interaction with their environment.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182
LSC	363	Genes, Race, Gender & Society	Examines biological events and theories on race and gender and their interface with societal views.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 340 or LSC 347; ENG 101, 105, or 107 with C or better OR Visiting University Student
LSC	365	The Human Organism	Analyzes human anatomy, physiology, and behavior in an ecological and evolutionary context with the methods of comparative biology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	
LSC	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
LSC	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347; Credit is allowed for only FOR 380 or LSC 380
LSC	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
LSC	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
LSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
LSC	426	Analytical Chemistry Lab	Students learn basic principles of analytical chemistry and explore a wide range of common techniques and methods with applications to forensic science and life sciences. Places specific focus on techniques common in modern analytical laboratories, including gas chromatography, mass spectrometry, FTIR and NMR spectroscopic techniques. Other topics include interpretation of analytical data and evaluation of error and uncertainty in measurements.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
LSC	430	Environmental/Human Toxicology	Lecture/fieldwork course investigating toxic substances in the environment and their effect on the health of organisms, including humans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; CHM 116 with C or better
LSC	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347; BIO 353; CHM 231 or 234; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student

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LSC	434	Marine Ecology	Examines ecological processes in oceans, seas, and estuaries that emphasizes species- and community-level phenomena.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; LSC 320 or BIO 320 with C or better; Credit is allowed for only BIO 438 or BIO 494 (Marine Biology) or LSC 434 OR Visiting University Student
LSC	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
LSC	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
LSC	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; LSC 347; Credit is allowed for only FOR 480 or FOR 494 (Advanced Topics in Human Forensic DNA Typing) or LSC 480 or LSC 494 (Advanced Topics in Human Forensic DNA Typing)
LSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
LSC	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
LSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
LSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
LSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
LSC	519	Applied Learning Lab	Workshop-style course where students develop and peer review graduate-level project proposals. Topics may include integrative writing skills for an interdisciplinary thesis, presentation skills and topics tailored to the appropriate lay or technical audience, writing for a wide range of journals.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	547	Wet Laboratory Experience	Balances the need for bench work and in silico experience for students interested in pursuing a career with learning important statistical and computational tools to analyze biological data. Under the direct supervision of the PI and/or Laboratory Manager, students receive instruction and perform all experiments as specified in the performance objectives for the course.	N	LAB	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	555	Integrative Biology I	Provides a comprehensive understanding of the human genome, recent developments, next generation sequencing techniques including the preparation of DNA samples as well as principles of the new generation sequencing assay formats. Describes, critically evaluates and applies theoretical perspectives within genetic/genomic studies, develops and uses computational and mathematical tools and of the invaluable lines of inquiry these biomedical investigations may portend.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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LSC	566	Integrative Biology II	Provides a survey of fundamental issues in organismal biology. Covers biological diversity, relationships between form and function, processes of growth and development in individuals and populations, biomes and organism-environment relationships, populations and ecosystem function. Weaves components of previous course work throughout this course where possible.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	562	Applied Math Tech in Biology	Population dynamics, molecular interactions, population genetics, and other biological applications motivate the discrete and continuous mathematics. Studies mathematical techniques and applications representative of a range of applied mathematics topics. Incorporates computer software to help with visualization and numerical solutions of some of the problems.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
LSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LAB	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LAB	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	303	Human Dev Learner Capabilities	Surveys major themes and recent findings in the area of human development across the lifespan, with emphasis on the physical, cognitive, social and emotional domains. Examines the impact of ethnic, gender and cultural factors on development. Applies theories of human development to various educational environments and learning activities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	305	Conceptualizing Learning	Explores a variety of learning theories. Covers the role of the educator, the role of the student, and how tools and systems can help facilitate teaching and learning opportunities. Students design learning experiences for a specific need or opportunity using current research-based learning theories.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	401	Designing LrnEnv for Inclusion	Analyzes current education systems for their ability to meet the needs of diverse populations. Designs sustainable solutions to promote inclusivity in learning environments. Applies current research-based learning theories through a design process. Students advocate for education that changes communities and lives by developing educational solutions that address social concerns.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	SB	Prerequisite(s): minimum 45 hours
LSE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	540	Theoretical Views Lrng in LS	Theoretical perspectives that inform learning scientists. Examines affordances and limitations of theories for designing productive learning environments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDP 540 or LSE 540

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LSE	542	Research Methods Learning Sci	Develops a strong methodological toolkit for building, testing and advancing learning theory through innovations that achieve meaningful impact. The field of the learning sciences is interdisciplinary, drawing on multiple theoretical perspectives and research paradigms to build understandings of the nature and conditions of learning, cognition and development.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	570	Case Exemplars Learning Systms	Examines in-depth cases of learning systems in order to examine different ways of explaining learning, knowing and teaching and attendant strategies for generating data about these systems.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	571	History of Learning Sciences	Examines the history of the interdisciplinary field of the learning sciences in relation to the various disciplinary traditions from which it derives.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		
LSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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LSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	370	Dimensions of Liberal Studies	Draws on the humanities and social sciences to engage diverse ideas and perspectives, develop resilient and productive habits of mind, and investigate the different dimensions of human meaning-making.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): Liberal Studies BA major; ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
LST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	470	Liberal Studies Seminar	Advanced analysis and application of theories and methods of human and social inquiry.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Liberal Studies BLS major; ENG 102, 105, or 108 with C or better; LST 370 (BIS 370) with C or better; minimum senior standing OR Visiting University Student
LST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
LST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		
LST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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LST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
LST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
LTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAE	201	Mech. Particles/Rigid Bodies I	Force vectors and force system resultants, equilibrium of particles and rigid bodies, friction, centroid and moments of inertia of an area. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Credit is allowed for only MAE 201 or MAE 212 OR Visiting University Student
MAE	202	Mech.Particles/Rigid Bodies II	Kinematics and kinetics of particles. Work, energy, and momentum principles for particles. Planar kinematics and kinetics of rigid bodies. Conservation of energy and momentum for rigid bodies. Equations of motion for particles and rigid bodies. Vibrations. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Aerospace or Mech Engr BSE major; MAE 201 OR non-Aerospace or non-Mech Engr major; CEE 210, CNE 210, or MAE 201; Pre- or coreq(s): MAT 274 or 275; Credit is allowed for only MAE 202 or 212 OR Visiting University Student
MAE	213	Mechanics of Materials	Equilibrium, strain-displacement relations, and stress-strain-temperature relations. Applications to force transmission and deformations in axial, torsional, and bending of bars. Combined loadings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 201 with C or better; MAT 274 or 275 with C or better; PHY 122 with C or better OR Visiting University Student
MAE	214	Computer-Aided Engineering I	Introduces geometry and construction techniques in CAD, technical drawing conventions, generating drawings from CAD models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical & Aerospace Engineering major; Pre- or corequisite(s): MAE 201 or 212 with C or better if completed OR Visiting University Student
MAE	215	Intro to Programming in MATLAB	Introduces basic topics and concepts of computer programming in MATLAB.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace or Mechanical Engineering BSE major or Biomedical Engineering BSE major; MAT 265 or 270 with C or better OR Visiting University Student
MAE	241	Intro to Thermodynamics	Concepts of equilibrium, properties, states, systems, energy and entropy; 1st and 2nd thermodynamic laws, analysis of open and closed systems, power and refrigeration cycles.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Aerospace or Mech Engr BSE major; CHM 114 or 116; MAT 267 or 272; PHY 121 OR non-Aerospace or non-Mech Engr major; MAT 267 or 272; PHY 121; Credit is allowed for only MAE 240 or MAE 241 OR Visiting University Student
MAE	242	Intro to Fluid Mechanics	Introductory survey course covering fundamental concepts relating to engineering fluids. Fluid statics. Integral methods. Differential methods. Dimensional analysis and similarity. Incompressible internal and external flow. Potential flow. Required for Aerospace Engineering and Mechanical Engineering majors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereqs w/C: MAT 267, 272; MAT 274, 275; MAE maj: MAE 201 OR non-MAE maj: CEE 210, CNE 210, MAE 201; Pre- or coreqs w/min C: MAE maj: MAE 202, 212 OR non-MAE maj: CEE 212, MAE 202, MAE 212; Credit allowed for MAE 240 or 242 OR Visiting University Student
MAE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MAE	301	Applied Experimental Statistic	Introduces key concepts in probability and statistics with engineering applications. Emphasizes modeling variation in observations, characterizing its distribution, and making inferences with regard to quality assurance and control. Develops critical skills such as fitting multivariate models, experimental design, and hypothesis testing, utilizing data from engineering projects, simulations, and laboratory experiences.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s): Aerospace or Mech Engr major; With C or better: CSE 100, CSE 110 or MAE 215; MAE 384; MAT 242, 342 or 343; MAT 274 or 275; MAT 267 or 272; Credit allowed for MAE 301 or MAE 394 (Applied Experimental Statistics) OR Visiting University Student

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MAE	318	System Dynamics and Control I	Dynamics of physical systems, models of mechanical, electrical and electromechanical systems, Laplace transform, transfer functions, time response and frequency response, poles and zeros, block diagrams, stability, introduction to feedback control: closed-loop response, PID compensation, steady-state characteristics, root-locus design and analysis of systems, frequency-domain design concepts, Bode-plots and analysis of systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s) with C or better: EEE 202; MAE 202 or 212; MAE 384; MAT 267 or 272; PHY 131; PHY 132; Aerospace or Mechanical Engineering BSE major; Pre- or corequisite(s): MAE 301 with C or better if completed OR Visiting University Student
MAE	341	Mechanism Analysis and Design	Positions, velocities, and accelerations of machine parts; cams, gears, flexible connectors, and rolling contact; introduces synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 212 with C or better, or both MAE 201 and 202 with C or better
MAE	384	Adv Math Methods for Engineers	Methods for numerical solutions to engineering problems. Nonlinear equations, quadrature, ordinary differential equations. Analytical and numerical solutions to partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	CS	Prereq(s): Engr mjr; CSE 100, 110, or MAE 215 w/C or better; MAT 242, 342, or 343 w/C or better; MAT 274 or 275 w/C or better; Pre- or coreq(s): MAT 267 or 272 w/C or better if completed; Credit for only CEE 384 or MAE 384 OR Visiting University Student
MAE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	400	Engineering Profession	Impact of mechanical and aerospace engineering in a global and societal context; effects of and on globalization, environment, sustainability, economy, politics; engineering ethics and business practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Aerospace Engineering or Mechanical Engineering BSE majors; ENG 101, 105, or 107 with C or better; MEE 322, MAE 322, AEE 325, or MAE 325 with C or better OR Visiting University Student
MAE	404	Finite Elements in Engineering	Formulation and application of the finite element method through integration of theory, code development and application to problems in heat transport and solid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 or MAE 213 with C or better; CEE 384 or MAE 384 with C or better
MAE	417	System Dynamics and Control II	Fundamentals of feedback control using linear transfer function system models. Analysis in time and frequency domains. Design in the s-plane (root locus) and in the frequency domain (loop shaping). State-space representation and state-feedback control, multivariable control with observers, discrete systems and z-transform, nonlinear systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE or Aerospace Engineering BSE major; MAE 318 with C or better OR Visiting University Student
MAE	436	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 with C or better; Credit is allowed for only MAE 436 or MAE 536 OR Visiting University Student
MAE	455	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Fult Engrn undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student
MAE	460	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering Undergrad student; AEE 360 or MEE 340 w/ C or better; Credit allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dyn) or MAE 560 or MAE 598 (Applied Computational Fluid Dyn) OR Visiting University Student
MAE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		
MAE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MAE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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MAE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
MAE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-3		
MAE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MAE	502	Partial Diff Equations Engr	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; credit is allowed for only MSE 502 or MAE 502
MAE	503	Finite Elements in Engineering	Ideas and methodology of finite element analysis. Applications to solid mechanics, heat transfer, fluid mechanics and vibrations. Knowledge of free-body diagrams and vector calculus operations is recommended.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 404 or MAE 503 or MAE 598 (Finite Elements in Engineering)
MAE	504	Exper Mthds Thermal/Fluid Proc	Theory of analog and digital signal analysis as applied to fluid and thermal measurements; optical diagnostics and micro sensors for measuring fluid velocity, pressure and temperature in unsteady flows; particle image velocimetry and thermal anemometry. Applies experimental in a weekly laboratory. Students should have completed an intermediate-level course in fluid dynamics, familiarity with Matlab or some programming language, prior exposure to Fourier series and Fourier transforms, as well as probability and statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Ira A. Fulton graduate student; Pre- or corequisite(s): MAE 571
MAE	505	Perturbation Methods	Nonlinear oscillations, strained coordinates, renormalization, multiple scales, boundary layers, matched asymptotic expansions, turning point problems, and WKBJ method.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering students; Credit is allowed for only APM 575 or MAE 505
MAE	506	Adv Sys Model, Dynamic, Contrl	Lumped-parameter modeling of physical systems with examples. State variable representations and dynamic response. Introduces modern control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506
MAE	507	Control and Optimization	Optimal control of continuous-time dynamic systems. Linear systems and signal spaces, robust and LQR optimal control, optimization methods and LMIs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; MAE 506 with C or better
MAE	508	Digital Control:Design/Implmnt	Analysis and design of control systems in which the digital computer plays a major role. Review of continuous control and introduction to the key effects of sampling. Elements of discrete system analysis: z-transform; sampled-data systems; sampling theorem and combined discrete and continuous system and the phenomenon of aliasing. Deterministic design methods for digital control systems (root-locus, frequency response, pole placement and estimators). Multivariable, optimal control and Kalman filtering, followed by nonlinear control and system identification. Emphasizes digital control implementation topics and a case study on robot control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only MAE 508 or MAE 598 (Digital Control: Design and Implementation)
MAE	509	LMI Methods	The recent introduction of Linear Matrix Inequality (LMI) methods in control has dramatically expanded the types and complexity of the systems we can control. For example, consider the problems: gain scheduling for missile attitude control (a switched system); control of robots over noisy communication channels (a sampled-data systems); remote control of spacecraft attitude (a delayed system); behavioral therapy (a system with binary inputs); or self-driving vehicles (a case of decentralized control). None of these systems can be studied using classical root-locus or PID control methods. Rather, advances in these fields have been made possible through the increased power and flexibility created by the LMI (optimization-based) approach to control. Background knowledge in controls and linear algebra is recommended to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MAE 509 or MAE 598 (LMI Methods in Optimal and Robust Control)

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MAE	510	Dynamics and Vibrations	Lagrange's and Hamilton's equations, rigid body dynamics, gyroscopic motion, and small oscillation theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering students
MAE	512	Random Vibrations	Reviews probability theory, random processes, stationarity, power spectrum, white noise process, random response of single and multiple DOF systems, and Markov processes simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2-3		Pre-requisite: Graduate Engineering major
MAE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MAE	514	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 415 or MAE 514
MAE	515	Structural Dynamics	Free vibration and forced response of discrete and continuous systems, exact and approximate methods of solution, response spectra, computational techniques, special topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 510 with C or better; Credit is allowed for only MAE 494 (Structural Dynamics) or MAE 515
MAE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Fulton Engineering Graduate students; Credit is allowed for only CHE 518, EEE 518, MSE 475, MSE 518 or MAE 518
MAE	519	Mechanics of Micro/Nano System	Basic processes used for fabricating micro and nanoscale structures used in MEMS. Analyzes the processes and micro/nanoscale structures from a mechanics perspective. Covers the fundamentals of microfabrication, scaling of forces, thermal stresses and strains in thin beams, thermal oxidation and dynamics of MEMS. Optional topics include mechanics of thin films and nanostructured materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 519 or MAE 598 (Mechanics of Micro/Nano Systems)
MAE	520	Stress Analysis	Introduces tensors: kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	521	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
MAE	522	Plasticity	Discusses theory of plastic (and inelastic) deformation in solids, e.g., metals and polymers, with emphasis on the fundamental foundations of the field derived from empirical observations and thermodynamic principles, all within a small strain framework. Assumes some knowledge of undergraduate-level thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 520 or 529; Credit is allowed for only MAE 522 or MAE 598 (Plasticity)
MAE	523	Fracture Mechanics	Linear elastic fracture mechanics. Nonlinear problems. Fatigue fracture. Experimental methods in fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 598 (Continuum Mechanics) with C or better
MAE	524	Theory of Elasticity	Elastic behavior in two and three dimensions. Airy stress functions and displacement potentials. Elements of fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; MAE 520 or MAE 598 (Continuum Mechanics)
MAE	526	Design of Aerospace Structures	Provides a fundamental understanding of the design of aerospace structures. Topics include flight vehicle loads, metallic and composite materials, manufacturing methods, buckling and crippling of aerospace structures, fatigue, damage tolerance, finite element structural analysis, and design of joint and fittings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 426 (or MAE 426) or MAE 526 or MAE 598 (Design of Aerospace Structures)
MAE	527	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527
MAE	528	Advanced Computational Mechani	Teaches methods for treating material and geometric nonlinearities by finite elements for transient and static simulations. Topics to be included are total and updated Lagrangian formulations, linearization and solution methods, stability analysis, nonlinear material models such as hyperelastic and plasticity, and recent research topics such as extended finite element methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): CEE 526 or MAE 527 or MAE 598 (Finite Elements in Engineering); MAE 529; Credit is allowed for only MAE 528 or MAE 598 (Advanced Computational Mechanics)

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MAE	529	Continuum Mechanics	Tensors, Eulerian/Lagrangian strains, compatibility equations, Cauchy/nominal stresses, balance laws, Reynolds transport theorem, laws of thermodynamics for a continuum; equations of state, restrictions on constitutive laws, Newtonian fluids, inviscid flows, viscoelasticity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only MAE 529 or MAE 598 (Continuum Mechanics)
MAE	530	Dynamic Behavior of Materials	Focuses on material response under fast mechanical loading, with emphasis on plastic and elastic behavior as a function of pressure, temperature and strain rate, with and without effects of inertia. Starts with a treatment of elastic wave propagation, followed by a study of effects of strain rate and temperature on plastic behavior of metals, including a review of mechanisms and constitutive equations. Then, addresses the theory of shock waves including analysis of shocks using conservation principles as well as thermodynamics, followed by a discussion of dynamic failure. Finally, reviews experimental techniques for dynamic experiments, including drivers and diagnostics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; MAE 520 or 529; Credit is allowed for only MAE 530 or MAE 598 (Dynamic Behavior of Materials)
MAE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
MAE	536	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 436 or MAE 536
MAE	540	Advanced Product Design Method	Surveys research in engineering design process, artifact and design, knowledge, formal and informal logic, heuristic and numerical searches, theory of structure and complexity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical or Aerospace Engineering graduate student
MAE	541	CAD Tools for Engineers	Elements of computer techniques required to develop CAD software. Data structures, including lists, trees, and graphs. Computer graphics, including 2- and 3-D algorithms and user interface techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	542	Design Geometry and Kinematics	Selected topics in geometry related to current potential applications in CAD/CAM, design theory, kinematics, and robotics. Euclidean isometrics, transformations; 4-D geometry; screw theory and its applications to robotics and assemblies. Differential geometry; curvature and torsional properties of curves and surfaces.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical and Aerospace Engineering graduate student; Credit is allowed for only MAE 542 or 598 (Design Geomtry & Kinematics)
MAE	544	Mech Design/Failure Prevention	Modes of mechanical failure; applies principles of elasticity and plasticity in multiaxial state of stress to design synthesis; failure theories; fatigue; creep; impact.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	545	Modern Manufacturing Methods	Investigates the capabilities and equipment of both conventional manufacturing processes and modern manufacturing processes. Emphasizes the fundamental, development and application of casting, forming and sintering processes for conventional manufacturing processes. Emphasizes the emerging topics related to additive manufacturing, field-assisted manufacturing and nanomanufacturing for modern manufacturing processes. Also introduces engineering materials, structure of materials, property of materials and material characterizations in the manufacturing processes. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Develops an understanding of manufacturing process evolution and the capabilities of modern manufacturing processes and equipment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 545 or MAE 598 (Modern Manufacturing Methods) or MFG 545
MAE	546	Advanced CAE Simulation	Solution of advanced engineering problems with analysis software for structural, dynamic, nonlinear, contact and kinematic problems; selection of modeling parameters; reliability tests on software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MAE 406 or 546
MAE	547	Modeling and Control of Robots	Homogeneous transformations, workspace, forward and inverse kinematics, differential kinematics, statics and dynamics, motion planning, motion and force control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501
MAE	548	Prob Methods for Eng Des/Analy	Fundamental probabilistic theory, engineering statistics, data analysis, reliability methods, Monte Carlo simulation with different sampling technique, mechanical and structural analysis under uncertainties, focusing on the application for mechanical, aerospace and civil engineering structures and materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 548 or MAE 598 (Probabilistic Methods for Eng Analysis and Design)

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MAE	557	Mechanics Composite Materials	Analysis, design, and applications of laminated and chopped fiber reinforced composites. Micro- and macromechanical analysis of elastic constants, failure, and environmental degradation. Design project.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 529
MAE	560	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dynamics) or MAE 560 or MAE 598 (Applied Computational Fluid Dynamics)
MAE	561	Computational Fluid Dynamics	Finite-difference and finite-volume techniques for solving the subsonic, transonic, and supersonic flow equations. Method of characteristics. Numerical grid-generation techniques.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; Credit is allowed for only AEE 471 or MAE 471, 561
MAE	562	Advanced CFD - Interfaces	Numerical methods for interfaces in low Mach number flows including level set methods, volume of fluid methods, Lagrangian interface tracking, ghost fluid methods, and immersed boundary methods. Includes coding of the covered numerical techniques and application to different physical interfaces, e.g., liquid/gas phase interfaces, premixed flames and flows in complex geometries.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 561; Corequisite(s): MAE 502, 529, or 571; Credit is allowed for only MAE 562 or MAE 598 (Advanced Computational Fluid Dynamics)
MAE	563	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems. Recommend a background in thermodynamics and high-speed aerodynamics.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only AEE 463 or MAE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) or MAE 598 (Propulsion)
MAE	564	Advanced Aerodynamics	Advanced topics in aerodynamics with application to design. Slender body theory. Thin airfoil theory. Transonic and supersonic effects. Sweep theory. Wave drag. Post-stall (vortex) flows. Supersonic and hypersonic flows.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Aerospace Engineering major
MAE	565	Rocket Propulsion	Rocket flight performance, nozzle design, combustion of liquid and solid propellants, component design, advanced propulsion systems, interplanetary missions, testing.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 465 (or MAE 465) or MAE 565 or EGR 598 (Rocket Propulsion) or MAE 598 (Rocket Propulsion)
MAE	566	Rotary-Wing Aerodynamics	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE 466 or 566
MAE	570	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics; property relationships, power and refrigeration cycles, and reactive systems. A basic knowledge of thermodynamics is required to be successful in this course.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MAE 482 or MAE 570 or MEE 482
MAE	571	Fluid Mechanics	Basic kinematic, dynamic, and thermodynamic equations of the fluid continuum and their application to basic fluid models.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre- or corequisite(s): MAE 502
MAE	573	Advanced Fluid Mechanics	Mechanics of fluids flows where either the effects of inertia or viscosity are significant. Exact and approximate solutions of the Navier-Stokes equations, laminar flow and flow at low and high Reynolds numbers.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 571 with C or better
MAE	574	Multiphase Flow	Models for multiphase flows including dispersed and continuous phase flow models, particle-fluid and particle-particle interactions, droplet collision and coalescence, atomization, and numerical and experimental methods for analyzing multiphase flows.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 502; MAE 529; MAE 571; Credit is allowed for only MAE 574 or MAE 598 (Multiphase Flow)
MAE	575	Turbulence	Graduate-level introduction to turbulent flows covering the essential physical basis of turbulence, the statistical description of turbulent flows, dynamics of energy transfer and dissipation in such flows, inner- and outer-variable scaling of turbulent flows, and modern computational modeling and simulation of turbulence and turbulent flows. Requires undergraduate background in fluid mechanics and strong graduate-level mathematics.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student

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MAE	576	Energy Efficiency	Provides a broad background in energy efficiency analysis and technologies. Applies fundamental concepts from thermodynamics, heat transfer and fluid mechanics to real-world applications including heating, ventilating, air conditioning (HVAC), refrigeration, compressed air systems, steam systems, combined heat and power (CHP). Complements other courses on conventional and renewable power generation by focusing on reducing energy consumption, thus making it easier to meet our energy needs from sustainable sources. To be successful in this course, students should have knowledge of thermodynamics principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 494 (Energy Management) or MAE 494 (Energy Efficiency) or MAE 576 or MAE 598 (Energy Management)
MAE	577	Advanced Turbulence	Reynolds equations and their closure. Modeling of simple and complex turbulent flows, calculations of internal and external flows, and application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 575 with C or better
MAE	578	Geophys & Environ Fluid Dynam	Dynamics of large-scale flows under the influence of stratification and earth rotation. Thermally and mechanically driven flows in turbulent boundary layer. Waves and instability of geophysical flows. Global-scale circulation. Applications to environmental prediction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
MAE	579	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441
MAE	581	Advanced Thermodynamics	Basic concepts and laws of classical equilibrium thermodynamics; applications to engineering systems; introduction and applications of statistical mechanics and kinetic theory; Boltzmann integro-differential equation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	582	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems, and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)
MAE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
MAE	585	Solar Thermal Engineering	Solar energy availability, flat-plate and concentrating solar thermal collectors, solar heating and cooling, concentrating solar power (CSP).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering student; credit is allowed for only MAE 585 or 598 (Solar Thermal Engineering)
MAE	586	Advanced Heat Transfer	Basic concepts and governing equations. Analysis of laminar and turbulent heat transfer for internal and external flows. Natural and mixed convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	587	Radiation Heat Transfer	Advanced concepts and solution methodologies for radiation heat transfer, including exchange of thermal radiation between surfaces, radiation in absorbing, emitting, and scattering media and radiation combined with conduction and convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student

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MAE	588	Nanoscale Heat Transfer	Explores the fundamental micro and nanoscale origins of thermal transport. Uses energy transport formalism to explain the breakdown of macroscopic transport laws (e.g., Fourier's law) at the micro and nanoscale. Defines and explores the key carriers of heat: phonons, photons, electrons and molecules. Derives the energy states of these carriers and combines this knowledge with statistical thermodynamics to determine the population distribution of these carriers. Combining these distributions with scattering processes enables fundamental laws to be derived within the context of their microscopic/nanoscale underpinnings. Some of these phenomena include, Fourier's law, Ohm's law, thermopower, Wiedemann-Franz law, Dulong-Petit law, equation of radiative transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed only for MAE 588 or MAE 598 (Nanoscale Heat Transfer)
MAE	589	Heat Transfer	Basic concepts; physical and mathematical models for heat and mass transfer. Applications to conductive, convective, radiative, and combined mode heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MAE 494 topic (Heat and Mass Transfer) or 589
MAE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): graduate MAE major
MAE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisites: Mechanical or Aerospace Master's degree student
MAE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): graduate Engineering student
MAE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Aerospace Engineering or Mechanical Engineering or Robotics and Autonomous Systems (Mechanical and Aerospace Engineering) MS student
MAE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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MAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	501	Mthd Interdisciplinary Inquiry	Critical survey of current models of inquiry, tools, processes, and methods in different fields.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Interdisciplinary Studies Masters student
MAS	502	Perspectives in Interdisc Stud	Introduces interdisciplinarity through explorations of epistemological and rhetorical practices that bridge traditional disciplines.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	505	Theory Change, Culture & Mind	Introduces graduate-level interdisciplinary study of key thinkers, movements, theories, and paradigms in 20th-century thought.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	510	Science & Religion: Cosmolog	Examines science and religion, stressing modern scientific findings and philosophical and historical debates and dialogues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 430 or MAS 510
MAS	513	Sociology of Everyday Life	Examines institutional ethnography, a way of exploring the particular and generalized social relations that shape people's everyday experiences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	514	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the nineteenth and twentieth centuries. Course dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAS 514 or MAS 598 (Studies in Critical Theory) or MAS 598 (Continental Philosophy and Religion)
MAS	550	Issues in Death and Dying	From Plato to Maimonides to Heidegger to Kubler-Ross, scholars, clinicians, and spiritual writers have recognized that attitudes about death and dying contribute to understandings of human existence. Recalling the ancient Socratic, biblical, and other spiritual traditions of the cura animarum (care for and cure of the soul) and joining contemporary post/secular conversations relevant to integration of body-mind-spirit, this course introduces basic concepts and practices of care ethics and spirituality. Focuses on relations among existential (ontological), therapeutic (psychosomatic), and spiritual (religious) dimensions of care. Theoretically, the course is inter-faith in approach, holistic in scope, and specialized in content. Practically, students examine real-life issues in care ethics and spirituality from multiple perspectives.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-9		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	573	Art and Politics	Explores issues and relationships between the arts and politics through historical examples, significant artists and works, key thinkers, and theoretical approaches. Considers topics such as: the arts and ideology, art and the politics of representation, propaganda, censorship, state-supported art, human rights, revolution and war, cultural change, and political aesthetics. Emphasizes interdisciplinary arts and period study, including the arts and The Russian Revolution, the art in the Weimar Republic and Nazi Germany, and, generally, the arts, art and social movements (e.g., U.S. Civil Rights era, Eastern Europe's solidarity movement and Velvet Revolutions), as well as the arts and politics in selected contemporary contexts (e.g., China, the Middle East).	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	585	Capstone Course	Assists students in preparing their capstone project, which represents the culmination of their study for the MA in Interdisciplinary Studies.	N	RSC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-4		Pre-requisites: Interdisciplinary Studies Masters student
MAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student

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MAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Pre-requisites: Interdisciplinary Studies Masters student
MAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	110	Enhanced Freshman Mathematics	Individually paced, computer-mediated course designed to prepare students for college-level mathematics. Students work on various modules in an online adaptive learning technology platform created to help students progress through the course material based on individual needs in preparation for enrollment in the next level math course required by the student's major (pre-MAT 117 "Track 1" or pre-MAT 142 "Track 2"). Upon completion of this course, students should see improvement of basic math skills, an increase in the confidence in mathematical abilities, and advancement in ability to relate math to real-life applications. Credit for this course does not count towards university graduation requirements	N	LEL	N	ELG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-3		Prerequisite(s): Mathematics Placement Test below 32% for majors that require MAT 142 OR Mathematics Placement Test 32-39.9% for majors that require MAT 117 or higher (consult your major map)
MAT	117	College Algebra	Linear functions, quadratic functions, general polynomial functions, rational functions, systems of linear equations, logarithmic and exponential functions.	N	LEL	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade or ALEKS score of 0-60 or higher OR Visiting University Student
MAT	119	Finite Mathematics	Topics from linear algebra, linear programming, combinatorics, probability, and mathematics of finance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 170, 210, or 270 with C or better or ALEKS score of 61 or higher OR Visiting University Student
MAT	142	College Mathematics	Applies basic college-level mathematics to real-life problems. Topics include numerical reasoning, sets, counting techniques, probability, basic statistics and finance. Appropriate for students whose major does not require MAT 117 or 170.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade or ALEKS score of 0-60 or higher OR Visiting University Student
MAT	170	Precalculus	Intensive preparation for calculus. Topics include functions (including trigonometric), vectors and complex numbers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	171	Precalculus: STEM	Robust treatment of advanced algebraic skills and trigonometry that are vital in calculus. Algebra topics include functions, compositions, inverses, transformations, complex numbers, roots of polynomial functions, rational functions, exponential and logarithmic functions and their properties. Trigonometry is approached via the unit circle as well as the right triangle. Topics include the trigonometric functions, their graphs and identities, inverse trigonometry, the laws of sine and cosine, vectors and the dot product with an application toward work, and polar coordinates and roots of complex numbers (deMoivre's theorem).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 117 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
MAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-5		

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MAT	207	Algebra and Geometry in the HS	Provides a conceptually rigorous treatment of the central ideas of algebra and geometry in high school. Explores and develops familiar mathematical content from a very different perspective. Focuses squarely on creating meaning for concepts and on building coherence of meaning across concepts and various representations of them. As such, course activities and assessments (class/lab activities, homework assignments, and exams) reflect these expectations, focusing on both doing high school mathematics with meaning and on expressing and communicating that meaning accurately and coherently in verbal and written form. Prior to enrolling in this course, students should have experience with algebra/geometry to at least the high school level.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Corequisite(s): MTE 210 OR Visiting University Student
MAT	208	Discrete Math for Secondary Ed	Potential secondary teachers of mathematics should master the Math Standards proposed by the National Council of Teachers of Mathematics for college-intending students. Focuses on those aspects of these standards that apply to discrete mathematics with particular emphasis on: mathematical problem solving, mathematics as communication, mathematical reasoning, and discrete mathematics. Taking a broader view, introduces mathematics as a discipline that uses known methods to discover and verify new conclusions through the study of discrete mathematics.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MAT	210	Brief Calculus	Differential and integral calculus of elementary functions with applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 119, 170, or 171 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student
MAT	211	Math for Business Analysis	Topics in business analysis, including: Lagrange multipliers, linear programming, linear algebra, intermediate probability, random variables, discrete distributions, and continuous distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better OR Visiting University Student
MAT	242	Elementary Linear Algebra	Introduces matrices, systems of linear equations, determinants, vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better OR Visiting University Student
MAT	243	Discrete Math Structures	Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; minimum sophomore standing OR Visiting University Student
MAT	251	Calculus for Life Sciences	Differential and integral calculus of elementary functions. Introduces differential and difference equations. Emphasizes applications to the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student
MAT	265	Calculus for Engineers I	Limits and continuity, differential calculus of functions of one variable, introduction to integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	266	Calculus for Engineers II	Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	267	Calculus for Engineers III	Vector-valued functions of several variables, partial derivatives, multiple integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 267 or 272 OR Visiting University Student
MAT	270	Calculus w/Analytic Geometry I	Real numbers, limits and continuity, and differential and integral calculus of functions of 1 variable.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	271	Calculus w/Analytic Geomtry II	Methods of integration; applies calculus, elements of analytic geometry, improper integrals, sequences and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	272	Calc w/Analytic Geometry III	Vector-valued functions of several variables, multiple integration, and introduction to vector analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 267 or MAT 272 OR Visiting University Student

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MAT	274	Elem Differential Equations	Introduces ordinary differential equations, adapted to the needs of students in engineering and the sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 274 or 275
MAT	275	Modern Differential Equations	Introduces differential equations, theoretical and practical solution techniques. Applications. Problem solving using MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with a C or better; Credit is allowed for only MAT 274 or 275 OR Visiting University Student
MAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MAT	300	Mathematical Structures	Logic and set theory, induction, functions, order and equivalence relations, cardinality. Emphasizes writing proofs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
MAT	310	Introduction to Geometry	Congruence, area, parallelism, similarity and volume, and Euclidean and non-Euclidean geometry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	342	Linear Algebra	Linear equations, matrices, determinants, vector spaces, bases, linear transformations and similarity, inner product spaces, eigenvectors, orthonormal bases, diagonalization, and principal axes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student
MAT	343	Applied Linear Algebra	Solving linear systems, matrices, determinants, vector spaces, bases, linear transformations, eigenvectors, norms, inner products, decompositions, applications. Problem solving using MATLAB.4	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student
MAT	350	Tech/Apps of Applied Math	Mathematical techniques and applications representative of the range of applied mathematics used in operations research, biology, economics, finance, and sociology. In depth exploration of these techniques in detail by focusing on selected applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 274 or 275; Pre- or corequisite(s): MAT 342 or 343; Corequisite(s): STP 280 or 420
MAT	353	Mathematics and Cancer	Addresses some of the mathematical questions regarding the dynamics of cancer growth and treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 275 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 353 or MAT 394 (Mathematics and Cancer) OR Visiting University Student
MAT	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
MAT	370	Intermediate Calculus	Theory behind basic 1-variable calculus: continuity, derivative, Riemann integral, sequences, and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 300 with C or better; Credit is allowed for only MAT 370 or MAT 371 with C or better OR Visiting University Student
MAT	371	Advanced Calculus I	Real numbers, completeness, sequences/series, continuity, uniform theorems, derivative, Riemann integral, pointwise/uniform convergence, Taylor's theorem. Credit is allowed for only MAT 371 or 370 toward a mathematics degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 300 with C or better OR Visiting University Student
MAT	372	Advanced Calculus II	Open, closed, compact sets in R^n continuity, differentiation, partial differentiation, integration in R^n Inverse/implicit function theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better; Pre- or corequisite(s): MAT 342 or 343 with C or better; Credit is allowed for only MAT 372 or 460
MAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	410	Intro to General Topology	Point set topology, topological spaces, metric spaces, continuity, compactness, connectedness and product spaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	411	History and Philosophy of Math	Examines nature of mathematics from origins to present, revealed by its history and philosophy. Strong background in mathematics not required.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	HU & H	
MAT	412	Differential Geometry	Rigorous treatment to the concepts and methods of differential geometry via the classical theory of curves and surfaces in Euclidean space, the Gauss-Bonnet theorem, and additional topics as time and interest permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 with C or better; MAT 371 with C or better; Credit is allowed for only MAT 412 or MAT 494 (Introduction to Differential Geometry)

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MAT	415	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Pólya theory and combinatorial structures.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 415 or MAT 512 OR Visiting University Student
MAT	416	Graph Theory	Trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 416 or MAT 513
MAT	419	Intro to Linear Optimization	Simplex method, duality, and network flows. Applications to game theory, geometry, combinatorics, graph theory, and posets.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): ACO 101, ACO 102, CSE 100, CSE 110, or CSE 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better
MAT	420	Scientific Computing	Surveys and applies programming languages, libraries, and scientific visualization tools. Programming assignments emphasize software development skills. Completion of advanced calculus recommended prior to this course.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 205 with C or better; MAT 274 or 275 with C or better; MAT 342 or 343 with C or better OR Visiting University Student
MAT	421	Applied Computational Methods	Numerical methods for quadrature, differential equations, roots of nonlinear equations, interpolation, approximation, linear equations, floating-point arithmetic, and roundoff error.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 272 or 267 with C or better
MAT	423	Numerical Analysis I	Solution of systems of linear and nonlinear equations, optimization, eigenvalues, round-off error, and floating point arithmetic. Fluency in computer programming is required for enrollment in this course.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 342 or 343 with C or better OR Visiting University Student
MAT	425	Numerical Analysis II	Analysis of and algorithms for numerical interpolation, integration, and differentiation. Numerical solution of ordinary and partial differential equations, introductory level. Applications. Fluency in computer programming is required for success in this course.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 371 recommended
MAT	429	Optimization	A variety of optimization models and their applications to management, economics, engineering, and science. Topics include linear programming, integer programming, nonlinear programming, and stochastic programming. Stresses formulation and modeling as well as numerous applications and solving algorithms.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 343 with C or better; MAT 350 or 419 with C or better
MAT	440	Group Theory	Covers basic group theory. Students learn about the concept of a "group," related structures, their underlying theory and examples of how they arise in mathematics.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343 OR Visiting University Student
MAT	441	Ring Theory	Covers basic ring theory. Students learn about the concept of a "ring," related structures, their underlying theory, and examples of how they arise in mathematics.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343
MAT	442	Advanced Linear Algebra	Fundamentals of linear algebra, dual spaces, invariant subspaces, canonical forms, bilinear and quadratic forms, and multilinear algebra.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better OR Visiting University Student
MAT	443	Intro to Abstract Algebra	Introduces concepts of abstract algebra.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 443 or MAT 444
MAT	444	Intermediate Abstract Algebra	Basic theory of groups, rings, and fields, including an introduction to Galois theory. Appropriate as preparation for MAT 543.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 440, 441, or 442 with C or better
MAT	445	Theory of Numbers	Prime numbers, unique factorization theorem, congruences, Diophantine equations, primitive roots, and quadratic reciprocity theorem.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better
MAT	447	Cryptography I	Block ciphers, stream ciphers, congruence arithmetic, information theory, public key cryptosystems, key exchange, electronic signatures.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 100, 110, or 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better OR Visiting University Student
MAT	448	Cryptography II	Mathematical underpinnings of contemporary cryptosystems, electronic signatures, key exchange, primality testing and factorization algorithms.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 447. Credit is allowed for only MAT 448 or MAT 494. Cryptography II
MAT	450	Mathematical Models in Biology	Introduces mathematical models in biological systems. Applications range from the cellular level to systems level and may include applications from areas such as physiology, ecology, epidemiology, population biology, computational and systems biology.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 274 or 275 with C or better
MAT	451	Mathematical Modeling	Detailed study of one or more mathematical models that occur in the physical or biological sciences.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 242 or 342 or 343 with C or better OR Visiting University Student

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MAT	452	Intro Chaos/Nonlinear Dynamics	Properties of nonlinear dynamical systems; dependence on initial conditions; strange attractors; period doubling; bifurcations; symbolic dynamics; Smale-Birkhoff theorem; and applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 274 or 275 with C or better; MAT 274 or 275 with C or better; MAT 371 is recommended OR Visiting University Student
MAT	460	Vector Calculus	Vectors, curvilinear coordinates, Jacobians, implicit function theorem, line and surface integrals, Green's, Stokes', and divergence theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better; MAT 371 is recommended; Credit is allowed for only MAT 372 or 460
MAT	461	Applied Complex Analysis	Analytic functions, complex integration, Taylor and Laurent series, residue theorem, conformal mapping, and harmonic functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better
MAT	462	Applied Partial Diff Equations	Second-order partial differential equations, emphasizing Laplace, wave, and diffusion equations. Solutions by the methods of characteristics, separation of variables, and integral transforms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better OR Visiting University Student
MAT	472	Intermediate Real Analysis I	Introduces analysis in metric spaces with emphasis on the real line.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better OR Visiting University Student
MAT	473	Intermediate Real Analysis II	Analysis in R^n : implicit function theorem, introduction to manifolds, Lebesgue integration, change of variables formula, convergence theorems for integrals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 472 with C or better
MAT	475	Differential Equations	Linear and nonlinear ordinary differential equations, asymptotic behavior of solutions, stability, existence and uniqueness, limit sets, Poincar-Bendixson theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274 or 275 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	476	Partial Differential Equations	First-order quasilinear, method of characteristics, second-order linear (hyperbolic, parabolic, elliptic), Green's functions, integral representations, eigenfunction expansions, maximum principles, harmonic functions, and additional topics as time permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274, 275, or 475 with C or better; MAT 371 with C or better
MAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): minimum 45 hours
MAT	485	History of Mathematics	Topics from the history of the origin and development of mathematical ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
MAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	495	Undergraduate Research	Supervised research in mathematical sciences.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Prerequisite(s): minimum 45 hours
MAT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	501	Geomtry/Topolgy of Manifolds I	Brief review of general topology, cell complexes, topological manifolds, fundamental groups, covering spaces, homology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAT 501 or MAT 598 (Geometry and Topology of Manifolds)
MAT	502	Geomtry/Toplgy of Manifolds II	Differentiable manifolds, vector and tensor fields, differential forms, flows, Lie groups, homogeneous spaces, de Rham cohomology, Riemannian metrics and curvature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 501; Credit is allowed for only MAT 502 or MAT 598 (Geometry Topology of Manifolds II)
MAT	512	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Polya theory and combinatorial structures. Same topics as MAT 415; mastery at much higher level required. Students with MAT 415 (even as undergraduates) may not enroll.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student; Credit is allowed for only MAT 415 or 512

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MAT	513	Graph Theory	Rigorous introduction to graph theory. High-level mastery in topics such as trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MAT 416 or 513
MAT	514	Enumerative Combinatorics I	First semester of a systematic development of enumerative combinatorics, including elementary counting techniques, sieve methods, and partially ordered sets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	515	Enumerative Combinatorics II	Second semester of a systematic development of enumerative combinatorics, including lattices, exponential structures, symmetric functions, and selected special topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	516	Graph Theory I	First semester of a systematic development of graph theory, including matchings, connectivity, arboricity, planarity, coloring, network flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	517	Graph Theory II	Second semester of a systematic development of graph theory, including dense and sparse graphs, Ramsey theory, hamiltonicity, random graphs, minors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	541	"p"-Adic Numbers	Introduces "p"-Adic numbers and analysis. Topics include valuations, completions of number fields, extensions of the field of "p"-adic numbers and "p"-adic analysis. Students should have previously taken courses in analysis and algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	542	Elliptic Curves	Geometry and arithmetic of elliptic curves, points of finite order, the group of rational points, curves over finite fields, complex multiplication. Students should have previously taken a senior-level course in abstract algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	543	Abstract Algebra I	Groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	544	Abstract Algebra II	Continuation of groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 543
MAT	545	Abstract Algebra III	Covers modules, Galois theory, and preparation for advanced study in algebraic parts of mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	547	Algebraic Number Theory	Algebraic properties of number fields and their completions. Topics include rings of integers, ramification, finiteness of the class group, and Dirichlet's unit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	570	Real Analysis I	Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	571	Real Analysis II	Continuation of Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 570
MAT	572	Complex Analysis I	Analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	573	Complex Analysis II	Continuation of analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 572
MAT	578	Functional Analysis I	Locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	579	Functional Analysis II	Continuation of locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 578
MAT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	117S	College Algebra Stretch	For students who have an in-progress (Z) grade for MAT 117. The grade earned in MAT 117S replaces the Z grade for MAT 117. Course content is the same as MAT 117, which is intended to develop skills in linear functions, quadratic functions, general polynomial functions, rational functions, exponential functions and logarithmic functions. Also studies systems of linear equations. Emphasizes problem-solving techniques, specifically by means of discussing concepts in each of these topics.	N	LEL	N	NOG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0		Prerequisite(s): MAT 117 with grade of Z OR Visiting University Student
MBB	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 343 or MBB 343
MBB	347	MolecularGenetics:GenesProtein	Emphasizes molecular and cell biology and gene technology, both at the basic and applied research levels, in the growing areas of biotechnology and the molecular biosciences; focuses on molecular processes that allow genetic information to be expressed and regulated and by introducing applications to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 282 with C or better or BIO 181 and 182 with C or better; CHM 116 with C or better; Credit is allowed for only BIO 340 or MBB 347 OR Visiting University Student
MBB	350	Applied Genetics	Introduces molecular genetics with emphasis on application of genetics to solve biological questions and to engineer organisms for biotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 340 or MBB 247 or MBB 347 with C or better; Credit is allowed for only MBB 350 or PLB 350 OR Visiting University Student

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MBB	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
MBB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
MBB	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student
MBB	446	Molecular Biology/Genetics Lab	Molecular genetic techniques: plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student
MBB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Pre-requisites: Minimum 3.3 GPA; Molecular Biology student
MBB	490	Capstone: Issues Biotechnology	Integrates science and biotechnology industry issues dealing with intellectual property, regulatory issues, business practices, and commercialization. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MBB 343 with C or better
MBB	491	Capstone: Issues in Mol Biosci	Integrates molecular science and societal issues dealing with ethics, regulatory issues, and societal needs that pertain to molecular biosciences. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better
MBB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MBB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MBB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): minimum junior standing OR Visiting University Student
MBB	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MBB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): Molecular Biosciences and Biotechnology BS major; minimum 3.0 GPA
MBB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MCB	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	501	Seminar:Molecular/Cell Biology	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)

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MCB	540	Functional Genomics	Functional relevance of genomic sequences; DNA arrays, proteomics, analysis of genomic information for metabolic physiology of organisms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
MCB	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB or NEU 555
MCB	556	Adv Molecular/Cell Biol II	Continuation of MCB 555.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	701	Seminar:Molecular/Cellular Bio	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCE	447	Diversity in Multicultural Set	Diversity and the changing role of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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MCO	101	Everyday Grammar	Helps students master the elements of English grammar.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): non-Journalism and Mass Communication majors or non-Sports Journalism majors; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student
MCO	102	Fundamentals of Coding	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
MCO	120	Media and Society	Covers the role of newspapers, magazines, radio, television and motion pictures in American society.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): non-Journalism and Mass Communication major or non-Sports Journalism major; Credit is allowed for only JMC 110 or MCO 110 or MCO 120 OR Visiting University Student
MCO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	240	Media Issues Amer Pop Culture	Examines the production and consumption of popular culture as disseminated by the mass media with emphasis on the societal implications.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		
MCO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	302	Media Research Methods	Surveys research methods used in the social sciences, with a focus on mass communication.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	307	The Digital Audience	Introduces students to the foundations of digital strategy, including audience research, social media campaigns, SEO, analytics, audience targeting, goal setting and more. Through hands-on exercises with real brands, students learn how audiences differ across industries and platforms, approaches for engaging users, and how organizations use audience data to create growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	335	Social Media	Surveys the social media landscape: what are social media platforms, who uses them, and how are they transforming the way we inhabit the world? Explores and critically analyzes the social, cultural, legal, ethical, economic and technological dimensions of social media environments from Facebook to Foursquare, Twitter to Flickr and beyond.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Students may not earn credit for both MCO 335 and MCO 435 OR Visiting University Student
MCO	366	Media Ethics and Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism and mass communication ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494 (Media Ethics and Diversity) OR Visiting University Student
MCO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	403	Media Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
MCO	418	History of Mass Communication	American journalism from its English and colonial origins to the present day. Development and influence of newspapers, magazines, radio, television, and news gathering agencies.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB & H	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	420	Strategic Sports Communication	Covers the wide-ranging field of strategic sports communication. Prepares students for an entry-level position in the strategic sports communication field.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism or Business (Sports and Media Studies) major; minimum 45 hours OR Visiting University Student

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MCO	425	Digital Media Literacy I	Helps students begin to navigate the 21st-century media, starting by becoming active users of media, not just passive consumers. The Internet-fueled democratization of media creation has enabled anyone to be a publisher, and given audiences' almost infinite choices, with both great and questionable effects. In a world of information abundance, it can be difficult to discern fact from opinion and truth from fiction. We need to know how to wade through this barrage of information with a critical eye, to be better informed, and ultimately become creators of media ourselves.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 425 or MCO 494 (Digital Media Literacy) OR Visiting University Student
MCO	426	Digital Media Literacy II	Discusses digital media consumption to some degree, but focuses more on media creation and the many issues we need to understand for best practices. Students learn the importance of understanding the tools and techniques of media creation, and how media are used to persuade, the ethical and legal issues in creating media, policy issues that can (or will) affect media creation, and an assortment of media-creation techniques.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 426 or MCO 494 (Digital Media Literacy II) OR Visiting University Student
MCO	427	Misinformation and Society	Develops strategies and tactics to recognize misinformation, and inoculates students--and helps them join the battle--against it. Misinformation in our context is false information purposefully created to deceive and cause harm. It runs rampant in today's digital information ecosystem, and is becoming more and more sophisticated and difficult to spot. Bad actors are using powerful tools and techniques to infect our information supply, sowing confusion and discord. While there are laudable efforts to staunch the flow of misinformation, media users need help in deciding what information to trust. Examines the evolution of misinformation and the range of content types that fall under its umbrella. Explores tools, techniques and tactics that individuals can employ to identify misinformation, and gives them a head start on making informed decisions on what, and whom, they can trust.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA
MCO	428	DigMed & Freedom Expr 21st Cnt	Covers the extraordinary nature of media in this century. Examines how the media and communications tools of the past 100+ years-- telephones, print publications and broadcasting outlets--gave way to the Internet, a radically centralized network of networks that is rapidly re-centralizing. Also explores how the ability to exercise freedom of expression became radically easier in the early days of the Internet, but how that freedom, among others, may be in jeopardy--and, if so, what can be done about that, as individuals and members of communities.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 428 or MCO 494 (Media and Free Expression in the 21st Century) or MCO 598 (Media and Free Expression in the 21st Century)
MCO	430	International Mass Communicatn	Comparative study of communication and media systems. Information gathering and dissemination under different political and cultural systems.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	G	Prerequisite(s): minimum cumulative 2.00 GPA
MCO	431	Media Entrepreneurship	Familiarizes students with media entrepreneurship and innovation in a quickly changing digital media environment. Students study the principles of entrepreneurship and innovation, assess their own tolerance for risk, evaluate opportunity and market conditions, and learn about various revenue models for entrepreneurial enterprises.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 431 or MCO 494 (Media Entrepreneurship) or MCO 556 OR Visiting University Student
MCO	433	Soc Media Camp,Engmt & Rsrch	Learn how to attract, engage and grow audiences on social media platforms through both organic and paid social media campaigns, and research social media behavior and performance. Includes evaluating organizations' existing social media audiences, identifying opportunities for audience growth, creating content and campaigns for specific social platforms, measuring the impact of social media content, and developing an organizational strategy for managing social media across an enterprise.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Comm undergraduate major or minor or Interdisciplinary Studies BIS major; MCO 307 w/ C or better; minimum 2.00 GPA; Credit is allowed for only MCO 433, MCO 436, MCO 437 or MCO 563 OR Visiting University Student
MCO	434	Search Engine Rsrch & Strategy	Learn how to research, attract and grow audiences through the strategic use of search engine optimization and search engine marketing. Includes search trend research, keyword research, user behavior, SEO (search engine optimization), tagging and coding for on-page SEO, SEM (search engine marketing), competitive analysis, domain authority and pay-per-click advertising.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 434 or MCO 436 or MCO 437 or MCO 562 OR Visiting University Student

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MCO	436	Audience Research and Behavior	Prepares students to undertake or manage research on customers, employees, readers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data, so the course introduces new techniques and tools for developing audience insights, as well as traditional qualitative and quantitative research methods.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 433 or MCO 434 or MCO 436 or MCO 564 OR Visiting University Student
MCO	437	Aud Acquisition & Engagement	Students learn how to attract and grow audiences on established and emerging digital platforms. Students discover tactics and strategies for targeting, obtaining and engaging audiences by leveraging social media, search marketing and SEO, digital content, ecommerce, digital advertising and others.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit allowed for only MCO 433 or MCO 434 or MCO 437 or MCO 562 or MCO 563 OR Visiting University Student
MCO	438	Digital Audience Analysis	Students discover how to access, manipulate and translate audience data. Students learn how to mine data from Web sites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. By working with real audience data, students receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 438 or MCO 565 OR Visiting University Student
MCO	439	Digital Audience Growth	Capstone challenges students to synthesize their digital audience knowledge and skills acquired in the previous courses through an applied project. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s) with C or better: Digital Audience BS major or minor; MCO 307; (MCO 433 and 434) or (MCO 436 and 437); MCO 438; minimum 2.00 GPA; Credit is allowed for only MCO 439 or MCO 566 OR Visiting University Student
MCO	450	Visual Communication	Theory and tradition of communication through the visual media with emphasis on the continuity of traditions common to modern visual media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	HU	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	456	Political Communication	Explores the intersection of media and politics and examines how the political system works and how journalists cover politics, political campaigns and elections. Students gain knowledge of opinion polling, debates, campaign finance, the party system, political communication, issues coverage, fact checking, crowd sourcing and more.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student
MCO	465	Sports and Media	Designed for aspiring journalists and media users, explores why great sports journalism is essential to our society. Establishes the goals, dreams, and expectations for sports journalism and introduces ethical philosophy and popular ethical models and decision-making tools. Students then apply these tools to sports journalism.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	470	ExploringBusinessOfJournalism	Exposes students to broad media management problems. Focuses on how essential the bottom-line and quality journalism are to the entire journalistic and mass communication enterprise; helps students think about how to balance those two concerns.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journalism) OR Visiting University Student
MCO	473	Sex, Love, Romance-Mass Media	The role of the mass media in constructing and/or reinforcing unrealistic mythic and stereotypic images of sex, love, and romance.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum cumulative 2.00 GPA
MCO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6		Prerequisite(s): Barrett Honors student
MCO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MCO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		

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MCO	502	Journalism Skills	Basic journalism skills for print, digital and broadcast. Significant hands-on practice writing and reporting stories on deadline as well as an immersion in the principles and practices of good journalism.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	8		Prerequisite(s): Cronkite School masters or PhD student
MCO	503	Media Law	Examines the philosophical and legal aspects of press freedom with an emphasis on the First Amendment from 1791 to present.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School master's student; Credit is allowed for only JMC 402 or MCO 403 or MCO 503
MCO	504	Journalism Skills Lab	Leadership is essential for the future of journalism; it is also essential for your career success. Through readings, personal reflection, discussion, guest speakers and hands-on class activities, explores what makes a good leader, how to cultivate good leadership as individuals and a cohort, and how to identify and seize leadership opportunities at the Cronkite School and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Master of Mass Communication student or Sports Journalism MA student; Credit is allowed for only MCO 504 or MCO 598 (Journalism Skills Lab)
MCO	505	Depth Reporting	Covers in-depth and investigative reporting and writing techniques. Students produce long-form, deeply sourced articles and produce multimedia with the goal of publication.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	510	Data Journalism	Students use data to tell stories, employing computer spreadsheets, database software, mapping programs and statistical techniques and learn how these tools can be used across a wide variety of beats and stories. Students negotiate with government officials for public records and use the internet and other online sources to find information and sources for stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	512	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)
MCO	515	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content; and the requisite storytelling skills to produce works of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 460 or MCO 515
MCO	517	Public Relations Campaigns	Enables students to synthesize and apply the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. The student develops an in-depth understanding of a client's needs; conducts primary and secondary research; works with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; designs and develops media products for client; formally presents the proposal to the client and the class and analyzes, discusses then responds to public relations case studies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA or Master of Mass Communication student; Credit is allowed for only MCO 517 or MCO 598 (Public Relations Campaigns)
MCO	519	Strat Comm Leadership & Ethic	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite master's student; Credit is allowed for only JMC 419 or MCO 519
MCO	521	News Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience. Students complete assignments based on editorial judgment, technical skills and industry awareness and develop strategies for total newsroom management. In the process, students build confidence in producing news content and newscasts under deadline pressure and are prepared for a variety of producer-related roles in professional newsroom environments.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; Credit is allowed for only MCO 521 or MCO 598 (News Producing)

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MCO	525	21st-Century Media Org&Entpre	Focuses on the future of journalism, the future of journalism business organizations and entrepreneurship, new media experiences, online solutions to popular media problems, financial realities of the media, and media innovation.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	526	Advanced Issues Sports & Media	Through critical analyses of major contemporary issues in sports and media, provides tools and information needed to more fully engage in and become fluent with the main conversations about the business, technology and the future of sports journalism.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA major
MCO	529	Ethics Diversity Sports Journ	Explores the connection among sports media, journalism and society in an ethical and issue-oriented context. Students gain an understanding of the issues and ethics of the sports journalism profession while becoming better and more informed consumers of sports media. At the end of the course students have a better understanding of the importance of sports in our society and how that is reflected in coverage by local and national media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA major; MCO 502
MCO	530	Hist,Phil&Ethics of Journalism	Explores contemporary news media issues in a seminar setting. Critically analyzes historical and contemporary dilemmas in journalism ethics using a case study approach.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	531	Advanced Broadcast Reporting	Teaches news and information practices of networks and local television stations. Students report, write and edit broadcast packages with an emphasis on video.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	533	Adv Span-Lang Brdcst Rprt	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Opportunity to develop and master advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish needed to obtain an entry-level position in a small/medium market local television newsroom.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only MCO 533 or MCO 598 (Advanced Bilingual Broadcast Reporting)
MCO	534	AdvancedSpanish-LangReporting	Students get experience reporting and writing stories on topics related to Latinos in the U.S. Requires ability to write and report in Spanish, although students do not have to be proficient.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 434 or JMC 494 (Advanced Bilingual Reporting) or MCO 534 or MCO 598 (Advanced Bilingual Reporting)
MCO	535	Latino and Transnational Issue	Focuses on some of the most pressing and controversial issues of the day that are taking place in the Southwest borderlands. Successful students move on to the Borderlands Initiative depth reporting project in the spring semester that includes an international reporting experience.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	536	Public Relations Research	Teaches the importance and practice of research in a public relations context. Students conduct research using qualitative and quantitative methods and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student; Credit is allowed for only MCO 536 or MCO 598 (PR Research)
MCO	540	Sports Reporting	Hands-on experience reporting, writing, script writing and video producing sports stories. Students report, write and produce professional-level, clear, well-reported, accurate stories and video packages about athletes and sports stories newsworthy in the Valley and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA student; MCO 502
MCO	541	Narrative Writing & Reporting	Students learn the elements of narrative journalism—structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing—and apply them to a long-form story they report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School masters student; MCO 502 with C or better; Credit is allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing)
MCO	544	Accountability in Journalism	Seminar about accountability journalism in the digital age: its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas about water quality and supply in Arizona.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School masters or PhD student; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism)
MCO	545	Techniques Investigative Rpt	Student teams work under the direction of a veteran investigative journalist, learning how to do research and reporting on projects to expose wrongdoing, focusing on public records, databases, in-depth interviews and how to conceptualize, organize and tell these stories on multiple platforms.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): MCO 502 with C or better; Credit is allowed for only MCO 502 or MCO 545

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MCO	546	News 21 Seminar	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; MCO 502 w/ C or better; Credit is allowed for only JMC 446 or JMC 494 (News 21) or MCO 546 or MCO 598 (News 21 Seminar)
MCO	548	Non-Narr Video Storytelling	Teach students how to create video pieces that effectively communicate a story, information or concept to your audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Comm or Sports Journalism MA stdnt; MCO 502 w/ C or better; Credit is allowed for only JMC 448 or JMC 494 (DSLr Vid Storytelling or Non-Narr Vid Storytelling) or MCO 548 or MCO 598 (DSLr Vid Storytelling or Non-Narr Vid Storytelling)
MCO	550	Issues in Coverage of Bus&Econ	Teaches the basics of business and economics reporting, one of the fastest-growing areas of journalism. Students learn what skills are needed to cover business and economic stories as well as how private companies operate and the factors that drive the economy. They also learn about opportunities in the field and hear from leaders in business journalism.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication master's or PhD student
MCO	551	Better Business Reporting	Provides training and practice in reporting and writing stories related to business and the economy. Students learn tools and techniques to enhance their coverage of various kinds of business stories, from profiles to financial reports. They learn best practices for pitching stories, cultivating sources, conducting effective interviews, structuring stories, using appropriate narrative elements and translating complex information for a general audience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better
MCO	552	Data in Business Journalism	Students learn how to find powerful business and economic data from U.S. sources such as the Census Bureau, the Bureau of Labor Statistics, the Securities and Exchange Commission and the Federal Reserve. Examines international data sources of the United Nations, the World Bank, the European Union and the statistics offices of various countries. Covers basic mathematical and statistical formulas for working with business data, how to find stories in data using tools such as Microsoft Excel and Google Fusion Tables and how to create basic data visualizations that are useful for understanding business and economic trends.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better
MCO	553	Reporting on Business and Econ	Trains students in the basics of reporting about business and the economy. They learn to tell the stories behind companies, people and money, while improving their competency in using numbers in stories. Students have the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 OR Business Journalism MS student
MCO	555	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; Credit is allowed for only JMC 455 or JMC 494 (Digital Media Entrepreneurship) or MCO 555 or MCO 598 (Digital Media Entrepreneurship)
MCO	556	Media Entrepreneurship	Familiarizes students with media entrepreneurship and innovation in a quickly changing digital media environment. Students study the principles of entrepreneurship and innovation, assess their own tolerance for risk, evaluate opportunity and market conditions, and learn about various revenue models for entrepreneurial enterprises.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student; Credit is allowed for only MCO 431 or MCO 494 (Media Entrepreneurship) or MCO 556

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MCO	557	Advanced Radio Reporting	Students report and produce long-form radio stories in commercial and public radio formats. They develop planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news and business as well as hard news and feature reporting.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting)
MCO	560	Arizona Media Law	Case study approach to first amendment issues, media access, libel, confidentiality, and invasion of privacy as applied to media organizations in Arizona.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	561	Defining the Digital Audience	Who are the people who make up digital audiences? How do digital audiences behave? And why is it important to research, identify and monitor digital audiences and their engagement with your organization? Covers the very essence of the digital audience, exploring how community, consumer, social psychology and theory converge on digital platforms and social networks. Through case-study analyses, teaches how audiences differ across industries and platforms, the elements that engage or dissuade users, and how organizations use audience data to manipulate growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	562	Srch Engine Strat Dig Aud Acq	How to attract and grow audiences through strategic use of search engine marketing. Includes user search behavior, SEO (search engine optimization), tagging and coding for on-page SEO, SEM (search engine marketing), keyword research, competitive analysis, domain authority and pay-per-click advertising.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Dig Aud Strat MS; Dig Aud cert, Investigative Journ MA, Journ & Mass Comm PhD, Global Mgt (Dig Aud Strat) MGM, Mass Comm MMC or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 434 or MCO 437 or MCO 562
MCO	563	Social Media Campaign & Engage	How to attract, engage and grow audiences on social media platforms through both organic and paid social media campaigns. Includes evaluating an organization's existing social media audience, identifying opportunities for audience growth across social media platforms, designing and generating content for specific platforms, measuring the impact of social media content, and developing an organizational strategy for managing social media across an enterprise.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student or Global Management (Digital Audience Strategy) MGM student; MCO 561 with B or better; Credit is allowed for only MCO 433 or MCO 437 or MCO 563
MCO	564	Digital Aud Research&Behavior	Provides skills to undertake research on digital audiences, customers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data. Digital audience research as a subset of social research. Overviews both traditional and newer research methods for developing audience insights.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student or Global Management (Digital Audience Strategy) MGM student; MCO 561 with B or better; Credit is allowed for only MCO 436 or MCO 564
MCO	565	Digital Audience Analytics	Provides skills to access, manipulate and translate audience data. How to mine data from websites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. Works with real audience data to receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Digtl Aud Strategy MS; Digtl Aud cert, Investigative Journ MA, Journ&Mass Comm PhD, Mstr Global Mgt (Digtl Aud Strategy), Mstr Mass Comm or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 438 or MCO 565
MCO	566	Digital Audience Management	Challenges students to synthesize their digital audience knowledge and skills acquired in previous courses through a culminating experience. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Digital Audience Strategy MS student; MCO 561 with B or better; MCO 562 with C or better; MCO 563 with C or better; MCO 564 with C or better; MCO 565 with C or better; minimum 3.00 GPA; Credit is allowed for only MCO 439 or MCO 566

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MCO	570	Master Mass Comm Capstone	In this culminating program, students get an immersive experience in reporting and producing news across platforms. Students may choose the Cronkite News Phoenix Bureau, with opportunities to report on public affairs, borderland and Latino issues or business and the economy or work as digital producers. Students also may choose Cronkite News -- Broadcast, where students report and produce a half-hour weeknight newscast. Other options are sports bureaus in LA or Phoenix, the Cronkite News Washington Bureau, the New Media Innovation and Entrepreneurship Lab, the Public Relations Lab, the Public Insight Network and the Carnegie-Knight News21 investigative multimedia reporting program. Students work four full days a week under the supervision of a faculty member in a newsroom setting.	Y	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Investigative Journalism MA, Sports Journalism MA, Master of Mass Communication, Business Journalism MS, Digital Audience Strategy MS, Journalism and Mass Communication PhD, or Digital Audiences certificate student
MCO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Cronkite School of Journalism and Mass Communication graduate student
MCO	710	Research Methodology Mass Comm	Identifies research problems in mass communication and provides an overview of questionnaire construction as well as attention to survey, historical, content analysis, experimental and legal research methods.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism Mass Communication PHD students
MCO	711	Critical,Hist,Legal Research	Critical, legal and historical methods necessary to conduct qualitative mass communication research.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PhD student
MCO	712	Freedom of Expression Theory	Examines philosophical and legal aspects of press freedom; emphasizes First Amendment theory evolution from 1791 to present.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PHD student
MCO	720	Mass Communication Theory	Analyzes various theoretic models of mass communication with emphasis on the applications of these theories to professional communication.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PHD student
MCO	722	Philosophy of Mass Comm	Mass media as social institutions, particularly interaction with government and public; emphasizes criticism and normative statements. Seminar. Prerequisite: Journalism and Mass Communication PhD student.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PhD student
MCO	755	Research Apprenticeship	Students and faculty work on a research project with the expected outcome of a scholarly publication.	N	RSC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Pre-requisite: Journalism and Mass Communication PHD student
MCO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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MCO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MDC	211	Intro to Digital Sound	Examines how technology is used as listeners, creators, critics, remixers, and a wide variety of other roles to participate in and gain a deeper understanding of music and its role in our lives.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for MDC 211 or MUE 294 Open Minds, Digital Ears
MDC	311	Comp Perf Hybrid Ens	Provides opportunities to perform music in a variety of digital and hybrid contexts using both physical and digital instruments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MDC 311 or MUE 394 (Performing in Digital and Hybrid Music Groups)
MDC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MDC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MDL	410	Laboratory Leadership	Clinical lab leadership and management. Applies the principles of personnel management and supervision, allocation of resources, and staff communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite: Admission to Medical Laboratory Science program
MDL	420	Advanced Clinical Urinalysis	Theory and applications of principles in urinalysis with emphasis on the etiology, pathophysiology, and clinical manifestations of renal and other metabolic defects as reflected by the analysis of urine and other body fluids.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	2		Pre-requisites: BIO 182; Admission to Medical Laboratory Science program
MDL	421	Urinalysis Body Fluid Adv Prac	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of urine and body fluids, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 420 with C or better
MDL	430	Advanced Hematology	Theory and application of principles in hematology, with emphasis on techniques to evaluate blood dyscrasias and analyze body fluids. Etiology, pathophysiology, clinical manifestations, and treatment of blood dyscrasias/hemostatic defects.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182; Admission to Medical Laboratory Science program
MDL	431	Hematology Adv Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of blood samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		
MDL	440	Advanced Immunohematology	Theoretical and practical application of clinical immunology and immunohematology. Emphasizes serological techniques that aid disease diagnosis and blood donor selection.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182; MIC 205; Admission to Medical Laboratory Science program
MDL	441	Immunohematology Immuno Pract	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 440 with C or better

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MDL	450	Advanced Clinical Microbiology	Theoretical and practical application of clinical microbiology. Emphasizes identification of pathogenic organisms, molecular techniques, mycology, virology, and parasitology.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	451	Clinical Micro Practicum	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 450 with C or better
MDL	460	Advanced Clinical Chemistry	Theoretical and practical applications of clinical chemistry with particular emphasis on correlation of test results to disease status, statistical analysis, pre-analytical testing, critical values, calibration, and trending and tracking of quality control results.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	461	Clinical Chem Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis routinely used clinical chemistry testing.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 460 with C or better
MED	100	Intro to Medical Studies	Presents basic concepts related to sciences, social sciences, humanities, statistics and other topics related to medical and health studies. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		
MED	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	300	Hist Contemp Issues in Health	History of medicine in the modern world and its relationship to contemporary issues in medicine with emphasis on the broader context of ways in which technology, personalized medicine, genomics, ethical issues and shared decision making between patients and providers have evolved.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours OR Visiting University Student
MED	320	Appl Medical/HealthCare Ethics	Integrates the theory and practice of ethics within health-related disciplines and the application of bioethics by health science professionals, including health disparities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	HU	Prerequisite(s): minimum 30 hours OR Visiting University Student
MED	325	Elem Hospice & Palliative Care	Introduces hospice and palliative care through direct experience communicating and working with persons on hospice and the nurses, physicians, social workers and chaplains who provide care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours
MED	375	Alzheimer's & Other Dementias	Covers Alzheimer's disease and related dementias through discussions with health care professionals and direct experience working with persons with Alzheimer's disease and their caregivers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only MED 375 or MED 394 (Intro Dementia & Alzheimer's Disease) OR Visiting University Student
MED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	417	Impact of Violence on Health	Approaches violence from a public health perspective, using the Centers for Disease Control, National Center for Injury Prevention and Control, as a benchmark. Applies an interprofessional approach to violence, to include medicine, nursing, law, law enforcement, social work, psychology, economics and education, among others. Discusses principles of epidemiology, underlying etiologies and sequelae and evidence-based strategies for prevention throughout the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
MED	445	Prev & Mgmt of Chronic Disease	The United States spends more on health care than any other developed country in the world, yet our health care outcomes are not superior. We face an epidemic of chronic diseases which are the leading causes of mortality and disability in the U.S., despite being highly preventable. Examines chronic disease in the U.S. and provides an overview of prevention and management with a focus on population health and social determinants of health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
MED	450	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
MED	475	Palliat Care: Managing Illness	Includes reading, discussion and study on palliative care including national trends, international models, ethics, mental health issues, business and workforce issues, boundaries between patients and caregivers, the intersection between humanities and palliative care, and the future of the field. Honors contracts are available.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only MED 475 or MED 494 (Advances in Palliative Care) or MED 494 (Palliative Care Managing Complex Serious Illness) OR Visiting University Student
MED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 3.00 GPA

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MED	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
MED	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
MED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
MEE	322	Structural Mechanics	Three-dimensional stress and strain analysis, generalized Hooke's Law, failure theories for ductile and brittle materials, combined loading, stress concentrations, energy methods, mechanical vibrations and structural dynamics, fatigue.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE major; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit is allowed for only AEE 325 or MEE 322 OR Visiting University Student
MEE	323	Computer-Aided Engineering II	Introduces finite-element analysis, pre- and postprocessing, solving problems with FEA.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2		Prerequisite(s) with C or better: Aerospace Engineering BSE major; AEE 325 (or MAE 325 or 394 - Aerospace Structures and Materials); MAE 214 or Mechanical Engineering BSE major; MAE 214; MEE 322 (or MAE 322) OR Visiting University Student
MEE	324	Structural Mechanics Lab	Lab companion where students perform supervised experiments to analyze stress and strain for materials loaded in bending, torsion, combined and torsion, tensile tests of materials until failure, stress concentrations, and structural dynamics. Required for mechanical engineering	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Pre- or corequisite(s): MEE 322 with C or better if completed OR Visiting University Student
MEE	340	Heat Transfer	Conduction, convection, radiation and phase change heat transfer processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering BSE major; MAE 241 with C or better; MAE 242 with C or better; MAE 384 with C or better OR Visiting University Student
MEE	342	Principles Mechanical Design	The design process; conceptual and embodiment design of mechanical elements; form synthesis; material selection, failure modes, manufacturability tolerances, common mechanisms and machine elements.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE major; MAE 202 w/ C or better; MEE 322 w/ C or better; MSE 250 w/ C or better; Pre- or corequisite(s): MEE 323 w/ C or better if completed; MEE 340 w/ C or better if completed OR Visiting University Student
MEE	351	Manufacturing Processes	Production technique and equipment. Casting and molding, forming, machining, joining and assembly, computer-integrated manufacturing, rapid prototyping, and electronics manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MSE 250 with C or better OR Visiting University Student
MEE	434	Internal Combustion Engines	Performance characteristics, combustion, carburetion and fuel-injection, and the cooling and control of internal combustion engines. Computer modeling.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 or MEE 482 with C or better; Credit is allowed for only MEE 434 or MAE 598 (Internal Combustion Engines) OR Visiting University Student
MEE	440	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; MEE 340 with C or better; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)

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MEE	441	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; AEE 360 or MEE 340 with C or better; MAE 301 with C or better; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441 OR Visiting University Student
MEE	445	Energy Systems Design I	Applies mechanical engineering principles and techniques to modeling, analysis and synthesis of energy systems and components. Design and optimization. Capstone design project. First part of an energy systems design course focusing on the design of compact heat exchangers and fluid flow systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s) with C or better: Mech Engr (Energy & Envir) major; MAE 301; MAE 400; MEE 340; MEE 342; Pre- or corequisite(s): MEE 482 w/ C or better if completed; Credit for only MEE 445 or MEE 494 (Energy Syst Dsgn I) OR Visiting University Student
MEE	446	Energy Systems Design II	Applies mechanical engineering principles and techniques to modeling, analysis, and synthesis of energy systems and components. Design optimization. Design project.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2		Prerequisite(s): Mechanical Engineering (Energy and Environment) BSE major; MAE 400 with C or better; MEE 445 with C or better; MEE 482 with C or better; Credit allowed for only MEE 446 or MEE 494 (Energy Systems Design II) OR Visiting University Student
MEE	472	Intermediate Fluid Mechanics	Second course covering fundamental concepts relating to engineering fluids. Flow meters, airfoil and wing aerodynamics; pipe flow; normal and oblique shock waves. Nozzles. Open Channel Flow. Turbomachinery flows including performance curves and maps, scaling and affinity laws. Elective for Aerospace Engineering and Mechanical Engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; senior standing; MAE 242 with C or better; MAE 384 with C or better
MEE	482	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics, property relationships, power and refrigeration cycles, and reactive systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 240 or 241 with C or better; Credit is allowed for only MAE 382 or MAE 570 or MAE 598 (Thermodynamics) or MEE 482 OR Visiting University Student
MEE	488	Mech Engineering Design I	Conceptual and embodiment design; modeling; rapid prototyping. Team project. MEE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Mech Engr major; MAE 301; MAE 318; MAE 384; MEE 323; MEE 340; MEE 342; Pre- or corequisite(s): MAE 400 with C or better if completed OR Visiting University Student
MEE	489	Mech Engineering Design II	Detail design; fabrication and testing. Team project. MAE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 488 with C or better OR Visiting University Student
MEE	491	Experimental Mechanical Engr	Experimental and analytical studies of phenomena and performance of fluid flow, heat transfer, thermodynamics, refrigeration, and mechanical power systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Mechanical or Aerospace Engr major; ENG 101, 105, or 107 w/ C or better; MAE 301 w/ C or better; MAE 318 w/ C or better; MEE 340 w/ C or better; Pre- or corequisite(s): MEE 342 w/ C or better if completed OR Visiting University Student
MEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MET	212	Appl Engr Mechanics: Dynamics	Masses; motion kinematics; dynamics of machinery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 211 (or CON 221 or MAE 212); MAT 266 (or MAT 271)
MET	213	Applied Mechanics of Materials	Stress, strain, stress-strain relations. Axial, shear, bending, torsional and combined loads and deflections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 211 or CEE 210, or MAE 212
MET	214	Appl Mechanics/Materials Lab	Measurements of loads and deformations relating stress and strain in axial, shear, bending, torsional, and combined loading configurations.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: MET 213, MAE 213, MSE 211, CON 223, CEE 213 OR be co-enrolled in MET 213

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MET	230	Intro to Engineering Materials	Introduces materials and their properties, emphasizing basic concepts and structures and how these properties relate to manufacturing and design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
MET	300	Applied Material Science	Principles of materials science emphasizing concepts relevant to design, manufacturing, and use. Covers metals, polymers, ceramics, and composites.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR MSE 250 OR Applied Science (Manufacturing Technology & Management) major; MET 230
MET	309	Nondestructive Test/Qual Assur	Part and material inspection using metrology and nondestructive inspection tools and techniques. Theory and application with use of pertinent standards.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	321	Intro to Automotive Engr	Engineering principles and the design of ground vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 212. Pre- or corequisite(s): MET 213, 340
MET	331	Machine Design I	Applies mechanics to design of machine elements and structures. Stress analysis, failure modes, tolerances, cylindrical fits, and shaft design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 213 (or CON 223 or MAE 213)
MET	344	CASTING and Forming Processes	Analyzes various forming processes to determine load requirements necessary for a particular metal-forming operation. Information used to select equipment and design tooling. Metal casting processes and design of castings. Introduces powder metallurgy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	345	Advanced Manufacturing Process	Material removal processes emphasizing advanced turning, milling, and machinability studies using cutting tools. CNC programming for machining and turning centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	351	Introduction to Automation	Introduces automation. Topics include assembly techniques, fixed and flexible automation systems, robots, material-handling systems, sensors, and controls.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 210
MET	396	Professional Orientation	Topics related to a successful career in engineering technology industry. Includes safety, life-long learning, ethics, and career planning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisite: Junior or Senior standing
MET	401	Quality Assurance	Statistical quality control methods, design of experiments, sampling, gauge requirements and specifications, use of quality assurance tools.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: STP 420 (or APM 301); Credit is allowed for only MET 401 or 501
MET	409	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Junior or Senior standing; Credit is allowed for only MET 409 or 509
MET	410	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 341; Credit is allowed for only MET 410 or 510
MET	415	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 341; STP 420; Credit is allowed for only MET 415 or 515
MET	416	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Pre-requisite: MET 341; Credit is allowed for only MET 416 or 516
MET	418	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300 or MSE 250. Credit is allowed for only MET 418 or 518
MET	421	Vehicle Powertrains	Internal combustion engine design, performance and operation, and power transmission systems within vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321
MET	423	Veh Chassis & Running Gear Des	Design and manufacture of chassis, structures, steering and braking systems and components, wheels and tires, suspension systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321; MET 331
MET	424	Vehicle Electrical Systems	Vehicle electrical power and signal systems, computer control and analog control systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; MET 321; MET 421
MET	426	Vehicle Thermal Design	Heat management in vehicle systems, including thermal design of engine and transmission cooling systems, cabin heating, and air conditioning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 421; Pre/Co-requisite: MET 434
MET	427	Vehicle Sys Integratn & Testng	Systems engineering principles. Design of the interfaces between vehicle subsystems. Testing of integrated systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 423; MET 424
MET	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
MET	434	Engineering Thermo-Fluids III	Transient conduction, convection and radiation heat transfer, heat exchangers, thermo-fluid systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 340
MET	438	Machine Design II	Applies mechanics to the design of machine elements and structures. Emphasizes basics of gears, springs, brakes, clutches, and bearings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 331 OR Fulton Schools of Engineering graduate student

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MET	440	Finite Element Analysis	Analyzes machine elements, frames, and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 331
MET	442	Specialized Production Process	Nontraditional manufacturing processes, emphasizing EDM, ECM, ECG, CM, PM, HERF, EBW, and LBW.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 (or EGR 294 [Engineering Materials & Manufacturing] or MET 231). Credit is allowed for only MET 442 or MET 502
MET	443	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 345; Credit is allowed for only MET 443 or 514
MET	444	Production Tooling	Design and fabrication of jigs, fixtures, and special industrial tooling related to manufacturing methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): MET 309. Credit is allowed for only MET 444 or MET 504
MET	455	Automation Systems Integration	Applies sensors and devices and their integration with PLCs and computers into automated devices and systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 351
MET	460	Capstone Project I	Group project designing, evaluating, and analyzing components, assemblies, and systems. Develop products/manufacturing techniques demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300; 331; 340; 345
MET	461	Capstone Project II	Small-group projects applying manufacturing techniques, with emphasis on demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 460
MET	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
MET	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
MET	501	Statistical Qlty Control Appls	SPC problem-solving techniques for implementation in industrial setting; design and analysis of experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 401 or 501
MET	504	Appl of Production Tooling	Design and fabrication of fixtures, jigs, templates, and specialized industrial tooling for manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 444 or 504
MET	509	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; credit is allowed for only MET 409 or 509
MET	510	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 410 or 510
MET	514	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 443 or 514
MET	515	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 415 or 515
MET	516	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 416 or 516
MET	518	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 418 or 518
MET	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MET	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	308	Manufacturing System Project I	Focuses on design for product realization in a manufacturing environment. Projects are industry driven and applicable to low-volume product development.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student

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MFG	318	Manufacturing Systems Proj II	Focuses on process development for high-volume manufacturing in the competitive global economy. Uses discrete event simulation software to model and study the manufacturing environments.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 219 with C or better; MFG 308 with C or better OR Visiting University Student
MFG	381	Processes&Validate Lab	Theory of basic manufacturing processes accompanied by the fundamental skills; safety practices while working with engineering drawings, machine tools and metrology equipment related to manufacturing.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	382	Modeling Manufacturing Sys I	Modeling of manufacturing systems using discrete event simulation. Introduces basic manufacturing-related data and system configurations. Uses commercial simulation software to build and analyze model output data.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 219 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	383	Comm in Production Environment	Effective communication is essential in all production environments for efficiency, yield and safety. Covers the major applications within a company and the expectations for the individual's capabilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): minimum junior standing OR Visiting University Student
MFG	385	Design for Manufacturing	Introduces the methods employed to design and produce products that can compete in the global marketplace. Topics include design for manufacturability and assembly, product life-cycle, economics of design and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	386	Integrated Circuit Manufact	Integrated circuit manufacturing combines judicious selection of materials with nano-meter features to create complex digital and analog circuits. The process demonstrates extreme applications of design, control and resource organization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 216 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	387	Industrial Automation	Introduces concepts and application of industrial automation systems. Topics include PLC control systems, embedded control systems, sensing technologies, robotics and material-handling systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
MFG	461	Engineering Economics	Covers the role of engineers in the manufacturing environment. Aspects of this role include troubleshooting, performance control, risk mitigation and financial planning. Provides tools and approaches for understanding and representing costs and making decisions based on these costs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better; MAT 343 OR Visiting University Student
MFG	472	Additive Manufacturing	Additive Manufacturing (AM) is driving a paradigm shift in design and manufacturing. Provides hands-on exposure across a wide range of commercial 3D printers. Topics include fundamentals of polymer, metal and composite AM processes and process capabilities such as rate and resolution. Introduces material properties and their dependence on raw material properties and process parameters; existing and new applications of AM; and a perspective on current and future technical challenges in AM. Provides a foundation for a more in-depth study of design for AM, and AM materials and structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	480	Advanced Stat for Manufacture	Applies experimental design and statistical process control in the manufacturing environment. Uses engineering statistical software to formulate and solve problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better OR Visiting University Student
MFG	481	Enterprise Economics	All manufacturing is about cost. Considers the components of these costs and presents a number of mathematical tools and approaches for representing, understanding and making decisions based on them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better OR Visiting University Student
MFG	482	Materials Science in Manufact	High-technology manufacturing combines and exploits the properties of a wide range of materials. Provides a science-based view of materials selection and optimization for product manufacturability and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): CHM 116 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	485	Engineering Internship	Experiential education. Local company oversees a student project experience at their facility.	N	PRA	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-3		Prerequisite(s): minimum junior standing
MFG	486	CNC Computer Programming	Theory and applications of NC languages using CAM software and CNC machine tools. Overview of advanced manufacturing processes including production CNC part programming ranging from current design to inspection standards.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): MFG 381 with C or better OR Visiting University Student
MFG	487	Casting and Forming Processes	Theory and practice of metal casting processes and design of castings. Analysis of various forming processes to determine load requirements. Theory and practice of tooling design for stamping operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-6		Prerequisite(s): Barrett Honors student

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MFG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MFG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-4		
MFG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-3		
MFG	545	Modern Manufacturing Methods	Investigates the capabilities and equipment of both conventional manufacturing processes and modern manufacturing processes. Emphasizes the fundamental, development and application of casting, forming and sintering processes for conventional manufacturing processes. Emphasizes the emerging topics related to additive manufacturing, field-assisted manufacturing and nanomanufacturing for modern manufacturing processes. Also introduces engineering materials, structure of materials, property of materials and material characterizations in the manufacturing processes. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Develops an understanding of manufacturing process evolution and the capabilities of modern manufacturing processes and equipment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 545 or MAE 598 (Modern Manufacturing Methods) or MFG 545
MFG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
MGT	300	Org & Mgt Leadership	Analyzes strategic, behavioral, and human resource management perspectives, including principles of strategic management and leadership of human resources.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s) w/C or better: W.P. Carey, Engr Mgt, or Sec Ed (Bus) major; ACC 231, 232 or 261; ECN 221, ECN 231, IEE 380 or STP 280; MAT 210, 251, 265 or 270; Pre- or coreq(s): ACC 241, 242 or 271 with C or better if completed OR Visiting University Student
MGT	302	Principles Intl Business	Multidisciplinary analysis of international economic and financial environment. Operations of multinational firms and their interaction with home and host societies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W. P. Carey BS or BA major; ECN 211, 212, 213, or 214 with C or better OR non-business major; minimum 2.50 GPA; minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MGT	303	Honors Org Strategies/Leadersh	Overview of business strategy principles, management processes, motivation, and leadership.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey School of Business Honors student; PSY 101 or 304 or SOC 101 or 301 with C or better; ECN 221 or 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271 with C or better if completed
MGT	310	Collaborative Team Skills	Development of skills in managing and working in collaborative environments. Theories and applications in small group dynamics and team facilitation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major OR non-business student; minimum 3.00 GPA; minimum 56 hours OR Visiting University Student
MGT	320	Organizational Behavior	Management processes, fundamentals of business-level strategy, individual difference issues, motivation and leadership of people in organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s) with C or better: Business Entrepreneurship BS or Management BS major; ACC 241, 242, or 271; ECN 221 or 231; MAT 211, 266, or 271; MGT 300 or 303; PSY 101 or PSY 304 or SOC 101 or 301 OR Visiting University Student

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MGT	380	Managemnt & Strategy Nonmajors	Introduces the functions and applications of management in organizations, including controlling, decision making, leadership, motivation, planning, and social responsibility. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): Non-Business major; minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student OR Visiting University Student
MGT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W. P. Carey BS or BA student; Pre- or corequisite(s): ACC 240, 241, 242, or 271 with C or better
MGT	400	Cross-Cultural Management	Cultural role in international business relations; applied principles of cross-cultural communications, negotiations, and management; regional approaches to business relations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	C & G	0Prerequisite(s): WP Carey BS or BA student OR non-business student with minimum 2.5 GPA and minimum 56 hours; MGT 300 or 303 or 320 or 380 with C or better. OR Visiting University Student
MGT	404	Chinese Lang & Global Bus Comm	Capstone course designed to synthesize the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Chinese Language and Culture. Analyzes case studies in which Chinese language and cultural skills are used to develop communication strategies in doing business in China. Learn new tools and techniques of analysis to enhance communication with Chinese business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with the Chinese and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment. Students are proficient in communicating in Chinese prior to taking this course.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; CHI 302 with C or better; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better
MGT	405	Spanish Lang & Global Bus Comm	Synthesizes the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Spanish Language and Culture. Students proficient in communicating in Spanish analyze case studies in which Spanish language and cultural skills are used to develop communication strategies in doing business in Spanish-speaking countries. Students learn new tools and techniques of analysis to enhance communication with their Spanish-speaking business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with Spanish speakers and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better; SPA 314 with C or better
MGT	411	Leading Organizations	Comprehensive overview of leadership in organizations. Provides students with understanding of leadership research and its applications to global organizations and the development of leaders.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 303, 320, or 380 with C or better OR Non-Business majors; MGT 300, 303, 320, or 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	420	Human Resource Management	Development of skills and knowledge to lead associates effectively: hiring, developing, evaluating, retaining, and rewarding employees. Preparation for leadership roles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BS or BA major OR Non-Business student; MGT 300, 303, 320, or 380 with C or better; minimum 3.0 GPA; minimum 56 hours OR Visiting University Student
MGT	421	Compensation in Organizations	Develops knowledge of theory and research in motivation, compensation and rewards, and skill in applying such knowledge to important compensation and reward decisions. Discusses strategic compensation and reward systems issues. Explores in detail a variety of monetary and nonmonetary reward systems; the motivational impact these systems have on employees, teams, and CEOs; and the performance impact they have on organizations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student

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MGT	422	Staffing	Focuses on the effective management of the flow of talent into and through organizations. Covers human resource planning, recruiting and selection, career transitions and other workforce movement. Provides opportunities to develop hands-on skills that are relevant to effectively managing talent flow.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	423	Training & Development in Orgs	Familiarizes students with the training and development function in organizations. Although tailored to students interested in human resources management, the course may also be relevant to students who may at some point be involved in training and development within an organizational context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	424	Employment Law	Provides an overview of U.S. employment law at both the federal and state levels. Reviews employment at will and wrongful discharge, employment torts, privacy, discrimination law, worker's compensation, occupational safety and health, unemployment, federal compensation laws, and the law of noncompetition and trade secrets. Designed for individuals preparing for careers in human resource management, labor relations or dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better OR Visiting University Student
MGT	425	Global Human Resources	Explores the importance of international business management in the context of international human resource management, including topics on culture, compensation and benefits, international organizations and their structures, international assignment management and the legal and regulatory considerations that global organizations face. Identifies differences in operating a domestic versus international business and how business practices need to be adapted to operate successfully in foreign markets. Covers global strategy and structure; understanding and managing cultural differences; design and alignment of global HRM practices; and the global HR function.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	426	HR Consulting Projects	Provides an opportunity to practice business management, relationship building, and HR technical skills in a real-world environment. Students complete human resource consulting projects with external outside organizations, allowing them to learn about the consultative nature common in corporate relationships, discuss real-world problems and solutions, and navigate technical processes related to the HR discipline.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed; Credit is allowed for only MGT 426 or MGT 494 (HR Consulting Projects) OR Visiting University Student
MGT	430	Negotiations	Improves student's understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Give students experience in bargaining and negotiation, as well as provide a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning--students spend most of their time participating in exercises and negotiation simulations, as well as discussing negotiation-based cases involving issues that often arise in the workplace. Provides a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business student with minimum 3.00 GPA and minimum 56 hours; MGT 300, 303, or 310 or TMC 330 with C or better OR Visiting University Student
MGT	450	Consulting Projects	Describes and analyzes business processes. Generates and evaluates alternatives. Creates improvement and implementation plans.	N	PRA	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L	Prerequisite(s) with C or better: W.P. Carey BS or BA major; ENG 101, 105, or 107; ENG 301 or 302; MGT 300 or 303; MGT 411; MKT 300, 302 or 303; Pre- or corequisite(s): FIN 300, 302 or 303 with C or better if completed
MGT	459	International Management	Concepts and practices of multinational and foreign firms. Objectives, strategies, policies, and organizational structures for operating in various environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W.P. Carey BA or BS major, OR non-Business student; MGT 302 or ECN 306 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): W.P. Carey BA Human Resources or BS Business Entrepreneurship or BS Management major
MGT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student

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MGT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MGT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 302, 303, or 310 with C or better OR non-business major; MGT 300, 302, 303, or 310 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisites: W. P. Carey BS or BA student OR non Business students with a minimum GPA of 2.50 and either at least 56 earned hours or non degree students OR Graduate students
MGT	501	Fundamentals of Org Behavior	Allows students to understand the human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others. Designed for students with limited business experience and without an undergraduate business degree.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	502	Organizational Behavior	Understands human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): W. P. Carey MBA students
MGT	513	Mindful Leadership	Provides a transformative experience that aids in developing skills associated with being a mindful leader. Focuses on introducing the concept of mindful leadership and explaining how to use it to achieve personal and professional goals. Then concentrates on using mindful leadership to lead individuals and teams. Specific learning goals include: (1) to enhance understanding of mindful leadership; (2) to improve skills in using mindful leadership to achieve personal goals; (3) to improve skills in using mindful leadership to lead individuals and teams; and (4) to propose a transformative plan aimed at increasing use of mindful leadership.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey graduate student
MGT	520	High-Impact Leadership	Addresses the inherent ambiguity surrounding effective leadership by providing a toolkit of tangible behaviors to ensure leaders create "high impact" in all areas of their professional and personal lives. Emphasizes what high-impact leaders do differently and uniquely to achieve results while also inspiring loyalty in relationships. Covers core topics including building executive maturity and presence, developing and delivering compelling messages, inspiring those around you, building a strong relationship network, establishing credibility, and managing upward relationships. Includes peer dialogue, extensive presentation skills training, and assignments based on students' real-life leadership experiences.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 520 or 591 (High Impact Leadership)
MGT	525	Leadership and Teamwork	A key objective of the W. P. Carey Full-Time MBA program is to develop each student's leadership competencies, which are essential competencies as the individual enters the workforce and advances through organizations. During the FT MBA program, each student participates in the Executive Connections program. This program gives each student an opportunity to enhance his or her understanding of key leadership competencies, apply an experiential process of leadership development, and meet one-on-one with an executive coach to deeply explore and reflect on personal leadership competencies and goals for development.	N		LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	0.5-3		Prerequisite(s): WPC MBA degree student
MGT	526	Future World of Work	Focuses on the future world of work in terms of how organizations need to be agile along with their leaders. Focuses on the skills individuals need to be successful in the future world of work, in essence, the Forward Focus leadership skills. A critical component of this course is partnering with executive mentors from the Executive Connections Program. Also pairs well with the Interdisciplinary Learning Labs which gives students experiential learning in terms of some of the skills needed in the future.	N		LEC	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	0.5-1		Prerequisite(s): degree- or nondegree-seeking graduate student

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MGT	528	Basics of Negotiations	Contemporary management issues, including environmental, project and supply chain management; new product development; quality control; TQM. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	530	Influence and Negotiations	Improves students' understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Gives students experience in bargaining and negotiation, as well as provides a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning-- students spend most of their time participating in exercises and negotiation simulations (including negotiating job offers), as well as discussing negotiation-based cases involving issues that often arise in the workplace. The goal is to provide students with a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; Credit is allowed for only MGT 530 or MGT 591 (Negotiations)
MGT	540	Entrepreneurship	Capstone case-based course covering all aspects of starting a business: opportunity identification, evaluation, concept development, identifying required resources, acquiring those resources, launching the entity, managing growth, and ultimately, harvesting the enterprise. Revolves around a series of cases, readings and class discussions designed to build a comfort level with understanding and solving problems faced every day, in real life, by a broad spectrum of entrepreneurs at various phases of venture development. Significant emphasis on understanding the valuation and financing of entrepreneurial ventures interwoven through discussions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; ACC 502 with C or better; FIN 502 with C or better; Credit is allowed for only MGT 540 or MGT 591 (Entrepreneurship)
MGT	545	Becoming Leaders Who Matter	Addresses core questions: What does it mean to be a leader who really matters? How can you become such a leader? Today's competitive and complex environment requires leaders who are equipped with not just the functional and technical skills necessary to run a business but, more significantly, the leadership skills that allow the business and the people involved in it to thrive. Provides an opportunity to reexamine thinking about leadership and assess current skills and competencies in this area. Highly interactive learning environment with case analyses, exercises, discussion, guided reflection activities, assessments and group work. Covers topics such as self awareness (motivations, values, and leadership style), developing perspective as leaders, the social context of leadership, the role of emotions in the workplace, using life experiences to extract leadership lessons.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 545 or 594 (Leading w/Authenticity & EI OR Becoming Leaders Who Matter)
MGT	552	Prof Develop & Engagement Prog	Deeply explores and develops professional skills. By identifying and building managerial competencies, facilitates the acceleration of career goals.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W. P. Carey MBA student; Credit is allowed for only MGT 552 or MGT 591 (Professional Development & Engagement Program).
MGT	565	Business and Public Policy	Takes a managerial perspective to examine the interface between businesses and their external political environments. Potential changes in public policy can affect current operations and future opportunities. Examines how managers can anticipate and affect the formation, modification and enforcement of public policy in various institutional environments.	N	LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey MBA Executive Program or W.P. Carey School of Business graduate student; Credit is allowed for only MGT 565 or MGT 591 (Business and Public Policy)
MGT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	586	Fundamentals of Strategic Mgmt	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
MGT	588	Sources Competitive Advantage	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): MBA degree student

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MGT	589	Strategic Management	Formulation of strategy and policy in the organization, emphasizing the integration of decisions in the functional areas.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): W. P. Carey MBA student
MGT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): W.P. Carey graduate student
MGT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: MBA degree student
MGT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Management and Entrepreneurship	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
MGT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	140	Sounds and Cultures	Introduces a range of practical and intellectual challenges presented by encounters with various kinds of music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): Music or Performance and Movement major OR Visiting University Student
MHL	201	Media Literacy for Musicians	Instruction in basic Macintosh computer literacy, including generic applications and music-specific programs with hands-on experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
MHL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MHL	339	Undergraduate Bibliography I	Research tools and methods in musicology, concentrating on resources pertinent to the study of music from Antiquity to the Baroque.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course OR Visiting University Student
MHL	340	Undergraduate Bibliography II	Research tools and methods in musicology, concentrating on resources pertinent to the period 1750-present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course
MHL	341	Music History I	Western European art music from Antiquity through Baroque. Identification/analysis through listening; application of historical and analytical concepts; research project comprising fresh thesis, detailed musical research, personal reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student
MHL	342	Music History II	Western European, American art music from Classical period to present. Identification/analysis through listening; transfer/application of music/analytical concepts; research project comprising fresh thesis, insightful musical research/reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student
MHL	344	Music in World Cultures	Examines the relations among music, dance, theatre, religion, and social status in Asia, Africa, Oceania, Europe, and the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): minimum 42 hours OR Visiting University Student

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MHL	363	Survey of Russian Music	Examines music and musical life in Russia, the Soviet Union, and the post-Soviet C.I.S. from the Middle Ages to the present.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Music major; MHL 140 with C or better
MHL	365	Popular Music and Race	Examines popular music in the United States with emphasis on historical, sociocultural, economic and aesthetic concerns as they intersect with issues of race and race relations.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; MTC 221 with C or better; Credit is allowed for only MHL 365 or MHL 394 (Pop Music and Race) or MHL 494 (Pop Music and Race) OR Visiting University Student
MHL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major
MHL	437	Music in the Baroque Era	Examines music, culture and aesthetics in the 17th and early 18th centuries.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major or minor; MHL 140 with C or better; MTC 221 with C or better; minimum 45 hours OR Visiting University Student
MHL	438	Topics in 18th-Century Music	Selected topics exploring the musical styles of the 18th century and their cultural contexts.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L & H	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	439	Topics in 19th-Century Music	Selected topics exploring the musical styles of the 19th century and their cultural contexts.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & H	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	440	Topics in 20th-Century Music	Selected topics exploring the musical styles of the 20th century and their cultural contexts.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	456	History of Opera	Development of opera from its creation ca. 1600 to present. Emphasis placed on major stylistic developments and representative works.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better
MHL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MHL	490	Capstone I: UG Thesis Research	Selection of topic and research toward the completion of an undergraduate thesis of no fewer than 50 pages.	N		RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 339
MHL	491	Capstone Project II: UG Thesis	Completion of an undergraduate thesis in musicology or ethnomusicology of no fewer than 50 pages.	N		RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 490
MHL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MHL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MHL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better OR Visiting University Student
MHL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MHL	532	Music Bibliography	Major historical and analytical writings; systematic and historical collections of music.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate Music student
MHL	547	Music and Healing	Combines elements of musicology, philosophy anthropology music therapy, neuroscience, psychology; investigates ways music has been proven to positively affect the "human condition"; focuses on what music means to humans.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MHL 547 or MHL 494 (Music and Healing) or MHL 598 (Music and Healing)
MHL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Enroll	Mult Primary	Component	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MHL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student who has passed audition
MHL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	632	Applied Musicology	Explores practice-oriented entrepreneurial opportunities and methods in musicology, acquires knowledge and develops skills in community engagement and outreach, explores pathways of professional publication and network building, and participates in organizing curated concert series and scholarly conferences.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 532
MHL	657	Topics in Symphonic Literature	Examines the evolution of the symphony and symphonic poem from the early classic era through the 19th century, with emphasis on the analysis of selected works.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	668	Introduction Ethnomusicology	Experiencing theory and methodology by being ethnomusicologists through musical performance, primary writings on fieldwork, career structuring, the history of the discipline, its relationship with historical musicology, and the cultural theories which ethnomusicologists draw on.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	670	Area Studies-Ethnomusicology	Study of the music of a particular culture, country, or area (e.g., music of Mexico, Latin America, China, Africa).	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	675	Choral Music & Institutions	Examines the history of choral music through the lens of choral institutions: patronage, education, ritual, performing forces, status (professional vs. amateur), and locale.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N		SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N		RSC	N	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	798	Research Colloquium	Interactive research forum featuring research presentations and discussion among musicology students, faculty and guest speakers from across campus and other institutions. Encourages students to engage in constructive dialogue with their peers as well as with faculty and guest speakers in a collegial environment conducive to exchange and collaboration. Supervised by a faculty panel from the musicology division.	N		RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSI 601 or 602
MHL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	205	Microbiology	Introductory microbiology, emphasizing basic principles of microorganisms (bacteria, protozoa, algae, fungi, and viruses) and the role they play in health, ecology, and applied fields. May not be used for Microbiology credit unless a diagnostic test is passed. Both MIC 205 and MIC 206 required for SG General Studies credit.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SG	Prerequisite(s): CHM 101 or 113 OR Visiting University Student

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MIC	206	Microbiology Laboratory	Principles and lab techniques used in identifying and handling microorganisms. Both MIC 205 and 206 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	SG	Pre- or corequisite(s): MIC 205 or 220 with C or better if completed OR Visiting University Student
MIC	220	Biology of Microorganisms	Introductory microbiology for students majoring in the life sciences. Detailed study of microbial cells, their structure, genetics, physiology, and taxonomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or 281 with C or better; CHM 116 OR Visiting University Student
MIC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	302	Advanced Bacteriology Lab	Advanced lab techniques in bacterial growth, physiology, and genetics, with an emphasis on quantitative data and formal lab reports. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student
MIC	360	Bacterial Physiology	Mechanisms and control of cell metabolism, structures, and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	379	Medical Bacteriology	Principles of medical bacteriology with emphasis on bacterial infections, diagnostic testing, clinical symptoms, pathogenesis, and treatments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	401	Research Paper	Paper of 15 or more pages based on library or lab research in collaboration with a faculty member. Required of all Microbiology majors. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIC 206 with C or better; MIC 220 with C or better; senior standing OR Visiting University Student
MIC	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student
MIC	421	Experimental Immunology	Introduces the basic techniques, methods, and assays used in immunology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 or 360, MBB 247, or MIC 220 with C or better OR Visiting University Student
MIC	425	Advanced Immunology	Surveys recent advances in immunology, including lymphocyte membranes, lymphokines/biochemistry, molecular genetics, theoretical immunology, immunoregulation, neuroimmunology, and immunologic diseases.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 420 with C or better
MIC	441	Bacterial Genetics	Surveys genetic exchange and regulatory processes in bacteria and their viruses. Bacteria and viruses as tools in genetic engineering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	442	Bacterial Genetics Laboratory	Techniques of mutagenesis, mapping, and strain and genetic library construction.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre/Co-requisite: MIC 441
MIC	443	The Microbial Universe	Diversity and physiology of microorganisms with emphasis on recent advances in the biology of microorganisms of environmental and medical importance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 353 with C or better; Pre- or corequisite(s): MIC 444 with C or better if completed OR Visiting University Student
MIC	444	The Microbial Universe Lab	Techniques used to explore the microbial universe with emphasis on structural, metabolic, genetic, and growth characteristics relevant to the identification and characterization of microorganisms of environmental and medical importance. Not open to students with credit in MIC 206.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): MIC 443 with C or better OR Visiting University Student
MIC	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student
MIC	446	Molecular Biology/Genetics Lab	Molecular genetic techniques; plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student
MIC	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and metals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only GLG 461 or MIC 461
MIC	470	Bacterial Diversity/Systematic	Biology, classification, and enrichment culture of the nonpathogenic bacteria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): MIC 302 with C or better
MIC	481	Bacterial Pathogenesis	Human host-bacterial interactions in infectious diseases with emphasis on pathogenesis and molecular mechanisms of bacterial virulence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better; MIC 360 or 441 with C or better

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MIC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
MIC	485	General Virology	Fundamental principles of viruses, their molecular biology, replication, genetics, and pathogenesis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MIC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MIC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
MIC	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MIC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
MIC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
MIC	501	Foundations in Microbiology	Provides overview of the field of microbiology including: bacterial genetics and physiology, virology and host/pathogen interactions through lectures, reading, presentations and discussion of papers in the field of microbiology and immunology. Students read all papers, participate in class discussions and present papers during the semester.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MIC 501 or MIC 591 (Milestones in Microbiology)
MIC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MIC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIS	101	Intro to the US Army	Introduces the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills such as cultural understanding, goal setting, time management, stress management and comprehensive fitness relate to leadership, officership and the Army profession. Focuses on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the Army ROTC program, its purpose in the Army, and its advantages for the student. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	102	Foundation of Adaptive Leaders	Introduces the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, students learn how ethics and values shape the Army and the specific ways that these ethics are inculcated into Army culture. Explores the seven Army values and the warrior ethos, investigate the profession of arms and Army leadership as well as an overview of the Army, and gains practical experience using critical communication skills. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101
MIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	201	Army Leadership and Decisions	Academically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam and final exam. Also includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102 OR Visiting University Student
MIS	202	Army Doctrine and Team Dev.	Academically challenging course where students study, practice and apply the fundamentals of the leadership, officer skills, Army values and ethics, personal development and tactics at the small-unit level. Focuses on cross-cultural competencies as they relate to Army doctrine and how they apply in a combatant commander's engagement strategies. Stresses Army values, teamwork and warrior ethos and their relationship to the law of land warfare and philosophy of military service. Covers the ability to lead and follow through team building exercises in small units up to squad level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Also includes physical training assessment, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201
MIS	205	Leader's Training Course	6-week training program emphasizing practical hands-on skills and leadership development. Taken in lieu of MIS 101, 102, 201, 202. Conducted at Fort Knox, Kentucky.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		

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MIS	301	Training Management and WFF	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab or during a Leader Training Exercise (LTX). Requires the student to write peer evaluations and receive feedback on abilities as a leader and how to improve those leader skills that can further develop into a successful officer. Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV Cadets who evaluate the students using the Cadet Officer Evaluation System (OES).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIS 101; MIS 102; MIS 201; MIS 202
MIS	302	Leadership in Small-Unit Ops	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab, or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV cadets who evaluate the students using the Cadet Officer Evaluation System (OES). Teaches the student the necessary skills to be successful at the USACC Advance Camp.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIS 101; MIS 102; MIS 201; MIS 202; MIS 301
MIS	303	National Adv Leadership Camp	6-week training program emphasizing leadership development and advanced military skills, including tactics, land navigation, and physical training. Conducted at Fort Lewis, Washington.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	401	The Army Officer	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam, and final exam. Assesses students on the execution of a mission during a classroom PE, leadership lab or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is mandatory for commissioning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302 OR Visiting University Student
MIS	402	Company Grade Leadership	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. For the capstone exercise, requires students to complete an oral practicum that is evaluated on their knowledge of the 20 Army warfighting challenges. Assesses students on leadership abilities during classroom PE, leadership labs or Leader Training Exercises (LTXs). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is a mandatory requirement.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302; MIS 401
MIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Military Science	1-3		

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MKT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Credit is allowed for only FSH 280 or MKT 280
MKT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	300	Marketing & Bus Performance	The dynamic role of marketing within society and organizations. Emphasizes frameworks and analytical tools that ensure customer focus and drive organizational performance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey major, or non-business major with minimum 2.50 GPA and minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MKT	302	Applied Mrktng Mgmt & Ldrship	Market planning, execution, and assessment. Emphasizes decision and communication skills related to market opportunity analyses and marketing program development as a core business function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s) w/ C or better: W. P. Carey Marketing BS major; ECN 221 or 231; ENG 101, 105, or 107; MAT 211, 266, or 271; Pre- or corequisite(s): ACC 241, 242, or 271 w/ C or better if completed OR Visiting University Student
MKT	303	Honors Marketing Theory & Prac	Covers basic applications of marketing concepts to problems that are common to marketing managers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s) w/ C or better: W.P. Carey Honors student; ECN 221 or 231; ENG 101, 105, or 107; MAT 211; Pre- or corequisite(s): ACC 241, 242, or 271 w/ C or better if completed; Credit is allowed for only MKT 300 or MKT 302 or MKT 303
MKT	311	Sports Business	Focuses attention on components ranging from professional sports to collegiate sports, as well as sports-related products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; minimum 56 hours; Pre- or corequisite(s): MKT 300, 302, or 303 with C or better if completed OR Visiting University Student
MKT	352	Marketing Research	Knowledge and skills to make intelligent decisions in the design, evaluation and application of marketing research and market data.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s): W. P. Carey Marketing student; ENG 101, 105, or 107 with C or better; MKT 302 or 303 with C or better OR Visiting University Student
MKT	355	Designing Brand Identity	Creates brand identity initiatives by beginning with a focus on research and strategy. Covers how the support system of design principles, color, imagery, typography and composition makes an entire brand identity program cohesive, yet differentiated. Explores major media development tools (e.g., Adobe Creative Cloud) in a way that can help students select the right approach for a brand, and also to make good choices for working across media. Differentiates between critical digital literacy as opposed to functional digital literacy, which focuses predominately on how to operate software applications.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): MKT 302 or 303; Credit is allowed for only MKT 355 or MKT 494 (Digital Tools for Building Brands)
MKT	365	Advertising & Beyond	Advertising and brand development as means to marketing and business success. Consideration of market research, segmentation, objective, creative strategy, digital and integrated media tactics, media management, and metrics of effectiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS student; MKT 300, 302 or 303 with C or better or Visiting University Student
MKT	370	Prof Sales & Relationship Mgmt	Investigate the vital role of sales, its relationship to other functions within the firm, and its impact on customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business major with minimum 2.50 GPA and minimum 56 hours; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	385	Data-Driven Marketing	Investigates the increasingly important relationship between marketing and data, looking both at the collection of qualitative and quantitative inputs and the analysis of that data to make informed decisions. It's big (and small) data meets big ideas.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey major; MKT 300, 302, or 303 with C or better; Credit is allowed for only MKT 385 or MKT 494 (Data-Driven Marketing) OR Visiting University Student

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MKT	390	Essentials of Marketing	Focuses on the nature and processes of marketing with an emphasis on practical application. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student OR degree- or nondegree-seeking graduate student OR Visiting University Student
MKT	391	Essentials of Selling	Focuses on the selling process and its practical applications within consumer and business markets. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student; minimum 2.00 GPA OR degree-seeking or nondegree-seeking graduate student OR Visiting University Student
MKT	392	Essentials of Business Mktg	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business major; minimum 2.00 ASU cumulative GPA; minimum 56 hours; MKT 390 with C or better; or Non-degree seeking undergraduate or Degree seeking or Non-degree seeking graduate student
MKT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): Non-business student, and minimum cumulative GPA of 2.00, and minimum 56 hours OR be a Non-degree student with minimum 2.0 ASU cum GPA OR be a graduate student
MKT	395	Essen Advertising & Mktg Comm	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA major or non-business major; minimum 2.00 GPA; minimum 56 hours, OR non-degree student with minimum 2.0 GPA OR graduate student; Credit is allowed for only BUA 382 or MKT 395 OR Visiting University Student
MKT	396	Essentials of Services Mkt	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR Business (Retail Management) BA major OR nondegree-seeking student OR graduate student (degree- or nondegree-seeking) OR Visiting University Student
MKT	397	Essentials of Global Marketing	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in the student's home country and marketing globally. The rapid adoption of technology has fundamentally changed the dynamics of marketing and created new competitive paradigms that must be understood for firms to be successful.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree- or non-degree seeking graduate student OR Visiting University Student
MKT	398	Essentials of Sports Business	Introduces the concepts of sports business. Builds knowledge, skills and understanding of the fundamentals of sports business. Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and how they impact sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 ASU GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree-seeking or non-degree seeking graduate student OR Visiting University Student
MKT	402	Consumer Behavior	Applies behavioral concepts in the analysis of consumer behavior and the use of behavioral analysis in marketing strategy formulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing student; MKT 352 with C or better OR Visiting University Student
MKT	410	Sales Management	Constructive investigation of selling processes, their application in business and consumer contexts, and management of the sales function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	420	Retail Management	The role of marketing in retailing and retail performance. Challenges and processes of retail management across various institutions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA Business (Retail Management) major; MKT 300 or 302 or 303 with C or better

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MKT	421	Fan Behavior and Sports Mktg	Focuses on what it means to be a consumer in a sports marketing context society and what, as a marketer, you need to know to develop, evaluate and implement effective marketing strategies for fans.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	425	Global Marketing Management	Analyzes marketing strategies and practices developed by firms to compete in global markets and adapt to changing international environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	G	Prerequisite(s): W.P. Carey BA or BS major or non-business major with minimum 2.50 ASU cum GPA and minimum 2.50 ASU business GPA and 56 earned hours; MKT 300 or 302 or 303 with C or better OR Visiting University Student
MKT	430	Sports Business	Builds knowledge, skills, and understanding of sports business; exposure to leading-edge thought, methods, and practices in sports business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BS student; must have completed MKT 300, MKT 302 or MKT 303 with a grade of C or better.
MKT	431	Sports Events and Facility Mgt	Project-based course that encompasses the administration, coordination and evaluation of any type of event related to sports.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	435	Entrepreneurial Marketing	Identifies and evaluates marketing opportunities; motivates an appreciation of entrepreneurial marketing and its different environmental contexts for general marketing principles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	440	Creating Digital Experiences	Marketing is about creating meaningful experiences between brands and the people they serve. Designed to jump start learning for any student interested in marketing goods and services in contemporary society, this course covers digital ideation and planning as well as digital media, all with a focus on practical application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better; Credit is allowed for only MKT 440 or MKT 494 (Digital Marketing in Practice) OR Visiting University Student
MKT	441	Sports Revenue Generation	Focuses on selling and how to create, maintain and build relationships within the sports context. Students gain knowledge and develop skills in choosing a sales career including attributes of a sales person, sales call preparation, value propositions, creating value for the client, team selling, questioning and listening techniques, negotiating, persuasion and closing techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	442	Services Marketing Strategy	Concepts, skills, and strategies for addressing the imperative marketing challenges and opportunities involving service.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; minimum 2.50 GPA; minimum 56 hours; MKT 302 or MKT 303 and MKT 352 with C or better; Pre- or corequisite(s): MKT 402 OR Visiting University Student
MKT	450	Social Media and Content Mkt	Centers on how to effectively use social media and content marketing to build relationships between a company and its customers. Students learn to create content, how to deliver content through social media and community management, as well as how to optimize content for maximum effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing BS major; MKT 302 (or 303) with C or better; Credit is allowed for only MKT 450 or 494 (Social Media Mktg and Com Mgmt) OR Visiting University Student
MKT	451	Sports Business Analytics	Develops and applies critical and creative thinking skills through the lens of a sports context with the goal of making data-driven decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business cert; MKT 300, 302 or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	452	Bus-to-Bus Marketing Strategy	Concepts, skills, and strategies for performing competitively in the business market where organizations rather than households are the customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; minimum 2.50 GPA; minimum 56 hours; Pre- or corequisite(s): MKT 402 OR Visiting University Student

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MKT	455	Brand Management	Focuses on understanding brand management and the concepts associated with building brand equity and managing brand identity and positioning. Students learn how firms create a competitive advantage by incorporating consumer insight into an effective branding strategy. In addition, students gain an understanding of the role of branding on product portfolio management. Heavily features case discussion, projects and real brands. Applies brand management knowledge to an actual branding strategy project for a small firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better; Credit is allowed for only MKT 455 or MKT 494 (Brand Management) OR Visiting University Student
MKT	460	Sports Revenue Generation	Focuses on providing a sophisticated understanding of revenue generation in the context of sports. Students gain knowledge of key marketing, management and administrative functions that play a critical role in revenue-generation strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS major; MKT 300, 302 or 303 with C or better
MKT	462	Competitive Marketing Strategy	Strategy formulation and decision making by the marketing executive. Integrates marketing programs and considers competitive marketing issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing student; MKT 302, 303 or 352 with C or better; Pre- or corequisite: MKT 402 with C or better if completed OR Visiting University Student
MKT	465	Projects in Sports Business	Focuses on providing students with an innovative opportunity to work directly with sports business industry professionals to address real-world and real-time issues faced by these organizations. Students develop an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major; MKT 300 or 302 or 303 with C or better; MKT 311 or 430 with C or better OR Visiting University Student
MKT	472	Immersive Brand Experience I	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Focuses on customer and brand market research, strategic planning and foundations of the creative process.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s) w/ C or better: W.P. Carey Marketing major; MKT 302 or 303; MKT 352; min 56 hours; Pre- or corequisite(s): MKT 402 w/ C or better if completed; Credit allowed for only MKT 472 or MKT 494 (Proj in Advertising) OR Visiting University Student
MKT	473	Immersive Brand Experience II	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Applies previously acquired marketing knowledge and best practices in creative direction, writing and art direction, media development and strategy to deliver completed brand development initiatives for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; min 56 hours; Pre- or corequisite(s): MKT 402 with C or better if completed; Credit is allowed for only MKT 473 or MKT 494 (Projects in Advertising)
MKT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with B- or better; minimum 3.00 GPA
MKT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-6		Prerequisite(s): Barrett Honors student
MKT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	W. P. Carey School of Business	Department of Marketing	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MKT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-3		Pre-requisites: Business students with professional status or non-business students with a minimum cumulative GPA of 2.50 and 56 earned hours
MKT	501	Fundamentals of Marketing Mgmt	Manages the marketing function; market and environmental analysis; marketing planning, strategy and control concepts. Development and management of marketing programs. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree-seeking graduate student
MKT	502	Marketing Management	Managing the marketing function; market and environmental analysis; marketing planning, strategy, and control concepts. Development and management of marketing programs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): W. P. Carey MBA students

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MKT	520	Innovating Through Services	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	525	Excel in Services	Focuses on challenges of managing services and delivering quality service to customers. The attraction, retention, and building of strong customer relationships through quality service (and services) are at the heart of the course content. The course is equally applicable to organizations whose core product is service and to organizations that depend on services for competitive.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	530	Creativity and Innovation	Multidisciplinary approaches to theories and practices of inspiring and managing innovation and change for sustainable competitive advantage. Focuses on both the student's individual creativity and the planning and implementation of innovations, technologies, processes, or systems that pose significant uncertainty. Places special attention on the processes surrounding understanding the consumer, ideation and implementation. Inclusive in this are methods such as environmental scanning, scenario planning, contextual research, storytelling, concept testing and prototyping. Also includes the many aspects of the organization's structure and culture regarding innovation and creativity.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	535	Global Marketing Strategy	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in a home country and marketing globally.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	540	Branding and Consumer Markets	Provides an intensive examination of factors that drive consumer behavior. Covers topics such as understanding factors contributing to a superior value proposition, identifying elements associated with the stability of the existing alternative, specifying components linked to reducing the level of uncertainty associated with the new alternative; articulating independent influences (e.g., regulatory and social) operating in a particular change context, and comprehending biases that exist in the search and decision making process. Also places additional emphasis on brand development as well as on the role that social media assumes in the change process.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	545	Entrepreneurial Marketing	Introduces the process of developing a plan for starting a business and presenting that plan to potential investors in order to obtain financing. Covers the purposes of a business plan, the varying objectives of different types of investors or financial institutions, and how they complement or conflict with the interests of an entrepreneur. Topics include proprietary positioning, types of organization, and differing management objectives.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	550	Product and Service Innovation	Intimately familiarizes students with the front end of the new product design process and provides concrete tools for determining strategies for developing new products based on input from customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	555	B2B - Capturing Value	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments, and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	560	Customer Relationship Mgmt	Focuses on the tools, metrics, and systems used to measure and manage customer relationships. Key to the development and use of sound customer metrics are market research skills including competencies in research design, sampling, measurement, data collection, and data analysis. Covers how to use types of data such as surveys, purchased data, transactional data, the Web, and social media to measure and manage customer relationships.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W. P. Carey MBA Full Time student.

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MKT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
MKT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
MKT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Marketing	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	501	Writing About Social Issues	Reading, discussion and creation of nonfiction writing on diverse societal issues. Investigates diverse forms and genres of writing.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	502	Religion, Culture, and Health	Focuses on how cultural and religious notions may come into conflict around issues of health. Contrasts two societies, not necessarily contemporary, from different continents.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	503	Ethics, Science, and Culture	Introduces ethics related to the practice of art, science, and medical practice in modern and premodern society.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Master of Liberal Studies student OR MAS in American Media and Popular Culture student. Credit is allowed for only FMS or MLS 504
MLS	505	The Research Process	Contemporary scholarly writing and research processes that adult learners, new to graduate study, can use in all MLS classes and for years ahead.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MLS 505 or MLS 598 (The Research Process) or MLS 598 (Research Methods)
MLS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student

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MLS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MND	101	First-Year Chinese I	Beginning course in Modern Standard Chinese designed for students who have little or no previous background in the language. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information that go along with language use.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student
MND	102	First-Year Chinese II	Beginning course in Modern Standard Chinese designed for students who have completed MND 101. Different pedagogical approaches such as group practice, role play and situational dialogues are designed to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information with application to global business communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; Credit is allowed for only CHI 102 or MND 102
MND	201	Second-Year Chinese I	First part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed First-Year Chinese I and II. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing. While linguistic elements are the focus of this course, also includes cultural information that accompanies language use along with a deep emphasis on global work situations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; Credit is allowed for only CHI 201 or MND 201 OR Visiting University Student
MND	202	Second-Year Chinese II	Second part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed three semesters of Modern Standard Chinese at the college level or equivalent. Builds on the vocabulary introduced in the first three courses, with deeper emphasis on global work situations. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing Modern Standard Chinese. While oral proficiency is the focus of this course, also includes cultural information that accompanies language use in the teaching as well.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; MND 201; Credit is allowed for only CHI 202 or MND 202
MSA	101	Elementary Arabic I	Introductory Arabic language focuses on pronunciation of Arabic sounds and basic writing skills. Students learn Arabic culture through standard greetings, common phrases, vocabulary and performance of appropriate social behaviors common in the Arab world which prepares students for work in global organizations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Credit is allowed for only ARB 101 or MSA 101
MSA	102	Elementary Arabic II	Continuation of Elementary Arabic I, adopts different pedagogical approaches such as group practice, role play and situational dialogues to help increase listening, speaking, reading and writing skills. While linguistic elements are the focus, cultural and intellectual contexts provide a medium for understanding the Arab-Islamic world and the global business setting.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; Credit is allowed for only ARB 102 or MSA 102

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MSA	201	Intermediate Arabic I	Directed to students who have completed the first two courses of college-level Arabic. Students reach an advanced level of oral proficiency through concentrating on new verbs, vocabulary and unique structures of sentences which enable them to master a highly sophisticated usage of the language.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; Credit is allowed for only ARB 201 or MSA 201
MSA	202	Intermediate Arabic II	Provides advanced ability to understand, read, write and communicate in Arabic and is directed to students who have completed the first two Arabic elementary courses and the first intermediate course. Focuses on transitive, intransitive and passive and active verbs which enable students to express themselves in highly sophisticated Arabic styles and discourse. Students study how Arabic people perceive and communicate important cultural, historical and economic themes as well as major historical figures and their contributions to Arabic society.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; MSA 201; Credit is allowed for only ARB 202 or MSA 202
MSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	221	Popular Music Lab	Menu of courses designed to build popular music-specific musicianship skills. Respective course topics serve as complements to the fields of study available in the popular music foundation series.	Y		LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MSC	443	Popular Music Forum	Studio class that functions as a collaborative lab for all popular music students regardless of their musicianship specializations. Investigates various topics in popular music performance, composition and production. Students cultivate skills related to their musicianship specializations and develop aural skills and knowledge of music through participation in collaborative and solo projects, the study of recordings, and compositions.	N		LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition
MSC	451	Popular Music Indus Studies I	Familiarizes students with an overview of the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. Study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): minimum 45 hours
MSC	452	Popular Music Indus Studies II	Familiarizes students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on and offline promotion and marketing tools.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSC 451 with C or better
MSC	474	Popular Music Specialization	A menu of courses designed to deepen specific aspects of student's musicianship in the context of popular music; each specialization course has an associated internship that provides students opportunities to apply what they are learning in a real-life context while also gaining additional skills and understanding.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Popular Music BA major; 2 hours of MSC 443 with C or better; Pre- or corequisite(s): MSC 451 with C or better if completed OR Visiting University Student
MSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): minimum 45 hours
MSC	489	Popular Music Capstone Project	Summative presentation of the student's interests which demonstrates mastery of the student's chosen area of focus. This may include but is not limited to a creative project or experience with a focus in music industry studies; performing, songwriting, composing, film scoring, recording, producing, or promoting. Students gain a more advanced level of knowledge and understanding of the practice and philosophy of the music industry in order to launch or further their career as a professional popular musician.	N		RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Popular Music BA major; 6 hours of MSC 443 with C or better; 6 hours of MSC 474 with C or better
MSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student

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MSC	551	Pop. Music Industry Studies I	Familiarizes students in the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. This is accomplished through the study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MSC	552	Pop. Music Industry Studies II	Familiarize students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on- and offline promotion and marketing tools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MSC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MSE	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Credit is allowed for only MSE 208 or PHS 208
MSE	211	Intro to Mechanics-Materials	Topics include stress, strain, elasticity, axial loading, torsion, bending, yield criteria, fracture, general energy methods and Castigliano's Theorem.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): PHY 121; PHY 122; MSE 250 with a C or better
MSE	212	Microstruc & Properties Lab	Lab experiments introducing optical and electron microscopy techniques, metallography and microstructure of metals, effects of composition and processing, and compositional identification.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Pre- or corequisite(s): MSE 211 OR Visiting University Student
MSE	215	Materials Synthesis	Introduces contemporary techniques for synthesizing both traditional and novel materials and the corresponding correlation to synthesized materials properties.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre- or corequisite(s): MSE 250 with C or better if completed OR Visiting University Student
MSE	250	Structure&Properties-Materials	Basic concepts of material structure and its relation to properties. Application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): CHM 114 or 113 with Pre- or corequisite(s): CHM 116 OR Visiting University Student ** DO NOT TOUCH REQUIREMENTS W/OUT SUPERVISOR APPROVAL!**
MSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		
MSE	301	Materials and Civilization	Focuses on exploring how materials technology can change people's lives. Traces how societies evolved based on the access to materials and the ability to exploit them and trade them among nations. Studies the role of materials in a variety of contexts such as food, art, warfare, transportation, medicine, information and energy from the Stone Age through the industrial revolution to the modern world. Analyzes the connection between the dramatic developments in civilization and advances in materials through the lens of structure, properties and processing of materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Minimum Junior standing; Credit is allowed for only MSE 301 or 394 (Materials and Civilization)
MSE	308	Sensing the World	Project-oriented science course develops critical thinking and technical skill using Internet modules on the five senses.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Prerequisite(s): MSE 208 OR Visiting University Student
MSE	330	Thermodynamics of Materials	Principles of statistical mechanics, statistical thermodynamics of single crystals, solutions, phase equilibrium, free energy of reactions, free electron theory, and thermodynamics of defects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials Science and Engineering minor; MSE 250 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
MSE	335	Materials Kinetics	Introduces kinetics in processing of materials as illustrated through real-world materials processing examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or students with approved Materials minor; MSE 330
MSE	355	Structure and Defects	Intermediate-level grounding in crystallography, crystal defects, surfaces and interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s): Fulton Engineering undergrad stdnt or Material Scie & Engineering minor; MSE 250 w/ C or better; Pre- or coreq(s): MAT 267 or 272 w/ C or better if completed; MAT 242, 342, or 343 OR Fulton Engineering grad stdnt OR Visiting University Student
MSE	356	Thin Film & Microelec Dev Lab	Lab experiments correlating atomic structure, defects and microstructure of processed metals, ceramics polymers and composites to their mechanical and thermal properties.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Pre- or corequisite(s): MSE 355 OR Visiting University Student

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MSE	415	Math/Computer Mthds-Materials	Mathematical, computational, and statistical methods and computer programming used to model materials science phenomena and materials engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	CS	Prerequisite(s) w/ C or better: Fulton Engr undergrad stdnt or Materials Scie & Engr minor; MAT 267 or 272; MAT 274 or 275; MSE 250; Credit is allowed for only MSE 415 or MSE 511 or MSE 598 (Math & Comp Methods in Materials) OR Visiting University Student
MSE	420	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MSE 355 with C or better; Credit is allowed for only MSE 420 or MSE 514
MSE	421	Physical Metallurgy Laboratory	Focuses on analysis of microstructure of metals and alloys and includes correlation with mechanical properties to some extent.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science & Engineering BSE major or minor; MSE 355 with C or better
MSE	440	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering BSE major or minor; MSE 335; MSE 355 with C or better; Credit is allowed for only MSE 440 or MSE 516 OR Visiting University Student
MSE	442	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 442 or MSE 494 (Fatigue, Fracture, Creep) or MSE 540
MSE	450	Intro Materials Characterizatr	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; PHY 131; MSE 355; Credit is allowed for only MSE 450 or MSE 510
MSE	451	Nanomats & Electronics Char Lab	Lab for materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering undergraduate student or Materials Science and Engineering minor; Corequisite(s): MSE 450 OR Visiting University Student
MSE	457	Quantum Mechanics:Atoms&Solids	The effect on quantum mechanics on the electronic structure and properties of atoms and solid materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering student or Materials Science and Engineering minor; MAT 275 with C or better; MSE 250 with C or better; PHY 131 with C or better OR Visiting University Student
MSE	458	Electronic, Mag, Optical Prpties	Electrical, optical, and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering student; MSE 457; Credit is allowed for only MSE 458 or MSE 515
MSE	460	Nanomats in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250; Credit is allowed for only MSE 460 or MSE 494 (Nanomats. In Energy Production) or MSE 560 or MSE 598 (Nanomats. In Energy Production)
MSE	466	Electrochemical Energy Storage	Electrochemical concepts relevant to real-world devices. Discusses basic electrochemical principles with an emphasis on solid-state electrochemistry and the nature of the solid-electrolyte interface in order to give students the background knowledge needed for understanding and analyzing real device performance of, e.g., batteries, solar hydrogen generation, photoelectrochemical cells, electrocatalysts, electrochemical capacitors, fuel cells. Critically evaluates media reports and journal publications describing electrochemical energy conversion and storage devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s): CHM 114 or 116; PHY 121; PHY 131; MSE 250; Pre- or coreq(s): CHE 342, MAE 241 or MSE 330; Credit for only CHE 494, CHE 598, MAE 494, MAE 598, MSE 494, MSE 598, or NAN 598 (Electrochemistry Energy Conversion & Storage) or MSE 466 or MSE 566
MSE	470	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s) w/ C or better: Fult Engr undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student

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MSE	471	Introduction to Ceramics	Principles of structure and property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 355 OR Visiting University Student
MSE	476	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering major or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 476 or MSE 519
MSE	482	Materials Engineering Design	Principles of the design process. Feasibility and optimization. Manufacturing processes, materials selection, failure analysis, and economics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	L	Prerequisite(s): Materials Science and Engineering BSE major; ENG 101, 105, or 107 with C or better; MSE 211 with C or better; MSE 355 with C or better OR Visiting University Student
MSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		
MSE	489	Capstone Design Project I	Covers how to plan an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 & 490 must be taken to secure L General Studies designation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1	L	Prerequisite(s): Materials Science and Engineering BSE major; ENG 101, 105, or 107 with C or better; Corequisite(s): MSE 482
MSE	490	Capstone Design Project II	Students learn how to conduct an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 and 490 must be taken to secure L General Studies designation.	N	RSC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	2	L	Prerequisite(s): Materials Science & Engineering BSE major; ENG 101, 105, or 107 with C or better; MSE 482; MSE 489
MSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MSE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate or graduate student
MSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-3		
MSE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MSE	502	Partial Differential Equations	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE or MSE 502
MSE	503	Concepts in Materials Science	Familiarizes students with fundamental concepts and terms used in MSE. Introduces the relationship between structure-processing-property-performance-characterization. From this point, explores crystal structure, symmetry and defects. After which, introduces fundamental theory of diffusion, kinetic and phase transformation and gives examples of their impact on the material. Next, presents the correlation between structure-processing-property on performance. Throughout the course, exposes concepts of materials characterization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students; Credit is allowed for only MSE 503 or MSE 598 (Concepts in Materials Science)
MSE	510	Intro to Materials Characteriz	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 450 or 510
MSE	511	Math and Comp Methods Material	Mathematical, computational and statistical methods and computer programming used to model materials science phenomena and materials engineering applications. Prior completion of undergraduate-level calculus, differential equations, and linear algebra needed for success in the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 415 or MSE 511 or MSE 598 (Mathematical and Computer Methods in Materials)

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MSE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MSE	514	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MSE 420 or MSE 514
MSE	515	Electronc,Magnetc,Optical Prop	Electrical, optical and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 458 or MSE 515
MSE	516	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 440 or MSE 516
MSE	517	Introduction to Ceramics	Principles of structure, property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering OR Science and Engineering of Materials student
MSE	519	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 476 or 519
MSE	523	Structural&Mech Prop of Matris	Designed for first-year PhD students in the School of Materials. Topics include crystallography theory, tensor properties of materials, elasticity, crystal defects, dislocation theory, plasticity, fracture, fatigue, and creep.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	524	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHM 541 or MSE 524
MSE	525	Fund of Mat Elec/Opt/Mag/Therm	Behavior of materials; electronic band structure, electronic and ionic conduction, electronic processes in semiconductors, dielectric, optical and magnetic properties. Emphasizes the fundamental understanding of material properties while establishing structure-property relations. Aims to link these properties to applications in optoelectronics, photonics and optics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
MSE	526	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 526 or NAN 511 or PHY 511
MSE	527	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
MSE	540	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MSE 442, 494 (Fatigue, Fracture, Creep) or 540
MSE	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only NAN 546 or MSE 546 or PHY 546
MSE	548	Fund of Microelectronics Pack	Multidisciplinary course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Fulton Engineering student. Credit is allowed for only CHE 518 or EEE 518 or MAE 518 or MSE 475 or MSE 548
MSE	550	Adv Materials Characterization	Analytical instrumentation for characterization of materials; SEM, SIMS, Auger, analytical TEM, and other advanced research techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 552 or NAN 552 or PHY 552 or SEM 552
MSE	553	Electron Microscopy Lab I	Lab support for MSE 552.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553

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MSE	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent-beam diffraction, and electron holography. Novel developments and applications.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 554 or PHY 554
MSE	555	Electron Microscopy Lab II	Lab support for MSE 554.	N		LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
MSE	560	Nanomtlis in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major; Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
MSE	561	Kinetics&Phase Trans in Solids	Hetero/homogeneous diffusion-controlled transformations, order-disorder transformations, and shear (martensitic) athermal transformations in solids. Courses in advanced thermodynamics and structure and properties of materials are strongly recommended in preparation for this course.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	566	Electrochemical Energy Storage	Electrochemical concepts relevant to real-world devices. Discusses basic electrochemical principles with an emphasis on solid-state electrochemistry and the nature of the solid-electrolyte interface in order to give students the background knowledge needed for understanding and analyzing real device performance of, e.g., batteries, solar hydrogen generation, photoelectrochemical cells, electrocatalysts, electrochemical capacitors, fuel cells. Critically evaluates media reports and journal publications describing electrochemical energy conversion and storage devices.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Scie, Chem Engineering, Mech Engineering, Chem or Physics graduate stdnt; Credit for only CHE 494, CHE 598, MAE 494, MAE 598, MSE 494, MSE 598, or NAN 598 (Electrochemistry Energy Conversion & Storage) or MSE 466 or MSE 566
MSE	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 571 or NAN 571 or PHY 571
MSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Prerequisite(s): Fulton Engineering graduate student
MSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student

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MSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student
MSI	601	Cont Topics in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from the arts and other disciplines that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	602	Curr Issues in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from current public policies, events, and popular culture that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	755	Historical Research in Music	Required for all PhD in Music students. Knowledge and insights related to conducting historical research in music. Includes development of a mini-proposal for a dissertation on the history of music education, or draft of a historical research paper suitable for presentation or publication.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music students
MTC	123	Beginning Composition	Intended for freshmen and sophomores in the composition concentration. Introduces composing. May be repeated for credit.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theory and Composition (Composition) BMUS major OR Visiting University Student
MTC	125	Basic Music Theory	Notation, scales, keys, modes, intervals, chords, basic part writing and composition. Development of related aural skills through sight-singing and dictation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Digital Culture (Music) major, Music major, Performance and Movement major, Music Performance minor, or Music Theatre minor OR Visiting University Student
MTC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	221	Music Theory: 18th Century	Styles, techniques, and idioms of 18th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 125 with C or better
MTC	222	Music Theory: 19th Century	Styles, techniques, and idioms of 19th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 221 with C or better OR Visiting University Student
MTC	223	Music Theory: 20th Century	Styles, techniques, and idioms of 20th-century music; emphasizes innovative treatments of musical elements, analysis, and composition; related aural skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better
MTC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	320	Modal Counterpoint	Counterpoint based on 16th-century vocal polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better
MTC	321	Tonal Counterpoint	Counterpoint based on 18th-century polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better
MTC	323	Composition	Writing music compositions, with emphasis on basic techniques and smaller structures. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): MTC 123 with C or better OR BMUS Theory and Composition (Composition) or BMUS Theory and Composition (Theory) major with minimum 55 hours OR Visiting University Student
MTC	327	Intermediate Form and Analysis	Organizing elements in the most important contrapuntal and homophonic musical forms from the Renaissance through the 19th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better OR Visiting University Student
MTC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	415	Scoring for Jazz Ensembles I	Analyzes scores and recordings, application of orchestration and four and five-part harmonization techniques frequently used in arranging for the contemporary jazz ensembles and studio orchestra.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major who has passed audition; MUP 236 with C or better
MTC	416	Scoring for Jazz Ensembles II	Analyzes scores and recordings, application and creation of new arrangements for contemporary jazz ensembles and/or studio orchestra.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major who has passed audition; MTC 415 (MTC 315) with C or better
MTC	422	Musical Acoustics	Properties of sound and tone. Harmonic series, instruments, the ear, auditorium acoustics, and the reproduction of sound. Assumes a thorough knowledge of musical notation, intervals, scales, and harmony, or 2 years of music theory.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; Passed audition

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MTC	425	Studies in 20th-Century Theory	Continued development of analytical techniques and aural skill, with an examination of theoretical systems applicable to 20th-century music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 223 with C or better OR Visiting University Student
MTC	428	Advanced Form and Analysis	Organizing principles of the large forms of musical composition in the 19th and 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; MTC 223 with C or better
MTC	429	Canon and Fugue	Writing of canons and fugues in tonal style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 321 with C or better
MTC	430	20th-Century Counterpoint	Counterpoint studies utilizing 20th-century idioms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 223 with C or better
MTC	433	Orchestration	Studies scoring music for full and chamber orchestras; examines individual orchestral instruments (characteristics and performance techniques). Requires a working knowledge of a computer music notation program.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major
MTC	436	Electronic Studio Techniques I	The study of computer music systems emphasizing advanced audio synthesis and resynthesis as well as their application to professional compositional environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Digital Culture (Music) major or MTC 223 OR Visiting University Student
MTC	437	Elec Studio Techniques II	Principles of digital electronic music systems and their applications in the composition of electronic music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	440	Jazz Theory and Ear Training	Advanced study of jazz harmonic systems. Daily oral drills.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	441	Jazz Composition	Creative writing in the smaller forms and in the idiom of jazz.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music student; MTC 440; MUP 236 with C or better
MTC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MTC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MTC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	495	Final Project	Half recital of compositions or approval of a large-scale composition or a research paper.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		
MTC	496	Theory Project	Supervised individual writing project dealing with music theory.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MTC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MTC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	516	Baroque Music	Detailed analysis of selected examples of music from the Baroque period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	517	Classic Music	Detailed analysis of selected examples of music from the Classic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	518	Romantic Music	Detailed analysis of selected examples of music from the Romantic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	519	Late 19th-Early 20th Cen Music	Detailed analysis of selected examples of music from the late 19th and early 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	520	Analytical Techniques	Analytical techniques systematically applied to music. Concentration on structural and compositional procedures.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	523	Advanced Composition	Advanced music composition, including complex techniques and larger structure. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Pre-requisite: Graduate Music student
MTC	525	Pedagogy of Theory	Practices and principles of teaching music theory. Emphasizes most desirable and practical offerings possible. Comparative studies of existing practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	535	Rhythm and Meter Studies	Exposes students to seminal research in rhythm and meter studies with the aim of introducing a range of methodologies and common issues found in this area of research. Reading assignments include music theory and music cognition literature relating to questions of rhythm and meter in diverse repertoires, including classical, post-tonal, world, and popular music genres. Students reflect on the strengths and weaknesses of various approaches, analytical techniques, and the implications that theories of rhythm and meter have for performance practice and write and present a final research paper on a topic relating to rhythm and meter studies.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MTC 535 or MTC 591 (Survey of Rhythm and Meter Studies)
MTC	540	Jazz Theory and Ear Training	Surveys some of the most influential trends in the jazz tradition with in-depth analysis of harmonic systems, linear elements, and compositional strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student

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MTC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Pre-requisite: Graduate Music student
MTC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	723	Advanced Composition	Special problems in writing in complex forms and textures.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music student
MTC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MTC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTE	210	Mentored Tutoring Internship	Introduces math education students to issues of balancing the content of precalculus mathematics with the needs of someone learning it. Addresses core issues, including articulating what is involved in learning the mathematical idea(s); interpreting students' questions; analyzing student thinking and inferring their underlying rationale from a learner-centered perspective; techniques of question-posing, problem-posing, and instructional scaffolding.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Co-requisite: MAT 207
MTE	250	Tech and Math Vizualization	Uses several software packages for exploring mathematics and for preparing mathematical materials, starting from introductory skills and leading to advanced techniques. Places particular emphasis on using computer software with the aim of visualizing mathematical relationships, structures, and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MAT 270 with C or better; MTE 210 with C or better OR Visiting University Student
MTE	280	Numb Oper&Prop Reas K-8 Teach	Investigation of mathematical principles and processes regarding the real number system and its properties develop number sense and qualitative reasoning abilities. Designed to meet the requirements for preservice elementary school teachers.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student
MTE	281	Inves Space: Geom, Meas & Vis	Explores three aspects of geometry: spatial visualization, measurement, and proof. Uses visualization, spatial reasoning, and geometric modeling to solve problems. Provides opportunities for participants (1) to use physical models, technology, and pattern-finding strategies to identify properties of and develop formulas for measuring two- and three-dimensional shapes; and (2) to develop powerful ways of thinking to justify geometric relationships	N	PRA	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student
MTE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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MTE	301	Invst Chng Ptn, Func & Model	Examines different conceptions of algebra as the study of (1) generalized arithmetic, (2) reasoning with symbols, (3) reasoning with patterns and functions, (4) structure in the number system, and (5) modeling. Distinguishes arithmetic from algebraic reasoning, and develops an appreciation for the pervasiveness of the function concept in the K-8 school mathematics curriculum. Features algebraic thinking and representation using algebra tiles and other concrete models, realistic problems, dynamic geometry software, graphing calculators, and a variety of virtual tools and Web sites. Topics include, but are not limited to: patterns, relations, functions and covariational thinking; multiple conceptions of quantity, variables, constants, and unknowns; inductive, deductive, and analogical reasoning; rate of change and proportional thinking; algebra learning trajectories; and comparisons of additive vs. multiplicative, absolute vs. relational, and arithmetic vs. algebraic thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MTE	310	Nbr Spatial MeasureData ErlyCh	Focuses on key concepts in counting, number operations, spatial relations, measurement and data in early childhood education. Prospective teachers acquire content knowledge by using physical models, technology and pattern-finding strategies to explore the progressions of these concepts from birth to grade 3.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MAT 117 or 142 or higher; MTE 280 OR Visiting University Student
MTE	311	Geom, Alg, Stats & Prob K-8	Focuses on key concepts needed to prepare K-8 teacher candidates to teach in algebra, geometry, measurement, data, probability and statistics. Prospective teachers will (1) use physical models, technology, and pattern-finding strategies to explore the trajectories of these concepts; and (2) develop strategies to predict, generalize, and justify decisions based on data, statistics and probability.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MTE 280 OR Visiting University Student
MTE	320	Fnd of 7-12 Math Curr Assess	Focuses on concepts of mathematics curricula and their relationships to perspectives on learning, instruction, and assessment. Using a variety of participation formats (e.g., individual and small group work, and whole group discussions) and directed activities, participants examine curricular principles underlying the historical development of mathematics curricula and assessment, and current curricula and curricular recommendations and controversies surrounding them.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MTE 210 with C or better; MTE 250 with C or better
MTE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
MTE	430	Dvpmnt of Mathematical Thinking	This capstone course requires students' sustained engagement with, and analysis of, artifacts from research on learning mathematics from instruction. The artifacts include: curricular/instructional task sequences, samples of student work, video-cases showcasing students' involvement in instruction, problem-solving interviews, and teaching experiments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 320 with C or better OR Visiting University Student
MTE	482	Mthds Teaching Math Sec School	Examines secondary school curricular material and analyzes instructional devices. Teaching strategies, evaluative techniques, diagnosis, and remediation and problem solving.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MAT 310 with C or better; admission to the Professional Program
MTE	483	Mathematics-Secondary School	Topics in geometry, number theory, algebra, and analysis. Emphasizes unifying principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 310 with C or better
MTE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	485	Teaching Standards-Based Math	Course for secondary mathematics students at rural campuses. Offers a detailed exploration of the Arizona Mathematics Standards (AMS) for middle school and high school. In addition to an in-depth coverage of the AMS content and practices, students engage with, review and analyze existing instructional task sequences addressing the AMS. Students also design and construct partial and complete lesson plans to cover specific mathematical content and practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MAT 271 or minimum 45 hours
MTE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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MTE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MTE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
MTE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
MTE	501	RUME I	Research in Undergraduate Mathematics Education I (RUME I) covers academic research in (undergraduate) mathematics education. Develops the ability to read, discuss, criticize and draw practical conclusions from research in (undergraduate) mathematics education, all with the overarching aim of broadening perspective on areas of past and current mathematics education research. Research on the learning and teaching of undergraduate mathematics is one of the foci of the course. Students read research literature drawn from a variety of content areas and grade bands: quantitative reasoning, early learning of algebra, proportional reasoning, algebra and functions, calculus, statistics and probability. Prepares for Part 1 of the qualifying exam in mathematics education	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MTE 501 or MTE 598 (Research in Undergraduate Mathematics I)
MTE	502	RUME II	RUME II is the second course in a core four-course sequence in the mathematics education doctoral program. Explores research on problems in the teaching and learning of algebra, geometry, calculus and probability as seen from multiple theoretical perspectives. Develops ability to read, discuss, criticize and draw practical conclusions from research in mathematics education, all with the overarching aim of broadening perspectives on areas of past and current mathematics education research. RUME II builds on its prerequisite in a subtle but important way. Increased emphasis and focus on theory in mathematics education research—a consideration of various types of theories and the roles they may play in the research endeavor. Also prepares for the required qualifying exam	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 501; Credit is allowed for only MTE 502 or MTE 598 (Research in Undergraduate Mathematics II)
MTE	503	RUME III	RUME III is the third course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students learn different methods for implementing data collection and analysis, reporting results; and continue to conduct a pilot study with the goal of developing a dissertation proposal from their research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 502; Credit is allowed for only MTE 503 or MTE 598 (Research in Undergraduate Mathematics III)
MTE	504	RUME IV	RUME IV is the fourth and final course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students continue to conduct a pilot study with the goal of developing a dissertation proposal from their research. Continues developing the student's ability to: synthesize research literature in a specific area of mathematics education, refine research statement and question(s) to advance knowledge in a specific area of mathematics education, refine design and methods for conducting a study, analyze research data using theoretical constructs, describe results of analysis, report findings using theoretical constructs and submit a paper for publication.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 503; Credit is allowed for only MTE 504 or MTE 598 (Research in Undergraduate Mathematics IV)
MTE	585	Modern Geometry for Teachers	Euclidean, projective, and non-Euclidean geometries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MTE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		

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MTE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MTE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MTE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MUD	521	Adv Urban Design Studio I	Explores urban design with emphasis on the nexus of urban systems and the significance ecology plays in the design process. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Urban Design MUD student; Credit is allowed for only MUD 521 or MUD 590 (Advanced Urban Design Studio I)
MUD	522	Adv Urban Design Studio II	Explores urban design with emphasis on urban design and human health. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): MUD 521 with C or better; Credit is allowed for only MUD 522 or MUD 590 (Advanced Urban Design Studio II)
MUD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		

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MUD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
MUD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUE	101	ASU School of Music Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university, the School of Music and the Herberger Institute for Design and the Arts. Covers the music education and music therapy programs in the School of Music.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUE 101 or MUE 194 (ASU School of Music Experience for Music Education) OR Visiting University Student
MUE	110	Introduction Music Education	Overview of music education and career options. Orientation to student characteristics, teacher roles, teaching qualities, and philosophical and historical foundations. Requires school observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major
MUE	154	Gesture and Sound	Covers fundamentals of musical leadership through gestures associated with sounds in the performance of music.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUE	161	Introduction to Music Therapy	Overview of the profession of music therapy and its applications in mental health, rehabilitation, and special education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	162	Intro to Music Therapy Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Education or Music Therapy major; Corequisite(s): MUE 161 OR Visiting University Student
MUE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	211	Music in Recreation	Materials, methods, and organizational structures appropriate for recreational music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	260	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major
MUE	261	Music Therapy Treatment	Orientation to preclinical experience with emphasis on observation skills, assessment, goal setting, and professional ethics. Requires off-campus observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MUE 161 with C or better
MUE	262	Mus Therapy Behav Science Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Corequisite(s): MUE 261
MUE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		

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MUE	310	Music in Early Childhood	Examines music through the lens of the culture(s) of young children, which (though they intersect with adult cultures) are unique, different from adult experiences, and particular to them. Emphasizes the musical content of children's songs as well as the music they hear, and the kinds of musical engagements that are particular to young children. Also emphasizes the uses, functions, and meanings of music for children.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102 with C or better; minimum 30 hours
MUE	311	Music for Children and Youth	Examines the role of music in the lives of young people with particular attention to child and youth learning and development (cognitive, social, emotional, personal/identity, musical). Includes examination and critique of music intended for children and youth (e.g., social and gendered meanings), as well as consideration of how music is related to individual and social identity.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): BLE 220, RDG 291, SPE 222 or TEL 215, or minimum 30 hours OR Visiting University Student
MUE	317	Strings Lab	Students apply educational theory to the development and refinement of specialized skills in string teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	319	Digital and Hybrid Lab	Provides a foundation for integrating a range of technologies and digital media in music teaching and learning. Encourages critical and creative thinking while considering the possibilities for innovative applications of technology and digital media based upon contemporary curricular, theoretical and pedagogical frameworks. Students demonstrate skills and understanding related to using technology and digital media in the context of musicianship, music teaching and learning.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUE	321	Jazz Lab	Jazz rehearsal and performance techniques and repertoire appropriate for rehearsing jazz ensembles in K-12 schools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 321 or MUE 394 (Jazz Lab)
MUE	323	Keyboard Lab	Piano keyboard skills appropriate for music educators.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 132 with C or better; minimum 45 hours; Credit is allowed for only MUE 323 or MUE 394 (Keyboard Lab) OR Visiting University Student
MUE	325	Voice/Choral Lab	Skills for developing voices and rehearsing choral ensembles.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 110; Credit is allowed for only MUE 325 or MUE 394 (Voice/Choral Lab) OR Visiting University Student
MUE	327	Brass Lab	Students apply educational theory to the development and refinement of specialized skills in brass teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	334	Guitar Lab	Guitar skills for teaching guitar classes in K-12 schools.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 334 or MUE 394 (Guitar Lab) OR Visiting University Student
MUE	335	Educational Methods for Guitar	Students apply educational theory to the development and refinement of specialized skills in guitar teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music major; Passed music education or therapy interview
MUE	336	Percussion Lab	Students apply educational theory to the development and refinement of specialized skills in percussion teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	337	Woodwinds Lab	Students apply educational theory to the development and refinement of specialized skills in woodwind teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	381	Music Therapy Research	Statistics and research design appropriate for investigations in music therapy.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Music Therapy student; ENG 101, 105, or 107 with C or better OR Visiting University Student
MUE	384	Therapy Practicum I	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	385	Therapy Practicum II	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	386	Therapy Practicum III	Individual placement in ASU Music Therapy Clinic.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	387	Therapy Practicum IV	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	388	Therapy Practicum V	Individual clinical work in a community mental health facility.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisites: Music Education or Music Therapy student

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MUE	413	Art of Teaching Children Music	Methods of instruction, planning, and presentation of appropriate contents in music. For music educators and music therapists.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music student OR Visiting University Student
MUE	415	Teaching Contemporary Musician	Curriculum, student characteristics, and teaching strategies for general music.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major OR Visiting University Student
MUE	434	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation) OR Visiting University Student
MUE	436	Perc Methods Music Therapy	Provides knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy student
MUE	441	Psychology of Music	Psychological and physiological aspects of music emphasizing musical behavior, function, perception, and learning.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUE	463	Music Therapy Theory & Prac II	Organization, administration, and use of music in rehabilitation with various client populations.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy student; MUE 467 with C or better
MUE	465	Child Music for Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy student; Minimum Junior standing
MUE	467	Music Therapy Theory & Prac I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy major; MUE 261 with C or better OR Visiting University Student
MUE	475	Group Process/Music Therapy	Principles of group process, verbal counseling, professional writing, as related to music therapy practice.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music Therapy student; MUE 463 (MUE 362) with C or better or Graduate student in Clinical Music Therapy OR Visiting University Student
MUE	476	Internship in Music Therapy	Full-time, 6-month, off-campus residency in an approved clinical institution.	N		PRA	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major
MUE	480	Teaching Choral Musicians	Methods of instruction, organization, and presentation of appropriate content in choral music classes.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	481	Teaching Beg Instrumentalists	Instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	482	Teaching Adv Instrumentalists	Advanced instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Pre-requisite: Music major with passed audition; minimum 55 hours
MUE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MUE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MUE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUE	501	Intro to Music Therapy	Introduces the profession of music therapy through lecture, active discussion, and observations of clinical sessions. Experiential learning is achieved through music making in peer groups.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	534	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation)
MUE	536	Perc Methods Music Therapy	Designed to provide knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM Student
MUE	548	Intro to Research in Music Ed	Survey of research methods and literature in music education. Focuses on interpretation and evaluation.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student

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MUE	549	Foundations of Music Education	A treatment of historical perspectives, philosophy-aesthetics identified with music education, and learning theories applied to music teaching/learning. Basic research and writing skills appropriate to graduate studies in music education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	550	Studies in Music Curricula	Scope and sequence of musical experiences. Develops criteria for the evaluation of music curricula.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	551	Listening and Creating	Studies the nature of music listening and music creating and their relationship. Reviews research and pedagogical practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MUE	555	String Pedagogy & Reh Techs	String pedagogy and orchestral rehearsal skills for teachers who work with K-12 string classes.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MUE 555 or MUE 598 (String Pedagogy and Rehearsal Techniques)
MUE	559	Social/Cult Studies in Mus Ed	Considers how music education is shaped by social and cultural concepts.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Music student; Credit is allowed for only MUE 559 or MUE 598 (Social and Cultural Studies in Music Ed)
MUE	560	Jazz Pedagogy	Study of pedagogy, repertoire, and technique of instruction in jazz styles, ensemble techniques, and performance practice for school ensembles.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	563	Theory and Prac in MT II	Organization, administration, and use of music in rehabilitation with children and adolescents with special needs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM major; MUE 581 with C or better
MUE	564	Instr Music/Adv Rehearsal Tech	In-depth analysis of instrumental techniques in preparation for a thorough discussion of band tuning problems and solutions. Discussion of productive conducting and rehearsal techniques for school music teachers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	565	Children's Music Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy Graduate student
MUE	566	Instr Lit&Pedagogy for Schools	Provides an in-depth examination of ensemble music and teaching techniques to instrumental music teachers.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	567	Professional Practicum	Students provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): graduate Music Therapy student
MUE	568	Choral Music/Ad Rehearsal Tech	Musical and vocal techniques necessary for presentation of choral literature. Analysis and experimentation with psychological, acoustical, and other problems of rehearsal and performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	569	Professional Practicum II	Students continue to provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy graduate student; MUE 567 with C or better
MUE	570	Choral Literature for Schools	Comprehensive study and analysis of choral music for the high school with special emphasis on octavo literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	571	Music Therapy Sem I: Supr & Ad	Covers health care administrative skills pertinent to music therapy practice, including budgeting, resource allocation, and staff supervision.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student
MUE	572	Music Therapy Seminar II	Deepens and broadens knowledge and skills in music therapy clinical practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUE	573	Music Therapy Seminar III/Lab	Explores current theory in music therapy and develops the theoretical basis for the profession.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Music Therapy MM student
MUE	574	Special Topics in Mus. Therapy	Introduces graduate students to advanced music therapy topics related to clinical practice.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM student
MUE	575	Music Therapy Music Skills	Teaches new forms of musical accompaniment pertinent to music therapy practice, broadening and deepening existing skills.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM student
MUE	579	Psychology of Music	Nature of musicality and its evaluation. Review of recent research.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	581	Theory and Prac in MT I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	586	Music Therapy Grad Clinical Pr	Develops clinical- and research-based music therapy skills in selected cognate area.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-6		Pre-requisites: MUE 571, 572, 574, and 575
MUE	589	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music Therapy MM Student

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MUE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student
MUE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	754	Teacher Ed Research Policy	Reading and discussion of research and policy documents in teacher education with a focus on arts and music teacher preparation. Includes development of a research project or essay suitable for publication or presentation, an abbreviated prospectus for a dissertation, or literature review.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	756	Qual Research Music Teaching	Studies qualitative research and methods in music education, including readings and discussion, data collection and data analysis. Includes development of an abbreviated prospectus for a qualitative dissertation, or a draft of a qualitative research paper suitable for presentation or publication. Prerequisite: doctoral student in music education.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	757	Quant Research in Music Teach	Studies quantitative research and methods in music education, including readings and discussion, data collection, and analysis. Includes development of an abbreviated prospectus for a quantitative dissertation or a draft of a quantitative research paper suitable for presentation or publication.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): doctoral Music student
MUE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUP	101	ASU School of Music Experience	Orientation to university and School of Music resources and procedures as well as career planning and guidance. Through various course discussions and assignments, music students examine the concept of academic integrity and its potential impact on their future and learn about taking an interdisciplinary perspective. Required for all music majors.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUP 101 or MUP 194 (ASU School of Music Experience)

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MUP	111	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	117	Applied Jazz Improvisation	Principles, methods, and theory of jazz performance and pedagogy.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major who has passed a jazz studies audition
MUP	121	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Performance minor or Music Theatre minor who has passed audition, or Performance and Movement major
MUP	127	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	131	Class Piano	4-semester sequence (with MUP 132, 231, and 232) designed for those with little or no piano experience. Emphasizes keyboard technique, sight reading, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	132	Class Piano	4-semester sequence designed for those with little or no piano experience. Emphasizes keyboard technique, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP 131 with C or better
MUP	133	Class Voice	4-semester sequence (with MUP 134, 233, and 234) open to all students. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	134	Class Voice	See MUP 133.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	170	Music Theatre I	Develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUP	172	Music Theatre II	Further develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 170
MUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	209	Beginning Choral Conducting	Essentials of choral conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	210	Begin Instrumental Conducting	Essentials of instrumental conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	217	Applied Jazz Improvisation	Emphasizes basic jazz literature, chord symbol reading, melodic patterns and concepts, ear training, analysis of improvised solos, and pedagogical issues.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 117 with C or better OR Visiting University Student
MUP	231	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP132 with C or better
MUP	232	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP231 with C or better
MUP	235	Jazz Piano	2-semester sequence (with MUP 236) designed for jazz keyboard experience. Emphasizes chord symbol reading, simple improvisation, and voicing. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	236	Jazz Piano	See MUP 235.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition

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MUP	250	Diction for Singers	Use of phonetics in the study of song and opera literature. Language emphasis differs each semester. May be repeated for credit.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	270	Music Theatre III	Develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 172 OR Visiting University Student
MUP	272	Music Theatre IV	Further develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 270
MUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	311	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	319	Adv Audio Engineering - Arts	Synthesis and application of analog and digital recording methods (voices and instruments), mixing and the advanced skills needed to create professional recordings (CDs, DVDs, internet sound files, etc.). Further emphasis on electronic music production, computer based applications, MIDI, and contemporary studio hardware.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Minimum Junior standing in the Herberger Institute for Design in the Arts
MUP	321	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	327	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May be repeated for credit. May not be taken for audit.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	337	Studio Instr: Collaborat Piano	Repertoire to be selected from vocal and instrumental literature. 1 hour lesson per week. May be repeated for credit.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	340	Intermediate Conducting	Further study in conducting of instrumental and choral music, including score reading, gesture and interpretation.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 154 or MUP 210 with C or better
MUP	360	Musicianship for Singers	Covers reading in the treble and bass clefs (other clefs may be covered time permitting), conducting, intervallic patterns, harmonic outlining, rhythm, dictation, sight reading melodies, musical preparation of repertoire, score scanning and score marking. Additional topics may be addressed as specific student skills and goals are assessed. Assignments are sung and drilled with movable do solfeggio and the takadimi rhythm solmization system. All of the repertoire studied and performed are vocal literature, including: art song, opera, oratorio, musical theatre, jazz, popular.	N		LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition; Credit is allowed for only MUP 360 or MUP 394 (Musicianship for Singers)
MUP	370	Music Theatre V	Interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of several historical and contemporary music styles in musical theatre, applying best practices for research, solo and ensemble performance.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major or Music Theatre minor who has passed audition; MUP 272 with C or better
MUP	373	Music Theatre Perfmrce & Prod	Participation in music theatre and opera productions, including auditioning for productions, adhering to departmental policies and completing assigned technical hours.	Y		STO	Y	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition

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MUP	374	Music Theatre Tech Production	In-depth study of approaches to technical music theatre. Classroom study of costumes, sets and lighting (Section 1 Topic: Foundations) is followed by practical experience on a technical running crew for a music theatre and opera production (Section 2 Topic: Practicum). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition
MUP	388	Collaborative Piano	Performance class for collaborative piano majors. Repertoire includes vocal and instrumental selections. Advanced analysis of ensemble techniques, style and performance practice in preparation for graduate study or professional application.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): 4 completions of MUP 127 with C or better OR Visiting University Student
MUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUP	417	Applied Jazz Improvisation	Emphasizes listening, analysis, and performance of advanced jazz literature and composition in contemporary styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 217; Music student who has passed audition
MUP	438	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major; The Arts BA major, or Music Entrepreneurship certificate; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician) OR Visiting University Student
MUP	439	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 or MUP 438 or 494 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 494 (Music Product Creation and Development) or MUP 539
MUP	440	Keyboard Harmony	Performance-oriented class emphasizing chord progressions, harmonization, figured bass realization, stylistic improvisation, transposition, open score reading, and sight reading.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	441	Popular Music Ensemble	Focuses on one or several popular music styles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition
MUP	442	Instrumental Ensembles	Students enhances musical diversity and artistic depth by participating in numerous ensembles as well as other artistic and educational projects. Each project focuses on specific pedagogical and/or musical learning outcomes. Together they comprise a rich assortment of musical experiences and promote the primary course objective. The curriculum accommodates the distinctive needs of each student and is tailor-made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	443	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality. This ensemble is available to both music majors and non-majors, and may require an audition.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	444	Concert Winds	Open to all ASU students. Composed of students who are music majors, as well as those pursuing other fields of study, the group rehearses and performs mainly traditional band literature, giving one or two major performances per semester. Students must audition with the band staff for seating placement.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed an audition

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MUP	448	Classical Style: Perform/Analy	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 448 or 494 (Classical Style: Performance and Analysis)
MUP	449	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 449 or 494 (Unaccompanied Bach: Performance & Analysis)
MUP	450	Choral Union	Large mixed ensemble focuses on the study, synthesis and performance of major choral masterworks while gaining in-depth understanding of significant choral repertoire and historical ramifications. This ensemble is available to both music majors and non-majors, and may require an audition.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	451	Repertoire	In-depth study of music for performing, involving advanced interpretive and technical concepts from historical, stylistic, and performance-related perspectives.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Completed 4 semesters of 100-level studio instruction
MUP	453	Art Song Repertoire	A survey of repertoire for one voice and piano beginning with Haydn and continuing through the present day. Focuses on the core Art Song Repertoire of Germany and France, but also explores a variety of composers, eras and regions, including Italy, Spain, England and America.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	454	Song Literature	American, Russian, Spanish, Scandinavian, and contemporary song.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	455	Arizona Statesmen	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of a variety of historically and musically standard male repertoire, within historical context. This ensemble is available to both music majors and non-majors, and may require an audition.	N		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	457	Sol Singers	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of historically and musically important repertoire for treble voices. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or non-Music major who has passed audition
MUP	458	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): undergraduate music major or nonmajor by audition
MUP	459	Barrett Choir	The Barrett Choir is an opportunity for students from all over the university, but primarily from Barrett, The Honors College, to participate in a high-quality choral ensemble. The group seeks to harness the creativity and intellect of honors students to create a collaborative ensemble that operates on a unique model of student-centered learning. The repertory, mostly chosen by the members, is highly varied, ranging from world music to pieces in the great choral tradition to newer music and popular music. There are normally two major concerts per semester, with some occasional smaller performances. This ensemble is available to both music majors and non-majors, and may require an audition.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	460	Visiting Quartet Residency	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N		STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Music major (bass, cello, viola, violin) who has passed audition
MUP	461	Marching and Athletic Bands	Development of specific professional performing skills through staging of formations and drills for football games and other events. Explores a wide variety of musical repertoire from current top 40 hits to classical. These ensembles are available to both music majors and nonmajors, and may require an audition.	Y		STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or nonmajor who has passed an audition
MUP	465	Music Theatre VI	Further interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of historical and contemporary styles in musical theatre, applying best practices for research, solo and ensemble performance.	N		STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 370

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MUP	466	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): two completions of MUP 467 OR Visiting University Student
MUP	467	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester students focus on the individual dancer, spatial awareness, development of character and intention. The second semester students work on basic partnering skills and partner dances. Intended to be a full-year course.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Performance (Music Theatre) major, or Music Theatre minor who has passed audition
MUP	470	Music Theatre VII	Development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 465; Credit is allowed for only MUP 470 or MUP 494 (Musical Theatre Dance) or MUP 566 OR Visiting University Student
MUP	471	Music Theatre: Workshops	The development of specific skills for musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Performance (Music Theatre) or Performance (Voice) major; minimum 45 hours
MUP	472	Music Theatre VIII	Further development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 470
MUP	476	New Music Ensemble	In-depth study, synthesis, and performance of classical works written within the last twenty years for small ensemble and for instruments with electronics. Involves discussion and realization of advanced interpretive and technical concepts related to contemporary music.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	479	Chamber Music Ensembles	Faculty-coached ensembles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	481	Performance-Pedagogy/Materials	Principles and methods of performance techniques for each performance field. May be repeated for credit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music students who have passed audition
MUP	482	Piano Pedagogy	Continuation of MUP 481 (Piano). Problems and techniques of teaching intermediate to advanced piano students.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	485	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	486	Jazz Band	Analysis, rehearsal and performance of new, traditional, and Latin literature for jazz ensembles. Development of advanced sight-reading and instrumental doubling skills. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUP	487	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week. May not be taken for audit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	489	Ethnomusicology Ensembles	Students apply indigenous music theories to actual practice, contextualized in background reading and listening, as they refine their ability to perform orally generated music and sometimes dance traditions. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
MUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Music students who have passed audition
MUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors Music students who have passed audition; ENG 101, 105, or 107 with C or better
MUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUP	495	Performance	For candidates of a BM degree in which 1/2 recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition

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MUP	496	Performance	For candidates of a BM degree in which a full recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	503	Literature for Teaching Voice	Equips students with knowledge of repertoire for teaching applied voice, and to cultivate skills in mindfully assigning said repertoire. Topics and activities include learning about the types of repertoire across many styles, pedagogical implications of repertoire, benefits and pitfalls in assigning repertoire to the developing singer, and assignment of repertoire to true and hypothetical students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	504	Voice Teaching Practicum	Provides opportunities to develop practical teaching skills through experiential learning for voice and/or music education graduate students who have a strong interest in teaching applied voice lessons. Topics and activities include teaching, teaching observations, guided teaching activities, and the creation of a teaching portfolio.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	507	Group Piano Practicum	Curricula, materials, and teaching techniques for group teaching at the university and community college levels. Observation/supervised teaching in group piano.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	508	Studio Observation	Weekly observation of studio teaching by various piano faculty. Paper as final requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	509	Jazz Keyboard Harmony	Emphasizes jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	510	Jazz Keyboard Harmony	Continuation of emphasis on jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	511	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student who has passed audition
MUP	517	Advanced Improvisation	Improvisation techniques within the context of advanced jazz literature. Must be taken in sequence with MUP 518.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	521	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	527	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour per week. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music graduate student who has passed audition
MUP	538	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Herberger Institute student; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician)
MUP	539	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUP 538 or 598 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 539 or MUP 598 (Music Product Creation and Development)
MUP	540	Princ of Integrated Conducting	Score preparation and conducting techniques for instrumental music. Concentration on study of historical styles. Required of DMA students in Instrumental Music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DMA Conducting major

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MUP	541	Song	Seminar on solo song from its beginning to the present day.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	542	Instrumental Ensembles	Students participate in numerous ensembles and artistic and educational projects that together, comprise a rich assortment of musical experiences. Graduate students especially need opportunities to hone their skills in a great variety of performance opportunities. During the academic year, each student participates in a variety of projects that present a wide range of musical experiences. The curriculum is designed to accommodate the distinctive needs of each student in that artistic-educational experiences are, to a large extent, tailor made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven, rather than institutionally convenient. Each artistic-educational project focuses on specific pedagogical and/or musical learning outcomes that, in various ways, promote the primary course objective: the enhancement of musical diversity and artistic depth in every student. Audition required during the first week of classes.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music graduate student
MUP	543	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	548	Classical Style: Perf/Analysis	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 548 or 598 (Classical Style: Perf. & Anlys)
MUP	549	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 549 or 598 (Unaccomp Bach Perf & Analysis)
MUP	550	Choral Union	Open to all students in the university and to interested singers in the community by audition. Preparation and performance of the larger choral works. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	551	Repertoire	Literature available for performance in all performing media.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	554	Repertoire Score Study	Conducting course comprising a survey of significant repertoire (encompassing, over multiple semesters, literature from choral, musical theater/opera, orchestral, and wind band genres); an introduction to historical performance practice; and a range of score study techniques. Conducting majors are required to enroll each semester (or as advised) and, subsequently: display a comprehensive historical knowledge of the repertoire and development of ensembles over the past 500 years, demonstrate command of standard performance practices with respect to each historical era, and exhibit a clear understanding of varied methods of score study.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: DMA Conducting major
MUP	555	Arizona Statesmen	Rehearsal and performance of music for mixed voices. 3 hours per week. An audition is required to participate in the ensemble.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	557	Sol Singers	Rehearsal and performance of music for mixed voices. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	558	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student

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MUP	560	Visiting Quartet Residency Pro	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Graduate Music major who has passed audition
MUP	561	Marching and Concert Bands	Staging of formations and drills for football games and other events (fall); masterpieces of symphonic band literature (spring). Meets MWF. An audition may be required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	565	Acting and Movement	Process class with exercises specifically developed to assist the student actor to learn the fundamental techniques of acting with an emphasis on the actor's approach to characterization.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 565 or MUP 598 (Acting for Singers)
MUP	566	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 566 or MUP 598 (Musical Theatre: Dance)
MUP	567	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester focuses on the individual dancer, spatial awareness, development of character and intention. The second semester works on basic partnering skills and partner dances. Intended to be a full year.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student who has passed audition
MUP	570	Music Theatre: Techniques	Exercises and improvisations for the singing actor emphasizing body awareness, isolations, and freedom of the vocal and breath mechanisms.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	571	Music Theatre: Workshops	Develops specific skills for the musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	573	Music Theatre: Performance	Participation in Lyric Opera Theatre productions.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	574	Music Theatre Technical Prod	Introduces technical music theatre. Classroom study of costumes, sets and lighting (Section 1, Topic: Tech) followed by practical experience on a technical running crew for a Lyric Opera Theatre production (Section 2 Topic: Problems). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	576	New Music Ensemble	Rehearsal and performance of music written in the last 20 years.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	579	Chamber Music Ensembles	String, brass, woodwind, percussion, keyboard, vocal, and mixed ensembles. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	581	Performance Pedagogy/Materials	Principles and methods of performance techniques for each performance field.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	582	Anatomy & Physiology of Singing	Detailed study of the anatomy, physiology, neurology and acoustics of the singing voice.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music graduate student
MUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	585	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	586	Jazz Band	Rehearsal and performance of new, traditional, and Latin literature for jazz bands. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	587	Ethnomusicology Ensembles	Performance learning experience for the music of various cultures of the world.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	588	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition

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MUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	596	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	597	Solo Performance	See MUP 596.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	727	Studio Instruction	Minimum contact of 1 hour per week. May be repeated for credit. Conducting students register for 2 semester hours; all other students register for 4 semester hours.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Doctoral Music major who has passed audition
MUP	751	Seminar in Piano Literature	In-depth study of selected topics related to the standard piano literature. Requires research paper, bibliography, class presentation.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	796	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	N	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUS	100	Fundamentals of Music Notation	Provides nonmusic majors with sufficient symbol literacy to begin work in the field of musical learning. Credit not applicable toward any music degree.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUS	131	Bach to Bebop	Develops an understanding of the repertoire for the various musical instruments and ensembles throughout the five eras being studied and discernment through listening different genres of music. For the lectures regarding instruments, introduces students to the respective repertoire for the instrument from c. 1700-present with special emphasis on how the use of the instrument developed throughout history or during each era.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 131 or 194 (Performance: Bach to Bebop)

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MUS	145	Nonmajors Class Piano: Begin	For students with little or no previous music experience. Students learn beginning piano skills.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) OR Visiting University Student
MUS	146	Singing for Nonmajors I	Introduces the basics of singing in many styles, from classical to popular. Topics and activities include learning about the mechanics of singing, music reading, critical listening, learning and performing in a group, and learning and performing alone.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 146 or MUS 194 (Beginning Class Voice for Non-Majors)
MUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	210	The Arts Around Us	Develops the ability to think and create from an arts-rich perspective. In particular, focuses on the arts in the lives of children and youth, arts experiences for children and youth in the community, and one's personal experiences with the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 210 or 294 (The Arts Around Us)
MUS	211	Dance, Music and Meaning	Explores the fundamental nature of human experience across time and culture through the medium of dance and music using a variety of dance and musical materials including folk dance and music, popular dance and music, and such theatrical forms as ballet and modern dance and the music connected with them.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 211 or 294 (Dance, Music, and Meaning)
MUS	212	Music, Meaning and Imagination	Explores how music provides ways to make meaning of the world around us and music as a medium for creative thinking and doing. Develops understanding by trying on roles ranging from critics to creators in both individual and group projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 212 or 294 (Music, Meaning and Imagination)
MUS	213	Critical Thinking in the Arts	Fosters critical thinking abilities in relationship to performing and visual arts. Students learn how to listen to music and view art analytically. Develops and applies knowledge of common elements (within and across art forms) such as form, texture, balance and contrast in order to enhance understanding both of arts processes and products.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	214	Art, Music and Learning	Offers an integrated introduction to, and examination of, the core structural and formal elements of visual art and music in the context of contemporary experiences and learning process.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	215	Children, Creativity, Arts	Interdisciplinary exploration of children's creative processes through critical analysis, hands-on participation and personal reflection. Specifically focuses on creative processes in the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	231	Laughing to Music	Modern-day comedies like Spamalat, Avenue Q, and Glee are part of a comic tradition extending back to the Renaissance. Looks at funny in music from commedia dell'arte to the present. Studies works including the comedies of Mozart, Gilbert and Sullivan, the Marx Brothers, Monty Python, Mel Brooks and many others.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 231 or MUS 294 (Laughing to Music) OR Visiting University Student
MUS	240	Listening to Music	Surveys the historical periods of music making in western civilization, the study of which will hopefully create within the student a listener with an appreciation for art music of many periods and provide more enjoyment in the process. Through lectures, presentations, readings, listening examples and video/DVDs, studies music identified as strong examples of the major periods, composers and compositions in the history of music. Students learn and adopt a minimum new language to help express the elements of music they experience and listen to and develop strategies for writing and communicating about what they hear and put words to how they respond to it. Because experiencing music performed live is an integral part of the learning process, students are required to attend concerts outside of class and submit critical reviews of what they hear.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
MUS	245	Non-Majors Class Piano: Inter.	For students who have completed 1-3 years of piano study.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) with C or better; Credit is allowed for only MUS 245 or MUS 294 (Non-Majors Class Piano II) OR Visiting University Student
MUS	246	Singing for Nonmajors II	Continues to cultivate the basics of singing in many styles, from classical to popular. Topics and activities include gaining a deeper understanding of the mechanics of singing, sharpening music reading skills and critical listening, learning and performing in a group, and learning and performing alone.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 146; Credit is allowed for only MUS 246 or MUS 294 (Non-Majors Class Voice II) or MUS 294 (Singing 2 for Non-majors) OR Visiting University Student

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MUS	254	Blues to Heavy Metal	Covers important musicians and trends from the 1930s through the 1970s. Topics include blues, rhythm and blues, rockabilly, doo wop, teen idols, girl groups, dance craze, surf, novelty, soul, Motown, British invasion, art rock, psychedelic rock, hard rock, heavy metal, and early '70s styles. Emphasizes musical instruments and stylistic traits with historical information provided as background. Features listening examples drawn from selected artists and bands including popular songs and rarities, and demonstrations using various musical instruments and techniques.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 254 or 354 (Blues to Heavy Metal)
MUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	340	Music Concert Hall,Stage,Scm	In-depth study of examples from Western art music. Emphasizes aural analysis and synthesis of historical data with musical phenomena. Critiques the canon and its limits in specific instances.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): minimum 42 hours
MUS	345	Non-Majors Class Piano: Adv.	For students who have completed 4 of more years of piano experience.	N		LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 245 or MUS 294 (Non-Majors Class Piano II) with C or better OR Visiting University Student
MUS	347	Jazz in America	In-depth study, analysis and synthesis of examples from the jazz tradition. Includes the application of advanced aural analytic techniques to exemplary jazz musical works.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	349	Music in America	Current styles of American music including jazz, popular, and folk music.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & H	
MUS	354	Popular Music	In-depth study of a specific topic in the history of popular music. Emphasizes aural analysis and synthesis of historical data with musical phenomena to create new perspectives.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 42 hours OR Visiting University Student
MUS	355	American Music	In-depth study of current research topics in American music. Engages students in current scholarly debates. Charts the limits of current scholarly methodologies and historical research programs.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	Prerequisite(s): minimum 42 hours OR Visiting University Student
MUS	356	Broadway&the American Musical	In-depth chronological study of American musical theatre on Broadway, including origin and development, historical references, global and cultural influences. By way of critical analysis, emphasizes comprehensive stylistic understanding of minstrelsy, operetta, revues, book musicals, film musicals, rock musicals, mega-musicals, and Broadway revivals. Engages students in current scholarly debates on American musical theatre.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	362	Rap Music and Hip Hop Culture	Examines the history of rap music and hip hop culture from their origins to about 1995, including most, but not all, of the major artists from this period. Explores connections between rap music and other elements of hip hop culture, and challenges students to think critically about rap music and its place in society. Uses listening exercises, demonstrations, and conversations with artists to examine how rappers create meaning in their musical works. Drawing on secondary articles by rap critics and scholars, considers in detail such controversial subjects as censorship, sexism, obscenity, and race politics in America as they relate to rap music.	N		LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): minimum 42 hours; Credit is allowed for only MUS 354 (Hip Hop) or MUS 362 OR Visiting University Student
MUS	371	World Music	Provides an introduction to world music, including traditional and popular styles. Examines specific music genres from Africa, Asia, Europe, and the Americas and explores their historical development, cultural contexts, communicative functions, forms, styles, instruments and musical philosophies. Throughout the semester, considers the interrelationships among musical genres and other art forms (dance, theater, visual arts, and literature) and analyzes how these musics have intersected with the issues of race, class, gender, religion, ritual, politics, social movements and cultural identity. Students learn to hear and discuss significant stylistic elements of selected genres through listening assignments.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Pre-requisite: Minimum 45 hours; Credit is allowed for only MUS 371 or 394 (World Music)
MUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	410	History of Women in Music	Surveys musical achievements of women as well as the historical contexts that shaped and defined their artistic development.	N		LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	

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MUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
NAN	505	Nanoscience and Society	Integrates nanoscience and nanotechnology with potential societal issues involved in the students' NAN 593 Applied Projects. Coordinated by the faculty and research staff at the Center for Nanotechnology in Society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	506	Innovation and IP Management	Intellectual Property (IP) Management in the context of innovation (research, regulations, manufacture, access to markets, and trade) with emphasis on strategies, public-private interface, licensing, and technology transfer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisites: Degree- or nondegree-seeking graduate; Credit is allowed for only MSE 526, NAN 511, PHY 511, or PHY 481
NAN	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
NAN	542	Topics in Biophysics	Overview of modern biology, length scales; emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542
NAN	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics; measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
NAN	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
NAN	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, PHY552 or SEM 552
NAN	560	Nanomtlis in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major. Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
NAN	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
NAN	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
NAN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
NAN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
NAN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		

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NAV	101	Introduction to Naval Science	Introduces the customs, traditions, missions and regulations of the Department of Defense, United States Navy and United States Marine Corps. Introductory course for the Naval Reserve Officer Training Corps (NROTC) by laying the basic foundation of knowledge about the Navy and Marine Corps required to progress through the NROTC program. Also provides the requisite knowledge to allow follow-on shipboard summer training to be safely and effectively conducted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		
NAV	102	Sea Power and Maritime Affairs	Informs the participants of the historical evolution of sea power for the U.S. Navy and world history. Also covers the evolution of international terrorism and the effects on U.S. strategies and policies regarding potential adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 102 or NAV 194 (Sea Power and Maritime Affairs)
NAV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	202	Navigation	Basic principles, procedures and analytic processes of marine navigation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 202 or NAV 294 (Navigation)
NAV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	301	Ships Systems I	Provides detailed knowledge of naval engineering systems and principles of ship construction. Topics covered include ship design, hydrodynamic forces, stability, conventional and nuclear propulsion, electrical theory and systems, hydraulics and ship control. Concepts of the theory and design of steam, gas turbine and diesel propulsion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 301 or NAV 394 (Navy Ship Systems I - Engineering) OR Visiting University Student
NAV	302	Naval Ship Systems: Weapons	Overview of the theory and concepts underlying modern weapon systems used aboard naval warships.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 302 or NAV 394 Naval Ship Systems II: Weapons
NAV	303	Evolution of Warfare	Provides marine option students with a basic understanding of the art, science and concepts of war from the beginning of recorded history to the present day. Addresses the interrelationships among technology, politics, culture and society to better understand warfare today and in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 303 or NAV 394 Evolution of Warfare
NAV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	401	Naval Operations and Seamanship	In-depth study of numerous aspects relating to the efficient and professional manner of U.S. Navy ships' operations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 401 or NAV 494 (Naval Operations and Seamanship) OR Visiting University Student
NAV	402	Leadership and Ethics	Applies leadership and ethical theories discussed to an actual leadership or ethical dilemma or issue that Junior Officers in the Fleet or FMF are currently facing or have faced in the recent past.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 402 or NAV 494 (Leadership and Ethics)
NAV	403	Fundamentals Maneuver Warfare	Focuses on the historical aspect of amphibious operations. Emphasizes how the development of this war fighting discipline played a key role throughout much of the early history of the Marine Corps.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
NAV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of Naval Science	1-3		
NEU	101	Introduction to Neuroscience	Provides an overview of fundamental concepts in the study of brain organization and function. Discusses key principles regarding cellular and molecular mechanisms of neuron function, organization and information processing in sensory and motor systems, endocrine and emotional components of behavior, and cognitive consequences of diseases of the brain. Introduces methods by which these features of brain function are established.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
NEU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	307	Your Brain on Drugs	Provides an overview of the effects of addictive drugs on the brain from a psychology and neuroscience perspective. Covers all classes of addictive drugs, from alcohol to nicotine to heroin to crystal meth. Also discusses topics related to many popular questions about addiction, such as: Is addiction really a disease? Is marijuana a gateway to harder drug use? Do drugs really kill brain cells? Which drug is the most addictive?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 181 or PSY 101; minimum 45 hours OR Visiting University Student
NEU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of Psychology	1-4		

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NEU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB 555 or NEU 555
NEU	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556
NEU	558	Neuroscience Journal Club	Small class emphasizing discussion, presentation by students, and written research papers.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
NEU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): Interdisciplinary Graduate Program in Neuroscience PhD students
NEU	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEW	100	Intro to Conflict Resolution	Introduces students to theory, research and practice of communication and language skills which are useful in conflict management, negotiation, transformation, reconciliation and forgiveness. Gives students access to practical exercises and role-playing opportunities. Critical thinking and critical decision-making are embedded in both the theory and the practice in this course and apply to the personal, professional and cross-cultural levels of interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
NEW	101	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Credit is allowed only for ASU 101 or NEW 101
NEW	102	Global Transformations	Focuses on the various economic, historical, cultural, environmental, technological and political forces that have transformed our world into an increasingly interconnected global community. To be a responsible and engaged global citizen necessitates understanding globalization and its implications for our future.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Credit is allowed for only NEW 102 or NEW 194 (Global Transformations)
NEW	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): freshman standing with 25 or fewer hours
NEW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		

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NEW	200	Innovation/Svc Learning/Ldrshp	Integrates academic coursework with lessons in leadership, community engagement and service learning in order to cultivate students' civic mindedness, knowledge and sensibility to issues of social justice and community engagement. Students develop solutions to real-life challenges and participate in implementing a community-based service learning project. Applying multicultural engagement and interdisciplinary knowledge and critical thinking skills to civic responsibility, course provides students with skills and knowledge applicable to the mission and goals of ASU and the New College.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only NEW 200 or IAS 294 (Innovation Challenge, Service Learning, Leadership)
NEW	202	Interdisc Transformations	Examines how interdisciplinary approaches to knowledge can successfully address topics that are too broad or complex to be dealt with adequately by a single discipline. Exposes students to interdisciplinary research and problem solving, in oral and written communication, and in the synthesis of diverse perspectives. Familiarity and understanding of interdisciplinarity prepares students to engage in the type of complex thinking necessary for success in life and career, no matter the major or job path, and for better understanding our complex world.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): NEW 102 or 194 (Global Transformations); Credit is allowed for only NEW 202 or NEW 294 (Social Transformations) OR Visiting University Student
NEW	210	From Passion to Practice	Part self-discovery, part professional boot camp, this highly interactive course allows students to explore their strengths and passions and utilize them most effectively in their careers. Drawing upon the expertise of successful leaders and organizations from diverse professions as they are presented in text, video and in person, students learn skills and methodology that prepare them for entry into a fulfilling profession.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 294 (Passion to Practice: Charting Your Path) or NEW 210 OR Visiting University Student
NEW	225	Building a Better You	Equips students to manage their lives effectively and integrate beliefs, values and skills into fulfilling careers. Students develop a focused career path based upon their learning profile, interests and self-knowledge. Develops critical thinking and reading skills needed for effective decision making and communication. Uses the Let Me Learn Advanced Learning System® to enhance self-awareness and growth.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		
NEW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
NEW	300	International Cities	Expands the global awareness of students through intensive study of a major international city. Students study such areas as the history, political system, economy, geography, architecture, science, technology, arts and/or culture of the city before visiting it physically during a break. While abroad, students build on what they have learned in class by exploring the city and experiencing it firsthand.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
NEW	302	Personal Transformations	Provides a structured approach as to how students can synthesize and reflect upon their general studies experience via the completion of an ethical will. Through an iterative writing process, students compose a document which outlines how their thoughts have developed and evolved over their course of study.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): NEW 102 or 194 (Global Transformations); NEW 202 or 294 (Social Transformations) OR Visiting University Student
NEW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours
NEW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
NEW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
NEW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NEW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
NEW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		

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NEW	101-H	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Humanities, Arts, and Cultural Studies major; Credit is allowed only for ASU 101 or NEW 101
NEW	101-M	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Mathematical and Natural Sciences major; Credit is allowed only for ASU 101 or NEW 101
NEW	101-S	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Social and Behavioral Sciences major; Credit is allowed only for ASU 101 or NEW 101
NLM	160	Vol Action & Community Ldrshp	Introduction to voluntary behavior in American society for students interested in volunteerism, community service, and civic engagement.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	
NLM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
NLM	220	Introduction to Nonprofit Orgs	Introduces the nonprofit sector and its role in developing the cultural, economic, and social impact in U.S. society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
NLM	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235
NLM	300	Fund Raising & Resource Dev	Theory and practice of philanthropy, resource acquisition methods through ethical fund raising, and earned income approaches for nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
NLM	310	Volunteer Management	Studies volunteer engagement practices integral to community organizations introducing management techniques such as program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
NLM	320	Professional Develop Seminar	Professional seminar featuring nonprofit executives; variable topics on leadership and management concerns. Forum for exchange between students and professionals.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
NLM	380	Financial Mgmt for Nonprofits	Instructs students about nonprofit financial, management, and social accounting; accounting issues specific to nonprofits; budgeting; reporting; and nonprofit analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management major or Nonprofit Administration minor or American Humanities certificate; NLM 220 with a C or better OR Visiting University Student
NLM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
NLM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
NLM	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student

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NLM	420	Nonprofit Ldrshp Alliance Inst	Nonprofit Leadership Alliance Institute for preparation of nonprofit professionals. Requires out-of-state conference.	Y		LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-2		Prerequisite(s): minimum 45 hours OR Visiting University Student
NLM	430	Managing Nonprofit Orgs	Analyzes administrative structures, decision making, and program delivery within nonprofit organizations.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): Nonprofit Ldrsp & Mngmt major or Nonprofit Ldrsp & Mngmt minor or Nonprofit Ldrsp Alliance Certified Nonprofit Professional (CNP) certificate; ENG 101, 105, or 107 with C or better; NLM 220 with C or better OR Visiting University Student
NLM	435	Service Learning/Community Dev	Establishes a "hands-on" service learning application with a selected agency related to student's career interest. Entails strong examination of service-based learning literature, community development strategies and community engagement applied project.	N		REC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
NLM	451	Grant Writing	How to increase grant funding; creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
NLM	463	Senior Internship	Supervised guided experience in selected agencies.	N		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
NLM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours
NLM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
NLM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NLM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
NLM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
NLM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
NLM	510	The Nonprofit Sector	Provides grounding in scope, function and philosophical foundations of the nonprofit sector in American society, including civic engagement, service delivery, reproduction of values and entrepreneurship.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	515	Nonprofit Org Behavior & Mgmt	Organizational behavior theories and effective management practices for nonprofits. Focuses on designing systems and developing habits to optimize the performance of individual employees and teams, in the context of the organization's goals, culture and capacity.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NLM 515 or NLM 598 (Nonprofit Organizational Behavior)
NLM	520	Financial & Resource Mgmt	Baseline understanding of key and critical financial management issues and practices for nonprofit organizations.	N		LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	525	Fundraising & Resource Dev	Examines fundraising and resource development in philanthropy from the perspective of the nonprofit practitioner. Also examines issues confronting nonprofit organizations related to fundraising and philanthropic purposes in society. Increases students' knowledge and understanding of charitable giving and fundraising--who gives to what, why, and how to raise funds for a cause. Examines a wide range of fundraising methods and tools. Focuses on critical thinking, reflection on practice, collaboration, discussion and writing.	N		LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	530	Program Eval & Info Mgmt	Develops skills in several areas, including evaluation, needs assessment, information and data collection, data management and analysis, computer applications, and report writing.	N		SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	540	Strategic HR Management	Managing human resources in nonprofit organizations; practices and theories.	N		SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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NLM	545	Volunteer Resource Management	Core topics in effective management of volunteers in carrying out the mission of organizations and ensuring volunteers have good experience with community organizations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	550	Philanthropy	Examines the role of philanthropy and charitable giving in contemporary American society from perspectives of the nonprofit practitioner, the philanthropist and the general public.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	560	Ldrshp/Ethics-Nonprofit Sector	Examines leadership and ethical questions encountered by managers and leaders in the nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	562	Social Entrepreneurship	Introduces social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	565	Grant Writing Nonprofit	Provides practical, experiential instruction identifying grant makers, writing proposals, developing budgets and evaluating grant proposals for the nonprofit sector. Develops proposals with a partner nonprofit organization.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NLM 451 or NLM 565 or PRM 451
NLM	570	International NGO	Increases knowledge and understanding of international non-governmental organizations by examining what these organizations do and how they operate in a cross-cultural context.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 572 or NLM 572
NLM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	605	Nonprofits, Law and Society	Enhances the legal sensibilities of nonprofit leaders and engaged stakeholders. This necessitates critical in-depth understanding of: (1) legal needs common to all nonprofit organizations, regardless of mission or area of focus such as nonprofit corporation law, tax-exempt status, fiduciary duties and fundraising and lobbying ethics and parameters; (2) commonalities among nonprofit, for-profit and governmental enterprises operating within similar spheres of society, especially the importance of nonprofit organizations' compliance with laws generally applicable to specific subsectors such as contracts, labor and employment, volunteer and premises liability, and intellectual property; and (3) the overall importance and impact of legal structures on nonprofit organizations' abilities to successfully pursue their missions for the benefit of society.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	610	Exec Leadership & Governance	Examines the multiplicity of roles for executives and board of directors in providing strategic leadership for nonprofits.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	620	Capstone: Integrative Seminar	Synthesizes learning across MNLN program; analyzes emergent nonprofit and philanthropic sector trends; develops leadership approaches to enact social impact; develops and defends Capstone Solutions Project.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management MNLN student; NLM 510; NLM 520; NLM 530; NLM 540 or 545; NLM 550

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NTR	100	Intro to Nutrition Science	Introduces the science of food and nutrition as well as food systems. Focuses on personal dietary behavior change and sustainable dietary recommendations targeting human and environmental health to minimize risk of chronic disease. Overview of healthy dietary patterns, nutrients and energy balance and the digestive system. Addresses food systems issues, cultural aspects of food, and methods for evaluating credibility of nutrition information in the media as well as nutrition science.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	142	Applied Food Principles	Applied scientific principles of food preparation and production.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	150	Intro/Prof/Nutrition/Dietetics	Introduces the professions of nutrition and dietetics. Emphasizes the scope of dietetics practice, the role and functions of registered dietitian nutritionists, and the education requirements for entry into practice. Includes guest presentations by various nutrition professionals.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		
NTR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	241	Human Nutrition	Introduces nutritional concepts with an emphasis on evidenced-based guidelines and practices. Students explore the macronutrients and micronutrients in food, how these nutrients are utilized by the body and their effect on overall health and disease. Also discusses what makes a 'healthy diet,' dietary eating patterns, energy balance and body weight. Students learn techniques to assess the credibility of nutrition information in the media, on the Internet and in scientific journals. Additional topics also include cultural aspect of food, food sustainability and food safety.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHM 101, 113, or 114 OR Visiting University Student
NTR	290	Intro Evidence-Based Research	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the nutrition field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s) w/ C or better: College of Health Solutions major; ENG 101, 105, or 107; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321; Credit allowed for only KIN 290 or NTR 290 OR Visiting University Student
NTR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	300	Computer Apps in Food Service	Introduces common uses of software and technology in the food service environment, including dietary assessment and analysis, point of sale, and food inventory and control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	302	Digital Technologies Nutrition	Students will learn to leverage existing digital technologies ethically and efficiently to solve problems, complete tasks, and accomplish goals related to nutrition. Students will learn effective adaptability to new and emerging technologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 302 or NTR 394 (Digital Technologies in Nutrition Communication) OR Visiting University Student
NTR	320	History of Human Nutrition	Origins of human nutrition; evolving theories of nutrition and disease; historical role of nutrition in social, military, cultural events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	341	Medical Nutrition Therapy I	First course in a three-course sequence in medical nutrition therapy. Introduces the study of medical nutrition therapy and evidence-based practice for health promotion and prevention and treatment of disease. Covers the nutrition care and therapeutic diets for a variety of conditions including diabetes, cardiovascular disease and neurological conditions. Teaches nutrition care planning via a variety of methods including case studies and active learning scenarios.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	343	Food Service Purchasing	Introduces purchasing systems, bid processes, receiving and storage procedures, and regulatory agencies involved in the food service industry.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	344	Nutrition Managemnt & Leadrshp	Students gain a greater understanding of organizational structure, culture, administration, traits, values, diversity, marketing, budget development, unions, and more, all through the lens of management and leadership. Students also utilize their research and writing skills to investigate a variety of management topics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241 OR Visiting University Student
NTR	345	Development of Healthy Cuisine	Principles and applications of nutrition, food selection, food preparation and mindful eating in the development of healthy cuisine for wellness, prevention and disease states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student

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NTR	348	Cultural Aspects of Food	Explores origins, development and diversity of food preferences and dietary habits. Also addresses food patterns and attitudes of global populations and the role of U.S. immigrants in shaping food culture. Requires students to prepare and try new cultural and ethnic foods in this course.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C & G	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	350	Nutrition Counseling	Counseling techniques in nutrition; interpersonal and communication skills in clinical and community sites; nutrition education for individuals and populations.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 341 with C or better or NTR 345; Credit is allowed for only EXW 340 or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
NTR	351	Nutrition Communication	Explores how to best communicate evidence-based nutrition messages to help promote change. Students produce various written and oral pieces that are aimed at health professionals or lay audiences. Course concepts include health literacy, tailoring messages to a target audience, and simplifying the language.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241 OR Visiting University Student
NTR	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353 OR Visiting University Student
NTR	360	Nutrition Entrepreneurship	Explores entrepreneurial opportunities in nutrition, food service, wellness and health communications.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ENT 360 (MGT 360) or FSE 301 or NTR 360 OR Visiting University Student
NTR	390	Current Nutrition Research	Covers concepts in nutrition research that help prepare students for beginning an undergraduate research project. Teaches the basics of undergraduate research focusing on identifying research topics and potential research mentors/faculty, performing literature reviews, critiquing scientific articles, evaluating ethics and participant safety, and proposal writing.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 241; NTR 290
NTR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	400	Preprof Prep in Dietetics	Assists the senior dietetics student in navigating the process of selecting potential internships and applying for internships through DICAS. Focuses on each student's unique professional development needs with projects designed to explore career paths, network, and/or to develop career development skills. Provides an overview of the dietetics profession.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Nutrition (Dietetics) BS major; NTR 341 with C or better; NTR 440, 441, or 444 with C or better; minimum senior standing OR Visiting University Student
NTR	401	Preprof Prep in Nutrition	Students complete 60 hours of fieldwork experience (volunteer work) within their area(s) of professional interest to develop practical skills in planning, development, production and collaboration; including interview skills, social media ethics, cover letter and resume development.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prereq(s): Applied Sci (Food & Nutrition Entrep) BAS, Food & Nutrition Entrep BS, Nutrition BS, Nutrition (Human Nutrition) BS, or School Nutrition cert student; senior standing; Pre- or corequisite(s): NTR 343, 351, or 444 OR Visiting University Student
NTR	440	Advanced Human Nutrition I	Explores the metabolic reactions in humans that involve vitamins and minerals. Students learn how these micronutrients and phytochemicals interact with one another to influence health and disease, explore how genetic variability alters the metabolism of vitamins and minerals, and integrate micronutrient nutrition with physiology and biochemistry to optimize health and prevent metabolic disease. Students immerse themselves in a content-rich learning environment, engage with one another in lectures and in-class discussions, and apply information they have learned in team projects. They also enhance their skills in evidence-based approaches to nutrition science and dietetics by critiquing scientific articles with a micronutrient focus.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202 with C or better; NTR 241 with C or better; NTR 341 with C or better; Pre- or corequisite(s): BCH 361 with C or better if completed; Credit is allowed for only NTR 440 or NTR 540 OR Visiting University Student
NTR	441	Advanced Human Nutrition II	Metabolic reactions and interrelationships of carbohydrate, lipid, alcohol and protein.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361 with C or better; BIO 202; NTR 241; Credit is allowed for only NTR 441 or NTR 541 OR Visiting University Student
NTR	442	Experimental Functional Foods	Food product development techniques, food evaluation and testing, and investigation of current research into food composition.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: CHM 101 or CHM 113; NTR 142; NTR 100 or NTR 241

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NTR	444	Medical Nutrition Therapy II	Second in a three-course sequence in medical nutrition therapy. Covers the principle of medical nutrition therapy for prevention and treatment of disease and health promotion. Also covers medical nutrition therapy for pediatrics, critical care, nutrition support, renal, liver, cancer and HIV/AIDS patients. Students apply critical thinking skills in simulation, active learning and interprofessional activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202; NTR 341 with C or better; Credit is allowed for only NTR 444 or NTR 544 OR Visiting University Student
NTR	445	Management of Food Service Sys	Reviews standardized methods of quantity food preparation, operation of institutional equipment, and institutional menu planning. Requires students to participate in a weekly lab where food is prepared and sold to the public in our functional retail kitchen operation. Tasks students to create and prepare menu items and manage all aspects of a fully operational kitchen. This is a capstone course for the dietetics degree.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): NTR 100 or 241; NTR 142; NTR 343; Credit is allowed for only NTR 445 or NTR 545 OR Visiting University Student
NTR	446	Medical Nutrition Therapy III	Third in a three-course sequence in medical nutrition therapy. Lecture and lab components include hands-on assessment techniques, evaluation and interpretation of malnutrition, laboratory data, and nutrition support therapy in relation to disease process and progression. Covers nutrition therapy for advanced practice including critical care, advanced wound care and failure/compromise of organ systems. Utilizes case studies, active learning and interprofessional experiences; as well as critical thinking skills to perform and evaluate nutrition assessment techniques including the NFPE and interpretation of laboratory data; develop and evaluate nutrition support therapies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): NTR 444 with C or better; Pre- or corequisite(s): BCH 361; Credit is allowed for only NTR 446 or NTR 546 OR Visiting University Student
NTR	448	Community Nutrition	Includes content related to community nutrition screening and assessment, nutritional epidemiology, nutrition monitoring and food assistance programs, public policy, nutrition interventions for vulnerable populations, planning effective community nutrition programs, grant writing, nutrition marketing and designing nutrition education programs. Students work in teams to analyze a specific community and population, conduct a literature review on nutrition concerns with their group, then design a community intervention and nutrition education lesson. Students also complete 10 hours of fieldwork in a community nutrition field outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241; Credit is allowed for only NTR 448 or NTR 548 OR Visiting University Student
NTR	450	Nutrition in the Life Cycle	Reviews nutritional needs and nutrition-related conditions in different stages of the life cycle. Course topics include pregnancy, lactation, infancy, childhood, adolescence and older adulthood. Reviews how developmental changes at each life stage contribute to specific diet characteristics and nutritional needs. Also covers how cultural, environmental, behavioral, psychosocial, physical and socioeconomic factors affect nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 450 or NTR 550 OR Visiting University Student
NTR	453	Nutrition and the Media	Examines various aspects of nutrition and the media, including how food and nutrition professionals use the media in their career, how the media constructs our cultural views of food and body image, and how to frame nutrition messages to make them more newsworthy. Also explores the fields of food writing and food journalism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
NTR	455	Retail Food Service Operations	Development, evaluation and management of retail food service operations; legal and ethical issues in food and beverage management. Capstone course for food management degrees.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; minimum junior standing OR Visiting University Student
NTR	457	Sports Nutrition	Provides a foundation in sports nutrition and addresses the nutritional needs of various types of athletes. Topics include energy and nutrient metabolism during activity, fluid and electrolyte regulation, the evaluation of sports supplements, and travel nutrition. Students also gain experience in developing and providing educational sports nutrition materials outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201; NTR 241 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
NTR	480	Integrative & Functional Nutri	Core tenants of dietetics and integrative medicine and the seven physiological systems underpinning this approach. Explores how nutrition contributes to a complex system of interacting biological, psychological, social, spiritual, community, environmental and biochemical systems. Trains how to put the patient at the center of the healing process so that students are able to address chronic disease concerns through a holistic and integrative framework as part of a larger interdisciplinary team. Challenges students to utilize conventional clinical nutrition approaches while embracing complementary therapies that are evidence based and address the biochemical individuality or specific life experiences of each patient/client.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361; NTR 241; NTR 341
NTR	490	Undergrad Rsrch Methods Nutri	Builds on previously learned concepts by engaging students in research methods in the field of nutrition and helping to prepare for beginning an undergraduate research project. Provides an overview of common measurements and study designs that are used in nutrition research. Students apply this knowledge by conducting mini-studies and a class-based research project.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 290; NTR 390
NTR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
NTR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NTR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		
NTR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
NTR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS, Medical Nutrition MS, or Nutritional Science MS student
NTR	501	Research Methods/Nutrition	Reviews survey, focus group, and epidemiologic research; develops questionnaires; analyzes large data sets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Nutritional Science MS student
NTR	502	Statistics in Research	Covers the fundamental principles of the scientific process. Critically reviews scientific articles including review articles. In particular, students understand study limitations and how they impact data interpretation and generalizability. Basic training in statistical analyses using the statistics program SPSS.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Medical Nutrition MS student; Credit is allowed for only NTR 502 or NTR 598 (Statistics in Research)
NTR	503	Behavior Change	Project-based course focuses on the process of health behavior change interventions using design process and behavioral science.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS, Nutritional Science (Dietetics) MS, or Exercise and Nutritional Sciences PhD student
NTR	510	Nutrition and the Lifespan	Examines the nutritional needs of humans as they move through the lifespan from pre-conception through elder years. Highlights conditions that may alter or substantially impact nutrition at these stages using case studies and medical reviews. Reviews programs that provide support for food or nutrition education at various life stages including changes in needs for specific macronutrients and micronutrients. Diet assessment techniques and diet prescription strategies to meet needs during various life stages.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student
NTR	511	Medical Nutrition	Provides an overview of the role of nutrition in medical practice and disease prevention. Includes an introduction to nutrition-based approaches in the prevention and treatment of chronic diseases such as obesity, cardiovascular disease, diabetes, cancer and gastrointestinal diseases. Discusses integrative aspects of nutrition along with review of normal digestion and absorption and a discussion of disorders arising from abnormalities in these processes. An introduction to clinical nutrition assessment and the basics of nutrition support will also be provided. Utilizes relevant clinical case discussions along with review of the literature and current authoritative guidelines to reinforce the content. Students learn how to individualize nutrition recommendations and utilize motivational interviewing for patients with the various above-listed needs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student

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NTR	523	Vegetarian Nutrition	Health benefits, nutritional characteristics, potential risks of vegetarian diets.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	524	Chronic Inflammation	Examines how diet and lifestyle contribute to the development of metabolic syndrome. Reviews and discusses various risk factors that comprise metabolic syndrome through lectures and readings. Reviews chronic inflammation as a common etiology for chronic disease. Highlights nutrition interventions to treat and to prevent chronic inflammation using case studies and medical reviews.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	525	Complementary Nutrition	Critical review of functional foods, phytochemicals, nutrient supplements in health promotion.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	527	Policies, Environment & Obesity	Enhances students' understanding of the role policies and environments play in health promotion and disease prevention with a special focus on obesity prevention. Looks at a variety of examples to see how policies and environments related to food, nutrition and physical activity affect individual and community health. Also explores how "non-health" policies can be used as an effective tool to promote healthy behaviors.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	529	Pediatric Nutrition	Critical review of pediatric disease states and current nutritional therapies.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	530	Techniques of Health Coaching	Health coaching techniques and skills for medical, allied health and health promotion professionals. The content illustrates the theory, principles and practices of evidence-based coaching psychology. Aligns with the training programs affiliated with Wellcoaches® (endorsed by the American College of Sports Medicine). Designed in three parts: (1) building of core coaching skills; (2) establishing generative moments with clients; and (3) developing coaching presence and positive psychology.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills)
NTR	532	Pathophysiology and Nutrition	Explores the etiology of various endocrine pathophysiological conditions. Throughout the course, students learn the etiology of common conditions and are responsible for finding and presenting evidence for nutrition-based treatments for these conditions. At the conclusion of the course, students gain an appreciation and understanding of current research in nutrition-based approaches to treat endocrine disorders.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	533	Diet Ethics and Policy	Political and ethical issues inherent in the U.S. food system. Topics include food and agricultural policy, government dietary recommendations and regulations, food environment, current issues in food politics, ethical questions of food choice, issues of obesity and food security, sustainability, and investigation of how and why Americans eat the way they do.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	535	Nutrigenomics	Provides a sound foundation for promoting personalized nutrition by integrating and applying molecular nutrition and nutritional biochemistry to clinical settings.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	537	Evidenced-Based Nutrition	Reviews current evidence of the role of diet on disease prevention, development, and management.	N		LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	539	Global Nutrition	Provides an overview of global nutrition issues, including the epidemiology, etiology, sociocultural and economic context, and program and policy responses to nutrition-related topics. Areas to be covered include childhood malnutrition, growth stunting, micronutrient deficiencies, parasites and nutrition, sanitation, and obesity and chronic disease incidence in developing countries. Course is participatory; students engage in a series of class activities, discussions, and presentations.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	540	Adv Micronutrient Metabolism	Metabolism of vitamins and minerals, primarily as applied to humans, with research literature emphasized.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 440 or 540
NTR	541	Adv Macronutrient Metabolism	Metabolism of protein, fat, and carbohydrate, primarily as applied to humans, with research literature emphasized.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 441 or 541
NTR	544	Therapeutic Nutrition	Current theories of the nutritional prevention or treatment of various diseases.	N		LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 444 or 544

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NTR	545	Mgmt/Instl Food Service System	Standardizes methods of quantity food preparation, operation of institutional equipment, institutional menu planning, quantity food experiences. May require field trips.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 445 or 545
NTR	546	Assess Techniques in Nutrition	Clinical and biochemical evaluation of nutritional status.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 446 or NTR 546
NTR	548	Advanced Community Nutrition	Planning, development, implementation, and evaluation of community nutrition programs, including the process of grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 448 or 548
NTR	550	Adv Nutrition Life Cycle	In-depth review of metabolic characteristics and nutritional needs during pregnancy and lactation, infancy, childhood, adolescence, adults and older adults. Analysis of cultural, environmental, behavioral, psychosocial, physical and socio-economic factors affecting nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only NTR 450 or NTR 550
NTR	551	Geriatric Nutrition	Explores the impact of nutrition on the aging process and how the aging process influences nutritional needs. Examines the physiology, demographics and economics of aging as well as issues such as end-of-life care. Addresses health promotion, disease prevention and disease management within the context of geriatric nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	553	Nutrition and CVD	Reviews current evidence of the role of diet on cardiovascular disease prevention, development and management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 541. Credit is allowed for only NTR 553 or NTR 598 (Nutrition and Cardiovascular Disease) or NTR 537 (Cardiovascular Nutrition)
NTR	555	Advanced Sports Nutrition	In-depth study of current practices in sports nutrition and review of scientific literature. Also investigates the application of sports nutrition methodologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS, Nutritional Science (Dietetics) MS, or Exercise and Nutritional Sciences PhD student; Credit is allowed for only NTR 555 or NTR 598 (Advanced Sports Nutrition)
NTR	556	Thermo and Fluid Balance	Comprehensive overview of human thermoregulatory responses and fluid balance to exercise in the heat. Provides students with the opportunity to learn the in-depth thermoregulatory responses to heat and the complication related to exercise-induced hyperthermia as well as water and electrolyte imbalances.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only NTR 556 or NTR 598 (Thermoregulation and Fluid Balance)
NTR	557	Nutritional Epidemiology	Designed for graduate students interested in conducting epidemiologic studies, or learning how to interpret and evaluate evidence from epidemiologic studies relating diet and nutritional status to disease risk and health. Familiarizes students with concepts and methodologies used in nutritional epidemiologic studies, and current state of knowledge on diet in etiology of chronic diseases.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 557 or NTR 598 (Nutritional Epidemiology)
NTR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
NTR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
NTR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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NTR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
NTR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NUR	300	Professional Nurse Concepts I	Introduces students to professional nursing attributes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): enrollment into upper-division Nursing program; Pre- or corequisite(s): NUR 325; NUR 336; NUR 352
NUR	310	Nursing Concepts	Theoretical concepts related to health integrity focusing on the individual client across the life span.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: BSN Nursing major in clinical program
NUR	311	Pharmacology in Nursing	Applications of pharmacologic interventions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major
NUR	312	Psychomotor Skills for Nursing	Theoretical foundation for application of psychomotor nursing skills to professional nursing practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing major in clinical program. Credit is allowed for only NUR 312 or NUR 394 (Psychomotor Skills For Professional Nursing Prac)
NUR	313	Nur Conc Adult Health	Nursing concepts related to selected alterations in health with focus on adult populations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; NUR 320 with Y passing grade; Corequisite(s): NUR 323; Credit is allowed for only NUR 313 or NUR 394 (Nursing Concepts for Adult Health)
NUR	315	Nursg Rsch Appl to Prac	Provides scientific and clinical inquiry and research methodology along with concepts needed for integration of evidence into practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): advancement into the upper-division traditional BSN Nursing program; ENG 101, 105, or 107 with C or better
NUR	316	Nur Conc Psych/Mental Health	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families, and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better if completed; NUR 311 with C or better if completed; NUR 330 with C or better if completed

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NUR	317	Nursing Theory for Psych	Theoretical concepts related to select and/or prevalent psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 367
NUR	318	Nurs Rsrch & Evidence Translt	Explores the process of scientific and clinical inquiry, research methodology, critical appraisal of research findings, and the translation of current evidence into nursing practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NUR 391 with C or better
NUR	320	Nursing Practice	Integrates knowledge and attitudes from theory into the nursing care of adults in a variety of health care settings.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing major in clinical program; Corequisite(s): NUR 310; NUR 311; NUR 312; NUR 330
NUR	323	Nursing Practice Adult Health	Applies nursing process with selected alterations in health with focus on adult populations in the acute care setting.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better; NUR 311 with C or better; NUR 330 with C or better; NUR 320 or NUR 484 (Nursing Practice) with Y Grade; Corequisite(s): NUR 313 or NUR 394 (Nursing Concepts Adult Health)
NUR	324	Nur Prac Psych/Mental Health	Application of nursing process, critical thinking, clinical decision making with individuals, families, and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	SEM	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; Corequisite(s): NUR 316; Credit is allowed for only NUR 324 or NUR 484 (Nursing Practice); Corequisite(s): NUR 313 or NUR 394 (Nursing Concepts Adult Health)
NUR	325	Health and Illness Concepts I	Applies physiologic and psychosocial concepts in the client domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the traditional BSN
NUR	326	Hlth & Illness Cncpts II	Applies concepts related to health and illness and evidence-based principles in the care of clients experiencing alterations in health. The physiologic and psychosocial concepts focus on the leading causes of morbidity and mortality with emphasis on safe, competent and compassionate nursing care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	330	Professional Nurse Attributes	Professional nursing roles and responsibilities.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major
NUR	336	Experiential Learning	Applies assessment and care concepts in the nursing domain.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	337	Experiential Learning II	Practices professional nursing interventions including medication administration, bio-psycho-social care of the adult and childbearing family, and basic developmental assessment of the child.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	346	Nur Prac:Geriatric & Adult Hlt	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	347	Nur Prac Psych/Mntl Hlth & Fam	Applies concepts learned in previous courses to assist with developing plans, providing care and implementing teaching strategies to obstetric, gynecological and psychiatric/mental health clients and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	348	Intrmte Nursing Practice:Adult	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	349	Nursing Prac: Psych MH--Pre	Applies concepts related to bio-psycho-social care of adults experiencing psychiatric alterations in the nursing domain.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	352	Fndmntl Cncpts in Nrsng	Applies care concepts in the client and nursing domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	353	Integrtn Cncpts Acrss Lifespan	Focuses on the physical, cognitive and socio-emotional development of individuals and families using a life cycle approach. Concepts reside in the client domain of health and wellness and include development, reproduction, family roles, spirituality and end-of-life/palliative care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program

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NUR	356	Nursing Concepts: Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing program; Pre- or corequisite(s): NUR 311 with C or better if completed
NUR	366	Nursing Practice Adults/Elders	Applies knowledge and skills essential to maintaining health and wellness in clients across the lifespan.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	6		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing Program student; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 356 with C or better if completed
NUR	367	Nursing Prac:Psych MH--Postbac	Applies nursing process, critical thinking, clinical decision-making with individuals, families, and groups experiencing acute and/or chronic alterations in mental health and/or psychiatric disorders.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 317
NUR	384	Gerontological Nursing	Focuses on optimizing the health of older adults and the management geriatric syndromes and chronic conditions.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade
NUR	391	Professional Nursing Theory	Analyzes the multiple dimensions of contemporary professional nursing.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Pre- or corequisite(s): TWC 361 with C or better if completed
NUR	392	Hlth Prom Across the Life Span	Examines concepts and theories involved in health promotion across the lifespan and their application for nurses.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	404	Prof Nrsr Cncpts:Intrmdt	Explores concepts related to quality of care, quality improvement, safety, innovation and communication within health care.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	405	Prof Nrs Cncpts:Advanced	Focuses on preparing to become active members of the nursing profession, including developing strategies for successful transition into professional practice.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 458 with C or better; NUR 446 with Y grade; NUR 447 with Y grade
NUR	410	Nur Conc Comm Pub Health	Examines concepts related to health promotion, disease prevention, and health maintenance within the global community.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y grade if completed; Corequisite(s): NUR 420 or 484 (Nur Pract: Comm/Pub Hlth); Credit allowed for only NUR 410 or 494 (Nur Concepts Comm & Pub Hlth)
NUR	411	Nur Conc Child bearing Ped	Concepts related to care of individuals and families within the childbearing and pediatric populations.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y passing grade if completed; Corequisite(s): NUR 421; Credit is allowed for only NUR 411 or 494 (Nursing Concepts Childbearing Individ & Families)
NUR	412	NUR Conc Pediatric Patients	Examines essential concepts related to the nursing care of pediatric patients and their families. Provides a nursing care approach for the pediatric patient and family across the healthcare continuum.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 with C or better; NUR 315 with C or better; NUR 316 with C or better; NUR 323 with Y grade; NUR 324 with Y grade; Corequisite(s): NUR 422; Credit is allowed for only NUR 412 or NUR 394 (Nursing Concepts: Pediatrics)
NUR	413	Nursing for Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412 all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 423

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NUR	415	Nur Conc Childbearing Family	Examines the care of childbearing clients and their families. Embedded content focuses on providing care to clients along the healthcare continuum.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Corequisite(s): NUR 475; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 330 with C or better if completed; NUR 356 with C or better if completed; NUR 366 with Y grade if completed
NUR	416	Nur Conc: Com Pub Health	Examines selected concepts, theories, and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing locally and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 476
NUR	417	Nur Conc: Ped Clients	Concepts related to care of individuals and families within pediatric populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 477
NUR	418	Nur Conc: Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	419	Managing Nursing Org Sys	Analyzes selected concepts and theories related to leading and managing nursing in organizational systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	420	NUR PRAC: Comm Pub Health	Applies community/public health nursing concepts in the delivery of primary, secondary, and tertiary care in a variety of community settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; Corequisite(s): NUR 410; Credit is allowed for only NUR 420 or NUR 484 (Nursing Practice: Community and Public Health)
NUR	421	Nur Prac Child-bearing / Famil	Applies nursing care concepts related to the child-bearing woman and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y grade if completed; Corequisite(s): NUR 411; Credit is allowed for only NUR 421 or NUR 484 (Nursing Practice: Childbearing Clients)
NUR	422	Nursing Practice: Pediatrics	Focuses on clinical care of the pediatric client and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y passing grade if completed; Corequisite(s): NUR 412; Credit is allowed for only NUR 422 or NUR 484 (Nursing Practice: Pediatrics)
NUR	423	NUR PRAC: Comp Care/Clin Imm	Students perform nursing practice in a variety of clinical settings, laboratory and simulated patient care environments. Students provide nursing care to patients who are physiologically unstable in advanced medical-surgical, and critical care clinical environments. Students perform advanced psychomotor skills in the clinical, laboratory and simulation environments. Students also complete a clinical immersion experience in a selected clinical setting. During the clinical immersion experience, students have the opportunity to apply leadership and management principles, and work in interprofessional healthcare teams to provide nursing care to clients experiencing health alterations across the lifespan.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Pre- or corequisite(s): NUR 410 with C or better; NUR 411 with C or better; NUR 412 with C or better; NUR 420 with Y grade ; NUR 421 with Y grade ; NUR 422 with Y grade; Corequisite(s): NUR 413
NUR	425	Hlth & Illnss Cncpts III	Applies and integrates interrelated concepts related to health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program

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NUR	426	Hlth & Illnss Concepts IV	Applies and integrates interrelated concepts related to advanced health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	430	Prof Nur Attrib Ldrshp & Mgmt	Applications of theories and concepts of organizations, management, and leadership with focus on nursing management and leadership in healthcare organizations.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412 all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 431
NUR	431	Prof Nur Attrib Innov Prof	Focuses on the process of transition to the professional nursing role, and the gathering, interpretation, and evaluation of evidence that serves as a basis for improving client outcomes and professional satisfaction.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade
NUR	436	Experintl Lrng Advanced	Students practice skills for professional nursing including advanced medication administration and bio-psycho-social care of the child and acutely ill adult.	N		LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	437	Experintl Lrng Readnss to Prac	Students demonstrate readiness for interprofessional nursing practice including coordination of nursing care of multiple patients.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 458 with Y grade
NUR	440	Community&Public Health Nursin	Examines selected concepts, theories and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing in the United States.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better
NUR	444	Innovation in Nursing	Examines the role and behaviors of an innovator in the nursing profession.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better
NUR	445	Nursing Management	Examines selected theories and concepts of organizational behavior and the management of people and resources. Focuses on the application of selected management theories and concepts to nursing practice and health care systems	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 495; TWC 361; Pre- or corequisite(s): NUR 460 with C or better if completed
NUR	446	Nur Prac Ped &Cmplx Care Adult	Prepares learners in the application and demonstration of advanced theoretical knowledge, professional nursing practice, and interprofessional collaboration and referral in the management and delivery of safe, competent care of pediatric and adult clients experiencing serious health alterations.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	447	Nursing Practice: Pediatrics	Applies previous nursing knowledge to develop plans of care and implement teaching strategies to pediatric clients and their families.	N		LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade
NUR	448	Nursing Practice Readiness	Prepares the learner for the practice of professional nursing in diverse settings.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 452 with C or better; NUR 458 with C or better
NUR	452	Cncpts in Pop-Basd Health	Assesses and examines the management of health and disease in the community. Focuses on health promotion, disease prevention and identification of barriers that prevent populations from maintaining optimal health. Discusses public health theories and models including epidemiology, health education and health behavior theory.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	453	Intgrtn Cncpts in the HlthCare	Explores the impact of health care policy, systems, economics, law and informatics on the delivery of health care today and in the future.	N		LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 452 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 458 with Y grade

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NUR	458	Community Care & Collaboration	Focuses on the assessment and analysis of health and disease in the community and population. Provides the data for the IPE Seminar in Senior 2 where an Interprofessional Team of students utilizes the information to plan and implement interventions to improve the health status of communities and populations.	N		SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	459	Interprof ED/Co Seminar: Adv	Focuses on the development, implementation and evaluation of a community action project.	N		SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 452 with C or better; NUR 458 with C or better
NUR	460	The Art of Nursing	Explores the aesthetic, ethical, and personal patterns of knowing in nursing for the practicing RN.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	HU	Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	464	Capstone Prof Nursing	Synthesizes theories and concepts for professional nursing practice with a focus on role transition.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: BIO 202; CDE 232 or PSY 101 or PSY 341; CHM 101; MIC 205; General Studies MA course; NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 445; NUR 460; NUR 495; TWC 361
NUR	475	Nursing Practice-Childbearing	Applies nursing care concepts related to the childbearing woman and family.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 415
NUR	476	Nur Prac: Comm Pub Health	Applies community and public health nursing concepts in the delivery of primary, secondary, and tertiary prevention from a population-centered perspective.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Pre- or corequisite(s): NUR 416
NUR	477	Nur Prac: Pediatrics	Focuses on clinical care of the pediatric client and family.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 417
NUR	478	Nur Prac: Complex Care	Applies advanced psychomotor and leadership skills, nursing care delivery management, and interprofessional referral and collaboration for clients experiencing health alterations across the lifespan in advanced care settings.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 418
NUR	479	Nur Prac: Clinical Immersion	Builds on the knowledge and skills obtained in the nursing curriculum and integrates the curriculum concepts in varied and diverse practice settings. Supports the student's transition into the role of the professional registered nurse.	N		PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 419
NUR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
NUR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NUR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	495	Public & Global Health in Nurs	Analyzes public health concepts, theories, and practice with a focus on the health of all clients in a global environment. Includes core public health functions, domestic and international health care delivery systems, public health and health policy, conceptual and scientific frameworks for community/public health nursing practice, epidemiology, and global health issues.	N		LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	G	Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better; General Studies Literacy (L) course with C or better

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NUR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7	L	Prerequisite(s): Upper Division Nursing Program students; ENG 101, 105, or 107 with C or better
NUR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		
NUR	501	Individual&InnovationLeader	Examines the role and behaviors of an innovator in nursing and the interprofessional role. Explores the skills required to create a compelling vision to influence others through innovation and ethical leadership. Examines and correlates different situational challenges utilizing principles of complexity and emotional intelligence to advance innovation in nursing and the interprofessional health care roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
NUR	502	Adv Health Assessment & Promo	Uses lifespan developmental and social determinates frameworks to integrate advanced nursing concepts applied to health assessment and promotion.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): admission to a Nursing MS program
NUR	503	Adv Phy Assess Patho Pharm II	Uses an at-risk population framework to present, integrate and interrelate advanced concepts, practices and principles applied to the biological, cognitive and psychosocial domains of pathophysiology, pharmacotherapeutics and health assessment for health promotion among vulnerable populations appropriate to master's level nursing practice and roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 502 with B- or higher
NUR	508	IPCareCoordination Practicum	Care coordination practicum (90 approved contact hours) preceptored by a practitioner and/or faculty member. Practicum builds on care coordination and interprofessional collaborative practice core competencies, and theories, with an emphasis on the design, delivery and evaluation of culturally relevant and linguistically appropriate clinical prevention interventions, population health strategies and/or services that incorporate broad ecological, global and social determinants of health. Includes principles of epidemiological data; communication, quality improvement and health information technologies appropriate to master's level practice and roles within the context of team-based interprofessional clinical prevention and population health care and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Interprofessional Care Coordination MS student
NUR	509	Prevention & POP Health Prac	Preceptored practicum appropriate to master's level nursing practice and roles within the context of team-based interprofessional clinical prevention and population healthcare and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 501 with B- or better; NUR 502 with B- or better
NUR	510	Foundations Care Coordination	Focuses on the theoretical concepts of care coordination and case management, including current models, intervention components, evaluation methods and financing. Provides the foundation for understanding care coordination and the roles nurses have played in the evolution and implementation of the care coordination models.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to Nursing (Care Coordination) MS degree or certificate program
NUR	511	Care Coord Interprofessional	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, care coordination, communication and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 501; NUR 510
NUR	512	Qual/Safety Outcomes CareCoord	Focuses on the nurse's role in care coordination, and how care coordination programs are used to provide cost-effective and patient-centered care, improve quality and safety outcomes for patients and families, and use health information technology to advance the goals of care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better
NUR	513	IPCP and HC Policy	Examines the nurse's role in communicating, collaborating and leading interprofessional teams to advance innovative care coordination models. Prepares nurses to influencing health policy through care coordination research and leadership.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better
NUR	514	Nursing Theory Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	515	NursingConceptsPsychiatricMH	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups. Applies knowledge and skills essential to maintaining health and wellness in Psychiatric Mental Health clients.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student

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NUR	516	NursePracticePsychiatricMH	Applies nursing process and critical thinking/clinical decision-making with individuals, families and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	517	Nursing Practice Pediatrics	Focuses on clinical knowledge and skills essential to maintaining health and wellness in pediatric clients and their family unit.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	518	Nursing Practice Adults	Maximizes knowledge and skills essential to maintaining health and wellness in adult and geriatric clients.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	519	Prac: Care Coord Nurse Leader	This mentored practicum provides the learner with opportunities to apply care coordination (CC) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address care coordination initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 509 with B- or better
NUR	520	PatSafety HC Qual Princ	Focuses on the application of core principles of patient safety and health care quality to patients. Explores current and historical factors that contribute to quality health care outcomes. Examines the influence of financial, legal and regulatory factors on patient safety and health care quality. Applies various theories, concepts and tools to promote patient safety and health care quality. Describes the principles of just culture and the relationship to analyzing errors. Discusses the nurse's role in advancing patient safety and health care quality. Infuses the Quality Safety Education in Nursing (QSEN) competencies into course activities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing MS or Nursing (Entry to Nursing Practice) MS student
NUR	521	HC EvidenceInformaticsAnalys	Focuses on applying information technology and research methodology to safety and quality initiatives. Students learn the role of technology related to select human factors engineering concepts and related clinical application (e.g., medication administration, clinical decision making). Focuses on determination of outcome measures related to evidence-based practice (EBP) and quality improvement (QI). Discusses survey methods including construction, data collection methods, and data analysis.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing MS or Nursing (Entry to Nursing Practice) MS student
NUR	522	DesignSystemsPISafety	Focuses on the design, implementation, evaluation and sustainability of patient safety and health care quality initiatives. Uses innovation and change theories, as well as high reliability and just culture principles, to support data collection, analysis and reporting within complex health care systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	523	InterprofessionalCollaboration	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, communication, and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting. Theory and evidence-based strategy for team building, maintenance and conflict resolution for improved team-based practice and performance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	524	NursingPrac/ChildbearingFamily	Applies nursing care concepts essential to maintaining health and wellness in the childbearing woman and family.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	529	Prac:PT Safety&HC Quality Lder	Mentored practicum provides opportunities to apply patient safety and health care quality (PSHQ) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3-7		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	530	Foundntl Cncpts Nursing Info	Focuses on the foundational concepts of nursing informatics. Analyzes the scope and standards of practice; ethical and privacy principles; relationships amongst biomedical, health and nursing informatics; and models, concepts and theories that support nursing informatics practice. Appraises accreditation and legal and regulatory requirements for health and nursing informatics practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): BMI 601 with B- or better; BMI 603 with B- or better
NUR	531	Advncd Cncpts Nursng Info	Focuses on advanced concepts in nursing and health informatics practice. Analyzes the health informatics metastructures, relationships between nursing and multidisciplinary standardized terminologies, trends in nursing and health informatics, ethical, privacy and legal issues, and the emerging role for the nurse informaticist.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530

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NUR	533	NursingConceptsChildbearingFam	Concepts related to care of individuals and families within the childbearing populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student; Corequisite(s): NUR 524
NUR	539	Practicum: Nursing Informatics	Learners complete 135 hours of mentored clinical practice during this practicum applying nursing informatics (NI) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address informatics initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530 with B- or better; NUR 531 with B- or better
NUR	542	Readiness to Practice	Applies concepts that prepare nurses to deliver innovative, safe and quality client care in a dynamic health care paradigm. Prepares learners for their roles in professional nursing.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	544	TheoreticalFoundationsNursing	Analyzes the multiple dimensions of contemporary professional nursing and the interrelationships among theory, philosophy and practice	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	545	Advanced Pharmacology	Provides advanced knowledge of pharmacology with an emphasis on the professional nurse's role in medication therapy and administration. Presents medication classifications within the framework of the patient's psychological and physiological function. Applies pharmacological principles to treatment of specific diseases and symptoms. Examines legal, cultural and ethical aspects of medication theory.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	546	Nursing Concepts Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	579	NED Practicum	Mentored teaching practicum includes application of teaching/learning principles in a specialized area of interest. Tailored to the teaching experience and level of the student. May include classroom, online or clinical teaching, attendance at approved conferences, relevant meetings or other activities that provide opportunity for the learner to gain expertise in the selected area of interest.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 579 or NUR 580 (Teaching Practicum)
NUR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing student
NUR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Pre-requisites: Nursing Graduate student
NUR	601	Scientific Role Development I	First in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Analyzes current trends in the development of innovative scientists and leadership characteristics needed for future roles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	602	State of Science in Nursing	Focuses on research synthesis and critiques of the scientific literature as a basis for knowledge generation related to a focal area of research interest.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Corequisite(s): NUR 605
NUR	603	Soc Context Issues Nurs Hlthcr	Analyzes nursing practice and the healthcare system for an identified population using social-ecological approaches.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	604	Phil of Science Perspectives	Analyzes the history and philosophy of science as a basis for knowledge and academic scholarship in nursing and healthcare innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		

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NUR	605	Theory Analysis	Examines theoretical perspectives and approaches guiding research in nursing and healthcare innovation across the lifespan. Includes the historical evaluation, social contextual factors, implicit assumptions, and bias that influence nursing and healthcare innovation knowledge generation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	606	Scientific Role Development II	Second in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Posits the knowledge, skills and resources needed to expand one's career as an educator and scientist in a health-related leadership role in the context of a future health care environment. Explores strategies for progressive and creative approaches in preparing leaders for innovative change in education, research and health care policy affecting healthcare delivery.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	607	Scientific Role Developmnt III	Focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Students study the career trajectories of key leaders in nursing and health care innovation as a basis for development of their own personal plans for success, including research trajectories and marketing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 606
NUR	608	Qual Research Design Methods	Explores and critiques selected qualitative research approaches. Includes fieldwork exercises as an integral part of course expectations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	609	Quant Research Design Methods	Examines multiple research approaches in clinical and health policy research from a quantitative perspective.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
NUR	612	Advanced Analysis of Variance	Introduces theory, methods, and practice of analysis of variance.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	613	Prin of Regression&Correlation	Introduces theory, methods, and practice of regression analysis.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	614	Des & Implem of Theory-Based	Focuses on the knowledge related to advanced methods for intervention research. Examines methodological, ethical, and practical issues in the design and implementation of theory-based intervention studies.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	615	Qual Data Management Seminar	Qualitative research methods applied to thesis, dissertation or qualitative research reports, focusing on data reduction, analysis, interpretation, credibility, ethics and dissemination.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 503 or CRJ 613 or EDP 503 or NUR 608 or PAF 610
NUR	616	Community-Based Partcpt Rsrch	Overview of Community-Based Participatory Research (CBPR). Familiarizes participants with key historical underpinnings of CBPR, principles of CBPR practice, as well as methodological CBPR considerations in building community partnerships, issue analysis, research planning, data gathering and data sharing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only NUR 616 or NUR 691 (Community-Based Research)
NUR	617	Foundation in Science	Provides basic skills necessary for health-related research specifically geared toward (1) understanding concepts of widely used statistical methods with examples from health care; (2) ethical knowledge of human subjects research; and (3) processes of research including research design, interpretation and presentation of results and critiquing research articles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 502 or EDP 502 or EXW 501; Credit is allowed for only NUR 617 or NUR 691 (Foundational Concepts in Science and Statistics)
NUR	618	Research-Based Health Policy	Integrative synthesis course in which students apply values and knowledge from previous PhD core courses in philosophy of science, theory analysis, state of the science, quantitative and qualitative methods, and the art and science of teaching. Examines the role of scholars and scientists in health policy reform. Using tools from leadership and innovation science, advances strategies to accelerate the use of interprofessional research in policy decisions and advances the national agenda for improving health and the quality and affordability of health care.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 602, 603, 604, 605, and 609
NUR	628	Palliative Care in Older Adult	Focuses on theory and research underlying end of life and palliative care for the older adult utilizing current practice guidelines and research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing graduate student

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NUR	629	Research Geriatrics	Gaining knowledge and skills in critical appraisal and synthesis of evidence to guide best practice in gerontology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only DNP 629 or NUR 629
NUR	630	Mechanisms of Disparities	Analyzes and applies the complex issues underpinning culture and health disparities related to a specific health outcome to research with a selected cultural group.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Mechanisms of Culture), 598 (Mechanisms of Disparities) or 630
NUR	631	Leveraging Culture	Analyzes the complex issues underpinning the development of evidence-based interventions among various cultural groups. Also analyzes methods of leveraging culture to optimize the development, delivery, effect and evaluation of health interventions for various cultural groups.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 630 (or NUR 598 Mechanisms of Disparities); Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Leveraging Culture in Intervention Development) or 631
NUR	640	Integrative Theories of Innov	Analyzes cross-disciplinary theories of innovation for improving health and quality of health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice or Advanced Nursing Practice (Innovation Leadership) DNP student or NUR 605; Credit is allowed for only NUR 640 or NUR 691 (Integrative Theories of Innovation in Healthcare)
NUR	641	Theories of Emergent Leadership	Analyzes cross-disciplinary theories of leadership. Emphasizes leadership frameworks that describe, explain and predict the relationships among leadership and healthcare innovation and outcomes.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 640. Credit is allowed for only NUR 641 or 691 (Theories of Emergent Leadership in Healthcare Innovation)
NUR	650	Human Lactation in Post-Modrn	In-depth exploration of the complex and multifaceted social, cultural and environmental contexts that affect the public health goal of improving successful breastfeeding during the first years of life.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only NUR 650 or 691 (Human Lactation in the Post Modern World)
NUR	670	Curriculum Development	Includes analyses of historical, philosophical, societal, environmental, cultural, technological, and educational factors of curriculum development in academic and practice settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Nursing Education) MS or Graduate Certificate in Nursing Education; Pre- or corequisite(s): NUR 671 with B or better
NUR	671	Teaching: Academic & Practice	Analyzes theories, issues, research related to teaching in nursing and educational leadership. Focuses on the process of teaching and learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program.
NUR	672	Design/Delivery:Mediated Instr	Addresses instructional design issues, theory, and practices related to online and electronically mediated learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	673	Produce & Evaluate Programs	Critical examination of standards, regulatory environment, administrative systems, leadership requirements, technological infrastructure, human factors, future trends regarding mediated education planning, production, and evaluation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	677	Teaching Intensive	Designed as a mentored teaching experience in nursing and a mentored exploration of the concept of scholarly citizenship as applied in the educator role in interdisciplinary, university-level education. Includes opportunities for students to examine different philosophies and theories of traditional and mediated teaching and learning; design content and learning experiences for selected topics; compare and contrast various culturally relevant, learner-centered strategies, technologies, media and Web-based tools for classroom and clinical use and analyze evaluation methods. Includes opportunity for exploring educational policy and translation of policy into best practices.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 677 or NUR 691 (Scholarly Citizenship: Teaching Intensive)
NUR	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688
NUR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		

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NUR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-15		
OBS	501	Obesity Prevention Management	Helps students understand the complex etiology of obesity and enhances their ability to work with individuals and populations at risk of obesity to develop effective behavior change-based strategies for prevention and management of the condition across the lifespan.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Obesity Prevention and Management MS major; Credit is allowed for only OBS 501 or OBS 598 (Obesity Prevention and Management)
OBS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
OBS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	10	Leadership Development	Trains and manages the student team leads for the Jump Start Program. Students learn ways to effectively manage, facilitate and lead group discussions and activities.	N	LEC	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0		
OGL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
OGL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	200	Intro to Org Leadership	Presents a broad survey of leadership theory and research as currently practiced in formal organizations. Includes examination of leadership models, power and influence, team leadership, cross-cultural leadership, strategic styles of interaction, ethics, leadership skill development, decision-making techniques and effective goal implementation.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	220	Behavioral Dynamics in Org	Explores the different theories, strategies and skills that managers and subordinates need to develop to improve interpersonal relations. Primarily emphasizes skill areas in leadership, motivation, communication, group dynamics, organizational development, conflict resolution, political strategy, cross-cultural relations, ethical behavior, stress management and time management. Develops effective strategies for becoming effective managers, subordinates, peers and students.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	240	Intro to Project Management	Offers insights into each step of the project management process through an examination of various theoretical approaches.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Credit is allowed for only OGL 240 or OGL 320
OGL	260	Resource Allocation in Org	Introduces the decision-making framework of resource allocation within the broader context of organizations and society. Students learn that resource allocation decisions are regularly guided by values, organizational purpose, and fundamental principles of value creation and sustainability. Primarily focuses on the development, management, and allocation of tangible and intangible resources; accounting statements; profit and loss drivers; risk, return and tradeoffs; and stakeholder accountability.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): MAT 117 or any course with General Studies MA designation OR Visiting University Student
OGL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		

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OGL	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	300	Theory Practice of Leadership	Presents an in-depth study of leadership theory and its practical application in formal organizations. Includes examination of the trait approach, situational approach, contingency theory, path-goal theory, leader-member exchange theory, transformational leadership, psychodynamic approach, and women and leadership. Emphasizes application of these theories in real-world case studies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	320	Foundations Project Management	Covers project management terminology, tools, best practices, theoretical approaches, the phases of project management and how they are applied developing a project plan and schedule, and other competencies needed to effectively manage projects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only OGL 240 or OGL 320 OR Visiting University Student
OGL	321	Project Leadership	Explores how executive management is responsible for conceiving, designing, implementing and managing the organization's overall objectives, culture, environment and processes as part of the project management process. Within this context, primarily focuses on understanding project management, aligning project management with the organization, project management oversight, projects as capital investments, globalization and resources optimization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 45 hours OR Visiting University Student
OGL	322	Project Time Management	Explores project scheduling and time management within the broader context of the planning effort. Students learn how important the determination of the timing and sequence of project activities is to the planning process--and ultimate project success. Primarily focuses on understanding bar charts, basic networks, the critical path network, precedence networks, resource allocation, schedule updating, schedule compression, scheduling and schedule risk management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	323	Project Cost Management	Concepts and complex processes of effective project cost management. Primarily focuses on project needs assessment, cost estimation, project cost control, project budgeting, cash flow management, financial management, value management, configuration management and supply chain management. Students also learn to appreciate the importance of integrating cost and value management processes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	324	Resources Project Management	Major elements of project resource management as well as the broader context of this critical planning function. Students learn that sound resource management is an important part of developing a sustainable competitive advantage in the emerging global marketplace. Primarily focuses on operations and productivity, resources in project management, product design, process strategy, layout strategy, human resources and job design, supply chain, inventory management and scheduling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	326	Project Procurement Management	Concepts and processes of procurement management. Primarily focuses on sourcing management, supplier selection, contracts and legal requirements, risk management, negotiation, project management, quality, supplier management and financial decisions. Effective procurement requires the use of good business practices capable of maximizing value to the organization through the acquisition of goods and services. Students learn that procurement professionals control the entire sourcing and acquisition process.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	340	Organizational Skills	Develops and enhances skills needed in effective organizations such as communication and the use of technology.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	343	Social Processes in Orgs	Examines the interdisciplinary nature of social processes and human interactions across a number of different organizational contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
OGL	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student

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OGL	350	Diversity and Organizations	Critical interdisciplinary analysis of individual, cultural, and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours; Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
OGL	355	Leading Org Innovation	Process and theory of strategic management with primary emphasis on situation analysis, strategy formulation, strategy implementation and strategy evaluation. Covers the strategic management context, external analysis, internal analysis, functional and competitive strategies, international strategies, strategic entrepreneurship and nonprofit strategy. Students understand the process of analyzing situations, developing appropriate strategies, putting those strategies into action, and evaluating and changing those strategies as needed.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
OGL	360	Assessment of Leadership	Empirical analysis of leadership, a conceptual model of effective leadership, and a practical guide for developing the competencies and attributes most likely to produce effective leaders. Primarily focuses on leadership competencies, organizational fit, leadership strengths, fatal flaws, leadership teams, leadership development, improvement measurement and leadership follow through. Students learn to distinguish between leadership success and leadership effectiveness.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	365	Organizational Contexts	Explores how organizations function by analyzing in depth a specific organizational context like health care, family, education, government, community, religion or the economy.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	375	Corporate Ldrshp - Starbucks	Examines leadership from the perspectives of the leaders of one of the most trusted and respected companies in the world, Starbucks.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Starbucks College Achievement Plan student; Credit is allowed for only OGL 375 or OGL 394 (Corporate Leadership: Starbucks)
OGL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	421	Project Risk Management	Philosophy, principles, practices and techniques for managing risk in projects. Covers risk identification, qualitative risk management, risk treatment, monitoring and review, project processes, risk allocation, environmental risk and quantification of project risk. Students learn that risk management assists project managers in setting priorities, allocating resources and implementing actions and processes that reduce the risk of the project not achieving its objectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student
OGL	422	Project Quality Management	Process and theory of total quality management with primary emphasis on the total quality approach, ethics and corporate responsibility, strategic alliances, quality culture, employee empowerment, leadership and change, team building, effective communication, and tools and techniques. Students understand how continual improvement of people, processes, products/services, and environments can enhance the process and outcomes of project management. Students have the opportunity to develop practical total quality management skills as they apply theory and practice to real-world cases.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student
OGL	481	Org Leadership Pro-Seminar I	Students draw on their experiences in previous organizational leadership courses, employing key concepts, theories and skills learned throughout the program toward the strategic analysis of organizations. Using Bolman and Deal's organizational frames concept, students synthesize key learnings across their education and explore organizations through four unique perspectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIS 340 or OGL 340; BIS 345 or OGL 345; BIS 350 or OGL 350; OGL 240 or OGL 320; OGL 300; minimum 90 hours

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OGL	482	Org Leadership Pro-Seminar II	Students draw on their personal background, individual differences, knowledge and skills to assess career choices that maximize their strengths, values and passions. Students explore their own balance between work and the other important elements in life, and develop strategies for living a meaningful and fulfilling life, at least through work. Explores the notion of career management and work/life integration from a number of different perspectives, and centered on one's own unique personal characteristics, life circumstances and goals. Explores some of the most relevant career management literature/theory, taking into consideration the interdisciplinary nature of this topic. Also connects students with some of the ideas learned in previous organizational leadership core courses, conducts a qualitative, thematic self-analysis, develops short-term and long-term career/life plans, and collect artifacts to help along life's journey.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; OGL 481 with C or better
OGL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
OGL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
OGL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7	L	Prerequisite(s): Organizational Leadership major; minimum 90 hours; BIS 343 and 345; ENG 102 or 105 or 108 with C or better; OGL 200, 220, 240, 260, 300, 321, and 350
OGL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
OGL	520	Social Psychological Perspecti	Social psychology is defined by the social influence that all people have on the beliefs, feelings and behavior of others. Studies social influences, the behavioral ramifications associated with the psychology of social processes and the ramifications for organizations and organizational leadership. The foundations of the field of social psychology, methodological approaches, interdisciplinary perspectives and application-oriented ideas and innovations form the basis for this course that integrates scholarship and applied social psychology to gain an enhanced perspective on the social influences associated with organizational and interpersonal behavior. From a leadership perspective, explores ideas as diverse as interpersonal influence, attitude formation and differentiation, stereotyping and prejudice, attraction, persuasion, obedience and aggression.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	530	Critical Perspctv Ldshp Theory	Engages the normative and epistemological underpinnings of many of the theories of organizational leadership studies. This critical engagement explores how assumptions about leadership and leadership theories may challenge or reinforce, overtly or not, oppressive social relations. Places leadership studies as an academic field in a broader social, political, cultural and ethical context to best address the embedded assumptions in leadership relations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	540	Evidence Based Inquiry	Provides a broad understanding of the methodological issues involved in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of research methods, whether inductive, deductive or abductive. Largely hands on with a focus on discussion and exercises.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	550	Leading Organizational Change	Organizations are a combination of structures, processes and relationships that bring people together to achieve a common goal. However, organizations do not operate in isolation—they are embedded in complex social, political and financial contexts. Leadership requires individuals to discern and balance competing demands and tensions inherent in organizations. Provides an overview of organizational theories to help leaders understand and be effective in these contexts. By looking at organizations through metaphorical lenses such as machines, brains and organisms, students learn how to create new options for organizational success in ever-changing operating environments. Applies theories to case studies to develop insights and innovative approaches to organizational change. A student deliverable is the creation of a plan to map out the student's capstone project in preparation for the applied project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 520; OGL 530; OGL 540
OGL	551	Ldshp Emotional Intelligence	Encourages greater knowledge of self through personal reflection, participation in experiential activities and numerous opportunities to make sense of discoveries. All of this occurs within the context of expanding knowledge of leadership skills and abilities. Encourages students to take every opportunity to learn about and bring insights to bear in classroom discussions. Shapes the leader within so that students are best positioned to lead in all areas of life. Over the next few weeks, explores the essential knowledge, abilities and values relevant to effective leadership. By the end of this course students have a greater understanding of their own leadership style and developmental plan for acquiring new leadership-related knowledge and abilities throughout their careers.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	552	Leading Diverse Teams	Helps students build more effective working relationships and improve their ability to lead, influence, cooperate and work effectively with others in today's increasingly team-oriented organizations. This course may differ from previous courses taken. At the center of the course is an intensive, unstructured learning group experience. The primary educational tool in this class is experience in a group (in this class referred to as a T-Group or Training Group). Other educational resources are readings, brief theory discussions, personal journals and a personal reflection paper after the class sessions conclude. These are fundamental for helping students to frame learning group experience and for facilitating learning. Emphasizes learning about oneself in the context of others based on the here-and-now experience of the group.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	553	Intercultural Leadership	In today's increasingly global and interconnected world it is important for leaders to understand the role that culture plays in one's leadership and communication style. Students obtain the knowledge and skills necessary to lead in culturally diverse environments. Through readings, discussions, video and interactive simulations, students gain a concrete understanding of a variety of leadership and communication styles that are found throughout the world. Students also increase their intercultural competencies and global awareness.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	554	Learning & Development in Orgs	Focuses on adult learning interventions and professional development within the context of a learning organizational setting. Integrates motivation and adult learning, current neuroscience, Bohm dialogue and instructional design. Develops the knowledge and skills needed to plan, design, develop, implement and evaluate adult learning interventions (materials, courses, curricula, programs) within different forms of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	555	Leading Beyond Conflict	Today's leaders are increasingly confronted with conflicts that escalate into issues that could result in costly litigation. Comprises a review and analysis of contemporary methods of alternative dispute resolution, including arbitration, negotiation and mediation, with a strong focus on mediation. Students learn about the alternatives to costly litigation and develop working strategies to take advantage of these alternatives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	556	Ldrshp Wcked Envrnmntl Problms	Environmental leadership promotes a societal change such that we move away from the perspective where economic growth is valued and takes precedence above all to one that both recognizes the limits and value of natural resources in our environment and embraces just conservation practice. The environmental challenges we are faced with today (e.g., climate change, renewable energy) are described as "wicked." Wicked problems are difficult to explain, plainly define, have no one solution, and are often the result of other indefinable problems. Environmental leadership focuses on engaging followers to jointly and creatively confront wicked challenges and promotes environmental justice addressing the relationship between social inequality and environmental quality among various stakeholders. Course critically evaluates these leadership dimensions. This examination is not limited to Western ideals found in corporate organizations but also extends to conservation practice in the developing world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	558	Leading Organizational Innovat	Every modern organization, regardless of sector or mission, needs leaders who understand the impacts of continuing innovation on organizational success and sustainability. Examines how leadership can facilitate innovative activities within every level of an organization. Students conduct independent research for integration into a collaborative team project in the development of a graphical conceptual model that includes factors such as culture, structure and collaborative activities that enhance organizational innovation.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	559	Modeling Sysms and Stkhldrs	Studies how leaders can use systems theory and stakeholder theory to assess the inputs from external stakeholders and their impacts on internal organizational systems. Using current literature, students work independently and in teams to build and apply a conceptual model of the significant relationships among organizational systems and stakeholders. Results highlight relationships among variables that can be tested using quantitative and/or qualitative research methods.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	561	Collaborative Governance	Exposes students to the opportunities and challenges of the non-market, non-state realm of nongovernmental organizations and how they facilitate private-public partnerships. Assesses the realm of action, appropriateness of their missions and where they find their limitations. Requires students to think globally and consider the roles of various actors of civil society with a critical eye.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	562	Resource Development in Orgs	Many types of resources are needed for organizations to achieve long-term sustainability. Surveys various capital resources firms need to succeed. Covers tools such as the International Integrated Reporting Council's six capitals framework (financial, manufactured, intellectual, human, social, natural) and theories that undergird these models. Through readings, case studies, and assignments, students learn about the process of value creation; the relationship between resources and an organization's business model; how the various forms of capital can be measured and reported; and what leaders can do to intentionally develop multiple forms of capital in a way that creates financial returns for the organization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	563	Leading Social Change	Focuses on methods used to reform social, cultural or political norms, beginning at the local level and connecting with movements for broader social change. Grassroots movements arise on all sides of the political spectrum, and local movements can unite activists around common goals despite larger ideological differences. The term "grassroots" is a misnomer, however, in that it implies the lack of leaders or of institutional support, whereas in reality, leaders attempting to change society must learn to network with a variety of stakeholders, from the level of individual neighbors to political leaders and large institutions. Students look critically and creatively at the ways local leaders have worked on a daily basis to promote community-based causes, in order to become more effective local activists, organizers, and civic and community leaders.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	565	Future of Wrk and Organization	Focuses on the dynamic nature of work, labor and occupations related to social and technological change; the impacts on workers, management and society. Also addresses new and changing occupations and leadership roles related to new economies of scale.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	568	Women and Leadership	Investigates how gender is produced, operationalized and reified in the workplace. Course content is specific to the role of women at work and in leadership. Emphasizes understanding the reproduction of gender inequality with a focus on how commonly shared beliefs about gender and other social categories operate through interaction to differentially affect the experiences of men and women in ways that often disadvantage women. Despite majority representation across a range of public and private sectors, women continue to be visibly absent from leadership roles. Although, some purport that progress has been made to narrow the existing leadership gap for women, more men than women achieve leadership roles and assume these positions at a faster pace than their female counterparts. What contributes to this ongoing phenomenon? What are the results of the underrepresentation of women in leadership? How might organizations intervene and cultivate equity in the workplace?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	569	Indigenous Ldrshp Diplomacy	Offers critical insights into how indigenous peoples around the world have responded to challenging issues in both historical and contemporary contexts by drawing from case studies, primary source materials, and emerging scholarship on indigenous leadership and diplomacy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	570	Analyzing Organizations	Focuses on the qualitative and quantitative research methods that are commonly used to assess organizations. Explores how best to frame organizational assessments and explore possible methodological choices for assessment design. Discusses both quantitative designs and qualitative approaches to organizational assessment. Focuses on planning assessments, making informed research decisions, understanding the ethical implications of organizational assessment, carrying out research and reporting finding.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	571	Advanced Leadership Assessment	Students reflect on and assess their advancement as leaders while also critiquing and assisting with the development of leadership abilities in colleagues. Leadership effectiveness and social dynamics are analyzed in contexts ranging from students' own experiences to narratives in historical, literary, anthropological, political and sociological contexts. Hands-on practice with leadership assessment surveys is central to the course, and students are trained in creating their own versions of qualitative and quantitative questions on 360-degree surveys.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	574	Qualitative Data Analysis	Research design and research methods in leadership using qualitative approaches.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 540
OGL	575	Quantitative Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in basic data analysis in leadership research. Exposes students to the assumptions, principles and applications of basic quantitative research methods and analytical techniques, such as t-test, ANOVA and simple regression. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 540
OGL	576	Adv Multivariate Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in applied multivariate data analysis in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of multivariate techniques, from multiple regression to mediation, moderation and conditional process analysis. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	577	Strct Eqtn Model Org Ldr Rsrch	Provides a broad understanding of the theoretical and methodological issues involved in structural equation modeling in leadership research. As such, exposes students to the assumptions, principles and applications of structural equation modeling. Uses SPSS and AMOS statistical packages.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	578	Agent-Based Modeling	Leadership is a complex process that involves multiple stakeholders, including followers, organizations and communities. Students learn to think about leadership processes systematically and learn to use NetLogo to build agent-based models capturing phenomena of interest. Also examines how the interactions among individual agents in the system create dynamics and emergent collective outcomes.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y		RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y		RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y		RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Organizational Leadership MS student
OGL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y		LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): Organizational Leadership MS student
OGL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
OMT	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 or TEM 230 OR Visiting University Student
OMT	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
OMT	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N		LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
OMT	343	Occupational Safety/Ergonomics	Health and safety movement, accident theories and effects, OSHA standards and liability, safeguarding, hazards, workers' compensation, ergonomics, and safety.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OMT	402	Legal Issues for Technologists	American legal system and impact on technology management issues: contracts, torts, intellectual property, white collar crime, antitrust, environmental, and employment.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	430	Ethical Issues in Technology	Topics in social responsibility for industrial technology and engineering.	N		LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours; Credit is allowed for only OMT 430 or OMT 504 OR Visiting University Student

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OMT	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431
OMT	440	International Business	International business principles and operations, including partnerships, trade agreements, currency issues, international sales, and cultural differences between countries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3	G	Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	452	Industrial Human Resource Mgmt	Explores the management of workplace issues and contemporary events as it relates to human capital within an organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better
OMT	480	Organizational Effectiveness	Explores the interaction of individual and group behavior with organizational efficiencies, strategies, structure and culture so organizations can work more effectively.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better OR Visiting University Student
OMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		
OMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Pre-requisites: Minimum Junior standing; Minimum 2.25 GPA
OMT	503	Marketing Management	Modern methods and industrial case studies of planning, pricing, promoting, and distributing goods and services in the global marketplace.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	504	Ethical Issues in Technology	Analyzes legal and ethical framework for making managerial decisions in the corporate environment of engineering- and technology-related industries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only OMT 430 or OMT 504
OMT	520	Strategic Mgmt of Technology	Analyzes entrepreneurial dynamics and technology development, methods of research and development management, new technology implementation, and start-up organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	548	Statistical Methods for Rsrch	Multivariate statistical techniques to analyze research data. Uses statistical software and applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	549	Research Techniques & Apps	Selection of research problems, analysis of literature, individual investigations, preparing reports, and proposal writing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	560	Managerial Decision Making	Focuses on structural thinking to make informed and optimal managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	570	Advanced Project Management	Planning, organizing, coordinating, and controlling staff and project groups to accomplish the project objective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only OMT 570 or TMC 470
OMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	112	Identity Service America Democ	Introduces the history of American democracy and civic engagement, while developing civic identity through hands-on democracy-in-action assignments. Examines the rich history of civic engagement as it applies to different races, sexes, genders and religions to unpack the what, why and how of getting involved and making a difference in public service. Examines cultural identity, including diversity of race, sex, gender and religion, as it contributes to social, civic, political and democratic life. Understanding how to participate in civic society culminates in the creation of a plan to contribute to the ongoing mission of sustaining a vibrant, healthy and unifying American democracy.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB & C	Credit is allowed for only CPP 112 or CPP 194 (National Service and American Democracy) or PAF 112 OR Visiting University Student
PAF	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		

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PAF	200	Public Serv & Policy in 21st C	Provides a broad introduction to the field of public service and leadership. Topics include an overview of management, policy, urban studies, and leadership in the public sector. Covers the history and development of the public sector, as well as how it serves contemporary society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	201	Economics and Public Policy	Introduces the terminology and methods of analysis in microeconomics. In particular, examines the behavior of individual consumers and firms, with a focus on market failures and the role of government policy in correcting those failures. Applies microeconomic principles to the distribution of income, policies for eliminating poverty and discrimination, the problems of environmental pollution, and the impact of different market structures on economic activity.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	
PAF	203	Cross-Sector Collaboration	Examines how public, private and nonprofit organizations seek to address social challenges and explores how the three sectors work together and in isolation to tackle social problems. The motivation of employees in the public, private and nonprofit sectors and the ways in which organizational structure, environment and legal contexts differently constrain or facilitate action within and across these organizations. Explores effective strategies for collaboration among the public, private and nonprofit sectors and identifies organizational similarities and points of contrast that could enhance or create barriers to such collaboration.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): enrollment in the second year of Next Generation Service Corps or Reserve Officer Training Corps (all branches) and completion of first year in Next Generation Service Corps
PAF	220	Introduction to Urban America	Investigates traditional and evolving forms of civic engagement and management. Examines leadership and organizational models to urban development and decision making.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	240	Urban Policy	Examines major theories about the purposes and processes of urban policy formulation, adoption, and implementation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	C	
PAF	300	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student
PAF	301	Applied Statistics	Focuses on statistical techniques used in social science research. Applies concepts such as measures of central tendency and dispersion as well as statistical techniques, including the following: one-sample z and t tests, two-sample t tests, chi-square, and correlation. Goals include helping students understand the mathematical and statistical concepts presented and assisting them in using these concepts in everyday life and in the study of social sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	CS	Prerequisite(s): MAT 142 or higher OR Visiting University Student
PAF	302	Public Service Research Method	The philosophy, scope, and methods of public sector research. Examines quantitative and qualitative research methods and research design.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Urban and Metropolitan Studies BA or BS major OR PAF 301 with C or better OR Visiting University Student
PAF	305	Urban Governance	Examines major shifts and trends in urban America. Concentrates on the changing approaches to governance and policies of urban areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	311	Leadership and Change	The leader's role in bringing about significant organizational and societal change with special attention to group and organizational behavior dynamics, establishing a vision, mobilizing and empowering individuals and groups, and assessing outcomes of the change process in a variety of settings.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student
PAF	340	Contemporary Policy Challenges	Develops conceptual, critical, and practical understanding of public policy, the policy process, and policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
PAF	350	Intro Science & Tech Policy	Explores the variety of ways in which governments make policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	351	Urban and Metropolitan Studies	Examines the city using a multidisciplinary approach drawing from different historical, cultural, social, philosophical, and economic issues and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	352	Urban Theory	Examines the sociological, economic, and political theoretical positions underlying the development and evolution of metropolitan areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	360	Emergency Management I	Emergency management, including basic issues of all-hazards management, phases of emergency management and basic operational systems of incident command and the broader incident management system in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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PAF	361	Hazards and Risk Management	Overview of natural and technological hazards and disasters, including core concepts and evidence in the field. Introduces concepts of risk and risk management and how they are used in emergency and disaster preparedness, response and mitigation operations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	363	Tech in Emergency Management	Explores latest apps, software and social media used in planning (e.g., GIS for hazard mitigation), public crisis communications (via apps or social media platforms) and incident response platforms (for resource and operations coordination). Emphasizes hands-on experience with such tools.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): MAT 142
PAF	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	400	Senior Capstone Project	Teaches students to solve problems related to the public sector by applying theory, knowledge, and methods from previous courses to a hands-on project in the community. Seminars include guest speakers and discussions on professional development. Students work as individuals and as a team to prepare research papers and a professional report that is presented to the community.	N	LEC	Y	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 200 with C or better; PAF 201 with C or better; PAF 301 with C or better; PAF 302 with C or better; PAF 311 with C or better; PAF 340 with C or better; PAF 460 with C or better OR Urban and Metropolitan Studies BA or BS student
PAF	405	Citizen Engagement & Com Bldg	Develops a conceptual, critical, and practical understanding of urban dwellers' involvement in community affairs as citizens and as builders of vital neighborhoods and vibrant cities.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	406	Public Admin & Community Dev	Critically examines the concepts community and development and considers how important forces such as diversity, civic life, changes in social space, and globalization, affect our understandings about these concepts and influence our actions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	410	Building Leadership Skills	Introduces understanding and developing leadership skills, including an examination of leadership theories and models from multidisciplinary and crosscultural points of view, an assessment of the student's leadership capabilities, and practical applications to improve individual leadership capabilities.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours; Credit is allowed for only PAF 410 or URB 410 OR Visiting University Student
PAF	420	Managing Across Boundaries	Within the U.S. system of federalism, thousands of governments interact at different levels on issues ranging from taxation and education to zoning and water. Further, governments at all levels interact with nonprofit and industry sectors to provide public services and collaboratively address complex regional and, increasingly, global challenges. Finally, governments and other service providers interact across local, state, regional and national boundaries. Examines how to manage across boundaries (e.g., governmental, nongovernmental, stakeholders, communities, sectors). Emphasizes intergovernmental relations from the perspective of local and state governments; also exposes students to interstate and international forms of intergovernmental relations. Exposes contemporary public management frameworks and applies these frameworks to understand how leaders manage increasingly complex public challenges.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	421	Leadership Capstone	Builds upon leadership courses in the Leadership and Ethics certificate program by applying concepts and examples from the readings as well as individual experiences.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): CPP 301 or PAF 410; PAF 311
PAF	424	Emergency Management II	Accidents and emergency situations have plagued man since the beginning of history and will undoubtedly occur during our conceivable future. Armed with knowledge and skills for managing such occurrences can lessen their impact on society. Presents the theories, principles and approaches to emergency management. Discusses the philosophy of comprehensive emergency management with the four attendant steps which include mitigation, preparedness, response and recovery. Presents an analysis of past disasters along with their impacts on policy formation leading to the current FEMA all-hazards approach. Discusses the role, duties and importance of the emergency manager throughout the course. Reviews contemporary threats such terrorism. Finally, presents legal issues involving emergency management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 360 with C or better

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PAF	425	National Incident Mgmt System	Covers concepts, terminology, players, compliance requirements, including doctrine of National Incident Management System per HSPD-5. Discussion of National Response Plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	460	Public Service Ethics	Role, values, and issues of public management in democratic governance, citizen participation, power structures, and professional codes of conduct.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	461	Homeland Security	In-depth analysis of policies, procedures, and organizational structure for effective homeland security program. Covers all hazard/all risk philosophy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PAF 461 or CRJ 554 OR Visiting University Student
PAF	468	Planning and Exercises	Requirements, planning, conduct, and critique of exercises related to emergency planning. Emphasizes realism using moulage and props.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	469	Terrorism Defense	Explores the background and evolution of terrorism. Presents specific tactics for preparation for and response to acts of terrorism.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 598 (Terrorism Defense) or PAF 469 OR Visiting University Student
PAF	470	Topics Public Econ & Fin Mgt	Provides an analysis of public economic practices and problems in a federal system. Presents detailed descriptions, where appropriate, of significant institutions and applies modern economic theory to the ways that these institutions finance and deliver services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): ECN 212 or PAF 201 with C or better
PAF	471	Public Policy Analysis	Provides further study in the concepts, models, and operational methods used in public policy decisions and analysis. Enables students to develop higher skills needed for defining policy issues, identifying alternative solutions, and predicting the potential impact of policy alternatives.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 301 with C or better; PAF 340 with C or better
PAF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6		Prerequisite(s): Barrett Honors student
PAF	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PAF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-7		
PAF	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-3		
PAF	501	Public Service Research I	Philosophy, scope, and methods; public service research design, values, and ethics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	502	Public Service Research II	Quantitative techniques including multivariate analysis, data analysis, decision making, and computer applications in public affairs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501 with C or better
PAF	503	Public Affairs	Development and context of American public administration and policy, role of administration in governance, and values and ethics in administration.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	504	Microecon of Public Policy I	Provides key principles of microeconomics. Places particular emphasis on developing the analytic tools of economic reasoning and using these tools to examine policy interventions of interest to public managers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	505	Public Policy Analysis	Institutional and formal analysis of policy processes, decision making, and problem solving; values, ethics, and the uses of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	506	Public Budgeting and Finance	Legal, social, economic, political, institutional, and ethical foundations of governmental finance, budgets, and budgeting.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	507	Public Human Resource Mgmt	Personnel systems, behavior and management of people in public organizations, collective behavior, unionism, conflict management, motivation, productivity, and ethics.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	508	Organization Behavior	Theory and application in the management of organizational behavior with emphasis on leadership and the public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		

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PAF	509	Public Affairs Capstone	Capstone application of core course knowledge, skills, and abilities required for public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501, 502, 503, 504, 505, 506, 507 and 508 with C or better
PAF	520	Public Management	Management process in government and public agencies, with emphasis on the executive leadership within the public sector.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	521	Managing Public Money	Overview of public financial management, including budget planning and execution; capital budgeting, debt management and administration; funds management and investment; and financial control.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 506
PAF	522	Adv Govt Financial Mgmt	Focuses on capital budgeting and infrastructure financing. Covers information required to finance a capital improvement plan, specifically for infrastructure items such as streets, parks, public utilities, airports, highways, bridges and tunnels, and other public works. Combining strategy as well as process, examines financial management from different perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Public Administration MPA student
PAF	523	The City and County Manager	Manager's role and resources in the differing forms of administrative, legislative, and community sectors.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	525	Public Entrepreneurship	Explores entrepreneurship in the public sector from various angles, including small and large communities and nonprofits.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	529	Org Change and Development	Explores the nature and management of change and development as a tool to achieve organizational goals; effecting planned change.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	530	Mgmt of Urban Government	Administrative practices and behavior within the urban political administrative environment. Functional areas such as citizen participation, urban planning, urban transportation, and the conflicts between urban politics and administrative efficiency.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	531	Community Conflict Resolution	Interdisciplinary approach to understanding the dynamics of community conflict. Strategic considerations in policy design and advocacy; potential reaction to conflict. Relevant models and research findings generated by both case studies and comparative methods.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	534	Urban Services Infrastructure	Provides an overview of the network of services being provided in the urban environment by a variety of governmental and nongovernmental agencies. Discusses coordination, cooperation and overlap of services by local, special district, county, regional and state levels, alternate delivery methods including nonprofits, and the evolving relationship of these services.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	540	Adv Policy Analysis	Emphasizes the structure of policy problems, forecasting policy alternatives, optimizing resources, and reducing uncertainty in policy making.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 505 with C or better
PAF	541	Program Evaluation	Various methodologies available for the evaluation of public policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 501 with C or better
PAF	544	Urban Policy	Understands major theoretical frameworks, methodological approaches and substantive issues emphasized in urban policy research. Hones skills in policy analysis.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545
PAF	546	Environmental Policy and Mgmt	Analyzes environmental policy and planning issues and principles related to the analysis and management of natural and urban/regional resources.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	547	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516

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PAF	548	Women/Politics/Public Policy	Explores how political philosophy, politics, and public policy affect and are affected by women.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	552	Integrated Emergency Mgmt	Theory and practice of comprehensive emergency management. Explores scope and function of Department of Homeland Security.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	555	Information Tech in Emerg Mgmt	Provides theory and application of computer-based programs in emergency management and the use of various emergency modeling programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	560	Community Resilience	Examines community resilience from a systems perspective, embracing governments, private, nonprofit and civic roles. Presents research, case studies, and strategies for policy planning and implementation. Provides an understanding of how community members respond to the need to prepare for, endure and recover from disasters and the ability to utilize multiple communication methods to help community members before, during and after these emergencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	561	Interoperability Emergency Mgrs	Enables understanding of the multiple technologies and skills utilized by emergency managers to enhance successful coordination and communication between all levels of emergency managers and responders during emergency mitigation, prevention, preparedness, response and recovery operations.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	562	Higher Education Policy	Broad overview of higher education policy. As used here, the term "policy" in higher education refers to government-produced policies (e.g., federal grants policy, state policies for university budgets) but also university-produced policies (e.g., strategic alliances, policies for faculty or student conduct). Despite the breadth of coverage, there is one theme permeating the course: universities as "public values-based institutions," including social impact, social engagement, outreach and economic impact.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PAF 562 or PAF 591 (Higher Education Policy)
PAF	565	Theories & Practices Democracy	Critically explores the wide range of ideas, issues, challenges, and promises related to democracy in theory and practice. Intended for all students interested in democratic leadership, public service, civic engagement, and participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	566	Part Govern & Civic Engagement	Examines classic and current theoretical debates on participatory governance and civic engagement, discusses theoretical and practical implications, and analyzes different models of participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	570	Microecon of Public Policy II	Provides the policy tools to solve economic problems such as market concentrations, market failures and externalities, and asymmetric information. Increasingly, government interventions are moving away from a command-and-control-style of direct provision of goods and services and toward a large menu of indirect approaches implemented through a complex system of third-party actors. Government intervention in private markets now entails loans and loan guarantees, grants-in-aid, contracts, vouchers, social and economic regulation, and many other policy tools. Each of these instruments involves vastly different behavioral distortions, policy technologies, political considerations and technical sophistication. Analyzes the economics of four policy interventions: grants, tax expenditures, social regulation and vouchers. Provides an overview of each tool (including its key design features) and combines economic theory with background information on how public policies actually operate.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 504 with C or better
PAF	571	Geographic Info Sys/Analysis	Provides foundational information related to application of GIS technology to meet various needs within governmental operations, administration, and public policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	573	Applied Econometrics	Applied treatment of the most important modern econometric methods used to evaluate public policies. Help students become savvy consumers of econometric methodology and develops the methodological skills necessary for implementing quantitative evaluations of public policies. Accordingly, course stresses critical thinking and creativity.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 502 with C or better
PAF	574	Diversity,Ethics,Public Change	Focuses on leadership, ethics, and benefits and tensions of the multicultural city to develop leadership and multicultural competence.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		

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PAF	579	Public Policy Capstone	Integrative, client-based project course.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		
PAF	582	E-Public Administration	Explores how new techniques and technologies for using, processing and managing information are changing how we interact, work and serve. As an example of this very concept, this course is offered online. During the semester, managers explore current trends, use a wide variety of information and communication tools, and have manager-created content consistent with new trends of online participation. By the end of the course, managers have experience with tools (including Wikis, Blogs, search engines, collaboration tools, reputation systems, social networks, virtual worlds); are familiar with current information issues (transparency, privacy, equal access, governance); and explore how they are relevant to a variety of contexts (local government, non-profits, public service).	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	585	Strat Planning Public Leaders	In an age of diminishing resources, the tools of strategic planning have become crucial for every public sector and non-profit manager. How can a public sector agency (or non-governmental organization) achieve its goals and advance its mission? How can it motivate its people given the absence of the sorts of incentives often found in the private sector? How can these organizations respond to a rapidly changing political, economic and social environment? These are among the questions that are addressed.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	586	Data Analytics for Public Good	Explores techniques used for data extraction, analysis and visualization. In particular, students engage with social media data, devise solutions to address data-poor scenarios, and explore the potential of sentiment analyses to elucidate opinion trends and predict future attitude shifts. Discusses data visualization techniques and engages students with Tableau software. Also explores the social, political and ethical considerations associated with building and managing data analytics programs in the public sphere. Explores issues-critical dilemmas when it comes to issues such as data privacy, data protection, predictive analytics, personalized service delivery and resource provision, algorithmic regulation, and large-scale data analytics for administrative efficiencies and resource management optimization, among others.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	587	Federal Budgeting & Tax Policy	Provides a broad understanding of federal budget and tax policy issues. The knowledge acquired in this class enable students to act as competent parties in the formulation of public policy within the federal budget and tax policy domains. Approximately one half of the class is devoted to federal budget processes and concepts including purposes, coverage, scoring, performance evaluation and proposed options for reform. The second half covers tax policy issues. Throughout the course, focuses on those budget and tax policy issues that are the current subject of political attention.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	588	Global Public Policy	The study of public policy has traditionally focused on the operations of government agencies within national borders. Increasingly, however, public officials at all levels of government must confront challenges and opportunities that exist across borders. Whether the issue is immigration, national security, trade and finance, or the environment, public managers must be aware of global pressures and, in many cases, respond to them. This course gives managers the analytical tools to understand how global issues are currently being managed and what they might do to make the most of global opportunities.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	589	Leadership in Public Orgs	Provides the foundation of theory and practice of administrative leadership. While students learn about all the major theoretical frameworks, focuses on an applied action research model that is useful in analyzing and developing oneself and others in organizational settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
PAF	601	Advanced Public Policy Seminar	This advanced seminar in public policy has a single objective: to develop a critical thinking of theoretical perspectives developed to analyze several dimensions of public policy. Focuses on theories and perspectives across specific policy areas since the objective is to get used to analytical lenses, not a specific policy area. This objective is achieved by reading required books each week. This class requires the ability to critically analyze a body of literature as a prerequisite for advancing that literature. The general format of this course includes reviews of class material and discussion. Prior to each class, students are expected to read the required books listed in the syllabus. Students are responsible for contents included in the readings, even if it is not explicitly reviewed in class.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	602	Adv Rsrch Desgn for Public Pol	The logic, design and conduct of applied social research for students interested in public management and policy. Traditional scientific explanatory research is a necessary prerequisite for any prescriptive research. The primary orientation of this course is to focus on development of social science explanations for public administrative phenomena and the development of research designs which permit testing of hypotheses derived from these explanations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	603	Adv Econ Public Admn & Policy	Theory of utility and demand, theory of the producer, organization, operation of product and factor markets, market equilibrium, regulation, risk and uncertainty, general equilibrium and welfare policy, market failure, public goods and taxation, and game theory.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): PAF 504 with C or better; doctoral major
PAF	604	Intellect Foundns Public Admn	Explores significant developments and themes in the theory of public administration, especially American public administration. Major foci in this seminar include the historical development of public administration as a body of thought and as a theory of politics; the enduring theme of public administration and democracy; various possible unifying themes, theories, and criteria; and prospects for future theory and research. Aimed at encouraging advanced students to refine their abilities to identify, analyze, interpret, critique, evaluate, and contribute to the literature and intellectual developments of this field of scholarship, as well as to place current and emerging trends in broader context. Builds on more basic courses in public administration and is intended in part to assist students in preparation for doctoral preliminary examinations in public administration. Assumes that students have a solid understanding of American government and bureaucracy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	605	Org. Theory and Behav. Seminar	Advanced survey of organization theory (OT) and organization behavior (OB) literatures for doctoral students. The seminar pursues multiple goals. It examines the intellectual foundations and historical progression of OT/OB research and explores the craft of conducting social science research related to OT/OB. Specifically analyzes how current literature in public management and administration applies organization theory for research. Develops a research-based understanding of main schools of organization theory so that students gain skills to enable them to engage OT/OB theories in their own research.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to doctoral program

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PAF	609	Adv. Quant. Methods Sem.	Provides opportunity to learn the tools necessary for carrying out empirical work through hands-on data work and analysis. Students learn how to specify and estimate linear regression models and test hypotheses about model parameters under different statistical assumptions. Students become proficient in programming statistical routines.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Prerequisite(s): admission to doctoral program
PAF	610	Adv Qualitative Methods	Explores a number of qualitative research approaches and methods, including ethnography, ethnomethodology, participant observation, interviews, focus groups, content analysis, discourse analysis, and some comparative/historical methods. Also exploreS the important theoretical and ethical issues that bear on these approaches.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Pre-requisites: PhD student
PAF	620	PA Prof Development Workshop	Prepares doctoral students to become productive and effective public administration scholars, teachers, and researchers.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	3		Pre-requisites: Doctoral PAF student
PAF	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
PAF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-15		
PAF	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Public Affairs	1		
PAF	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Watts College of Public Service & Community Solutions	School of Public Affairs	1-15		
PAX	230	Intro to Peace Studies	Intensive, one-semester introductory course. Explores multidisciplinary approaches to the study of peace, conflict and human rights as well as the historical background of peace studies (trans)disciplinary orientation. Knowledge gained in peace studies can be applied toward education, policy, law, cross-cultural communication, community-based organizations, nongovernmental organizations and ethics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G	
PAX	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
PBH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
PBH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests..	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300

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PBH	310	Epidemiology in Public Health	Essential principles and practices of public health epidemiology. Increases an undergraduate student's ability to analyze problems and make decisions based on application of epidemiologic concepts and methods in a variety of settings. Students gain experience communicating epidemiologic findings in both written and oral formats. Includes applied hands-on exercises in analysis of epidemiologic data, case studies and critical review of epidemiologic methods used in scientific literature.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 300; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	355	Research Methods Public Health	Society incurs high opportunity costs when public health interventions which yield a high health return on investment are not implemented, or when resources are expended on interventions with low health returns. Public health practitioners should, therefore, incorporate the best scientific evidence in planning, implementing and evaluating public health policies and programs. Covers concepts and tools of public health research where the research objective is to provide evidence that informs and improves decisions regarding the allocation of public health resources. Covers basic components that inform evidence-based decision making, namely: accessing the best available scientific evidence; developing research questions, collecting and analyzing qualitative and quantitative data; using data and information systems methodically; and adhering to standards of ethical research.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 310; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402
PBH	410	Public Mental Health	Explores public mental health research and practice. Considers social determinants, social theory, population assessment methods, ecological models, risk, resiliency, and behavioral health systems of treatment and prevention.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
PBH	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
PBH	435	Environ & Occupational Health	Environmental health designed to address public health issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
PBH	455	Pub Health Program Evaluation	Federal, state and local policies shape the nature of the public health programs implemented in communities. Public health professionals are often responsible for evaluating, at multiple levels, the programs that result from such policies. Provides public health students with the analytical tools necessary to manage the implementation and evaluation of public health programs. Program evaluation serves many important functions. It supplies information to managers who are charged with implementing public health programs and to policymakers who face decisions about which programs to fund, scale back, expand, modify or eliminate. Evaluation is an accountability tool: when a public health agency decides to finance a program, they have a right to ask what their funds bought. Evaluation is also a vehicle for improving public health programs. By identifying what works and what does not—and how new programs fare relative to existing practice—policymakers and managers can improve program designs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 355
PBH	482	Capstone I	First course in capstone sequence wherein a student identifies a project to complete in Capstone II and conducts background research. Projects are related to broad topics explored during prior coursework in the student's program.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): minimum 45 hours

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PBH	483	Capstone II	Independent study in which a student, under the supervision of capstone coordinator, conducts research that is expected to lead to a specific project such as a thesis, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript. Capstone II projects can be done in conjunction with a health care organization or health agency.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 482 (or HCD 482)
PBH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PHI	101	Introduction to Philosophy	Explores issues that philosophers have traditionally considered, including morality, reality, and knowledge.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	103	Principles of Sound Reasoning	Fallacies, validity, and soundness of arguments. May include syllogistic, elementary symbolic, inductive logic, and scientific method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
PHI	105	Intro to Ethics	Philosophical examination of such questions as, How should we live? Is morality a social invention? Does anything matter?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	107	Intro Philosophy of Sex & Love	Examines philosophical views of the nature of sex and love, their relation to gender and sexual ethics. Focuses on the historical development of these concepts and contemporary moral and political debates over issues such as same-sex marriage, polyamory, pornography and free speech, objectification, cybersex, and consent to sex.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Credit is allowed for only PHI 107 or PHI 394 (Philosophy of Sex and Love)
PHI	120	Intro to Medical and Bioethics	Philosophical examination of moral problems that arise in medicine and biology, e.g., end-of-life, reproduction, and patient's rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman student; Maximum 25 hours
PHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	300	Philosophical Argument/Exposit	Develops techniques of philosophical argument and exposition. Frequent written exercises. Course content may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): Philosophy major; ENG 102 with C or better; minimum 25 hours OR Visiting University Student
PHI	303	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 102, 105 or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions), PHI 303 or REL 300
PHI	304	Existentialism	Covers such topics as absurdity, authenticity, the meaning of life and death, responsibility, and subjectivity. May include readings in phenomenology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	306	Applied Ethics	Philosophical discussion of contemporary moral and political issues, such as abortion, euthanasia, animal rights, affirmative action, and sexual rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	307	Philosophy of Law	Nature and source of law and its relation to morality. Legal rights, legal enforcement of morals, civil disobedience, liability and responsibility, punishment, judicial reasoning, justice, property, and differences between theories of natural and positive law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	310	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student

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PHI	311	Philosophy and Literature	In-depth study of selected literary and philosophic texts. Addresses philosophical problems such as the nature of moral goodness and human relations; the purpose of life; or the relations among beauty, truth and justice. Also addresses whether literary aspects of philosophical texts such as myth, image, metaphor or rhetorical devices contribute to meaning or promote ethical insight as well as interdisciplinary tensions and bridges between rhetoric and philosophy.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
PHI	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
PHI	318	Philosophy of Religion	Classical arguments for the existence of God. Argument from evil against the existence of God. Justification of religious belief.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	319	Philosophy, Computing & AI	Philosophical problems surrounding artificial intelligence (AI). Thinking as computation and AI; the ethics, epistemology and metaphysics of computing.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	320	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
PHI	322	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
PHI	324	Existential Ethics	Ethical aspects of theistic and atheistic accounts of existentialist philosophy. Freedom and responsibility and their significance in human experiences.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
PHI	325	Philosophy of Social Science	Philosophical problems surrounding the aims, structure, and methods of the social sciences.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	
PHI	326	Philosophy of Happiness	Examines ancient and contemporary philosophical models of happiness and consideration of criteria for living a life of human flourishing.	N		LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	328	History of Ancient Philosophy	History of Western philosophy from its beginnings through the Hellenistic period.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	329	History of Modern Philosophy	History of Western philosophy from the Renaissance through Kant.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	330	Theory of Knowledge	Nature, sources, and limits of human knowledge. Topics may include truth, a priori knowledge, empirical knowledge, perception, induction, and skepticism.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	331	Philosophy of Language	Problems pertaining to the nature of language, including meaning, reference, truth, definition, analyticity, translatability, synonymy, and contributions of contemporary linguistics.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours
PHI	332	Metaphysics	Problems pertaining to the nature of reality. Topics may include nature of person, minds, substance, universals, space, time, causation, and modality.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	333	Symbolic Logic	Studies symbolic techniques to represent knowledge, deductive arguments, refutation by counter-example, and model-theoretic representation. Covers propositional and first-order predicate logic and provides a deeper understanding of theories about the world and of reasoning in life generally. Students gain a valuable tool for any field or discipline in which rigorous thinking is necessary such as science, medicine, business and the legal profession.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 243 or MAT 300 or PHI 103 with C or better; minimum 25 hours OR Visiting University Student
PHI	334	Philosophy of Mind	Nature of consciousness. Common sense view of mind, behaviorism, materialism, dualism, functionalism, self-knowledge, and knowledge of other minds.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	335	History of Ethics	Major works of moral philosophy, both ancient and modern, such as those by Plato, Aristotle, Hobbes, Hume, Kant, and Mill.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	336	Social/Political Philosophy	Alternative principles and methods relevant to problems of human association and conflict; discusses justice and power, freedom and equality, and autonomy and order.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student

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PHI	337	Ethical Theory	Theories in normative ethics about the nature of what is right and wrong, good and bad, virtuous and vicious. May include issues in metaethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	338	Metaethics	Concerns questions about the nature of value, morality, and normativity in general, such as "Is morality objective, subjective, or relative?"	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 25 hours. Credit is allowed for only PHI 338 or PHI 420 (Metaethics)
PHI	339	Philosophy of Art	Central problems in philosophy of art, e.g., the nature of a work of art, modern and traditional theories of art, aesthetic perception and experience, and objectivity and relativity in art criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	347	Phil Theories of Constitut Law	In-depth study of the philosophical theories surrounding constitutional rights and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	360	Business & Professional Ethics	Examines moral theories applied to cases of corporate responsibility, property rights, environment, fairness, profit, employee rights, and responsibilities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	370	Sports Ethics	Studies moral issues in sports, including but not limited to the nature and application of sportsmanship, the prohibition of performance enhancing drugs, ethical issues in the economics of sports, the role of violence, and fandom.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours; Credit is allowed for only PHI 370 or PHI 394 (Sports Ethics) OR Visiting University Student
PHI	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
PHI	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 357, PHI 391 or REL 391
PHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	401	Rationalism	Examines classical philosophical rationalism, as in Descartes, Spinoza, Malebranche, or Leibniz. Contemporary rationalist thought may also be examined.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours
PHI	402	Empiricism	Examines representatives of either classical or contemporary philosophical empiricism, e.g., Bacon, Hobbes, Locke, Butler, Berkeley, Reid, Hume, Mill, Carnap, and Ayer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy student; minimum 56 hours
PHI	403	Contemp Analytic Philosophy	Aims and methods of such 20th-century philosophers as Frege, Moore, Russell, Wittgenstein, Carnap, Ayer, Wisdom, Ryle, Austin, Strawson, Quine, and Sellars, with application to metaphysics and epistemology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy BA major or Philosophy (Morality, Politics and Law) BA major; minimum 56 hours
PHI	405	Moral Psychology	Advanced study of key, contemporary authors and issues in moral psychology as a subfield of philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
PHI	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
PHI	408	Feminist Ethics	Philosophical exploration of the theoretical and practical aspects of ethical issues affecting women from diverse feminist viewpoints.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409

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PHI	411	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the 19th and 20th centuries. Kant's critique of the theoretical, practical, aesthetic and religious foundations articulates this crisis in Western philosophy, society and culture. Explores Continental thinkers and schools of thought in light of Kant's understanding of this crisis. Figures might be Nietzsche, Marx, Freud, Kierkegaard, Husserl, Heidegger, Benjamin, Adorno, Marcuse, Sartre, de Beauvoir, Irigaray, Kristeva, Spivak, Habermas, Lévinas, Marion, Derrida and others. Schools of thought considered may include existentialism, phenomenology, hermeneutics, critical theory, poststructuralism, deconstruction, feminist theory, critical race theory, postcolonial theory, and comparative philosophy. Continental philosophy dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours. Credit is allowed for only PHI 411 or PHI 494 (Continental Philosophy & Religion) or PHI 494 (Studies in Continental Philosophy)
PHI	412	Philosophy & Lit Criticism	Explores dynamic tensions between philosophical and literary critical approaches to texts. Aims to identify distinct ways that literature and critical practices "philosophize" about truth, moral dilemmas or existential struggles. Probes the challenges that each form of inquiry, philosophical and critical, poses for the other. Seeks to enhance understanding of the philosophical underpinnings of key literary works. May address poetry, novels and other media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; minimum 30 hours. Credit is allowed for only PHI 412 or PHI 494 (Philosophy and Literature) or ENG 401 (Philosophy and Literary Criticism) OR Visiting University Student
PHI	413	Advanced Symbolic Logic	Properties of formal systems axiomatizing propositional and 1st-order predicate logic. May also include modal logic, number theory, and limits of logicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy student; minimum 56 hours; Credit is allowed for only PHI 413 or PHI 556
PHI	415	Philosophy & Film	Introduces philosophical themes via the medium of film. Students read classical and contemporary literature in philosophy, view films that portray philosophical concepts, and demonstrate their understanding through writing assignments and class presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only PHI 415 or PHI 294 (Philosophy and Film)
PHI	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
PHI	420	Topics in Philosophy	Course descriptions on file in department.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours OR Visiting University Student
PHI	421	Philosophical Topics	Focuses on important issues within the discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	422	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
PHI	439	Philosophy: Love & Sex	Advanced introduction to historical and contemporary philosophical writings and sociological case studies on the philosophy of sex and love.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only PHI 439 or PHI 494 (Philosophy of Love and Sex)
PHI	448	Justice and Reparations	Advanced study of the moral basis of reparations and reparative justice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 420 (Jus/Reparations) or PHI 448 or PHI 527
PHI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student

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PHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
PHI	520	Topics in Applied Philosophy	Selected topics in applied philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	521	Bioethics	Addresses current controversies and major topics in bioethics and biosciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Found-Bioethics) or PHI 521
PHI	522	Ethics of Sustainability	Explores the normative framework of sustainability.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Topics in the Ethics of Sustainability) or PHI 522
PHI	524	Disaster Ethics	Investigates moral and political questions connected to disasters and emergencies such as obligations of aid workers, responsibilities for preparedness and rebuilding, and related social justice questions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Ethics and Disaster) or PHI 524
PHI	525	Rational Choice	Recent philosophical work on rational decision making.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Rational Choice) or PHI 525
PHI	526	Evol and Strategic Interaction	Recent work on the philosophical significance of evolutionary models of social interactions and social structures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	529	Feminist Philosophy	Examines contemporary feminist work in some of the subfields of philosophy, such as ethics, political philosophy, epistemology.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Feminist Philosophy) or PHI 529
PHI	530	Moral Psychology	Central issues and texts in moral psychology including the impact of psychological research on philosophical theorizing.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	532	Experimental Philosophy	Examines experimental work taken to directly bear on important philosophical theories.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Experimental Philosophy) or PHI 532
PHI	540	Topics in Value Theory	Selected topics in value theory.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	541	Normative Ethics	Explores one or more leading normative ethical theories that inform the contemporary discussions in ethics, applied ethics, issues of justice and human rights, and public policy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Normative Ethics) or PHI 541
PHI	545	Studies in Philosophy of Law	Selected topics in the philosophy of law.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	546	Political Philosophy Studies	Selected topics or figures in political philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	555	Topics in Formal Methods	Selected topics in formal methods.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	556	Advanced Symbolic Logic	Advanced topics in logic relevant to philosophical theorizing such as modal, deontic and temporal logic.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	560	Topics in Epistemology	Selected topics in epistemology.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	562	Perception	Recent work on the nature and content of perception.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Perception) or PHI 562
PHI	565	Probabilism	Recent work on rational belief, evidence and belief change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	566	Studies in Phil of Science	Selected topics in philosophy of science.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	570	Topics in Metaphysics	Selected topics in metaphysics	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	571	Studies in Phil of Mind	Selected recent philosophical work in philosophy of mind such as the nature of sensation and perception, theories of consciousness, and the unity of the self	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	572	Studies in Phil of Language	Selected recent philosophical work in philosophy of mind language as theories of meanings, direct reference and vagueness.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MA or PhD Philosophy major. Credit is allowed for only PHI 420 (Philosophy of Language) or PHI 572

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PHI	576	Realism	Recent work on realism and anti-realism, starting with Michael Dummett, and including philosophers such as Hilary Putnam, Donald Davidson, John McDowell and Kit Fine. Global realism and anti-realism and more specific realisms/antirealisms about the past, the mind, theoretical entities, mathematics and ethics.	N		SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	581	Studies in Ancient Greek Phil	Selected topics in ancient philosophy from 585 BC to 529 AD.	Y		SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student; Credit is allowed for only PHI 420 (Studies in Ancient Greek Philosophy) or PHI 581
PHI	582	Studies in Modern Philosophy	Selected topics and significant figures in the modern period.	Y		SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	587	Topics in the History of Phil	Selected topics in the history of philosophy.	Y		SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisites: Masters or Doctoral Philosophy student.
PHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	700	Research Methods	Course on research methods in a specific discipline.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHS	110	Fundamentals Physical Science	One-semester survey of the principles of physics and chemistry. Presumes understanding of elementary algebra.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHS	115	Science of Musical Instruments	Science class set in a musical context where students learn about music, musical instruments, and also about the underlying scientific and mathematical principles.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only PHS 115 or PHS 194 (Science of Musical Instruments)

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PHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only MSE 208 or PHS 208
PHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	505	Energy and the Environment	Current problems in energy resources, production, consumption, and conservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	530	Methods of Physics Teaching I	Inquiry approach to high school physics teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	531	Methods of Physics Teaching II	Extension of modeling techniques introduced in PHY 580.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	534	Teaching Phys Sci I, II, III	Design of curriculum and conduct of instruction for physical science courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
PHS	542	Integrated Mathematics/Physics	Mathematical models and modeling as an integrating theme for secondary mathematics and physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	550	Physics and Astronomy	Astronomy curricula and projects for secondary school, with emphasis on the role of physics in astronomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PHS	556	Astrophysics	Structure and evolution of stars, galaxies, and the universe. For secondary school teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560
PHS	570	Spacetime Physics	Special and general theories of relativity with implications for space and time travel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	581	Structure of Matter/Properties	Models of matter and its properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581
PHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	101	Introduction to Physics	Emphasizes applications of physics to life in the modern world. Presumes understanding of elementary algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHY	105	Basic Physics	One-semester survey of the principles of physics. Primarily for students who intend to take PHY 121, 131 but have not taken high school physics.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	111	General Physics	Noncalculus treatment of the principles of physics for nonphysics majors. Students whose curricula require a lab course must also register for PHY 113. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 170 or higher with C or better or ALEKS score of 61 or higher or Corequisite(s): MAT 210 or higher OR Visiting University Student
PHY	112	General Physics	Continuation of PHY 111. Students whose curricula require a lab course must also register for PHY 114. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): PHY 111 with C or better OR Visiting University Student
PHY	113	General Physics Laboratory	Elementary experiments in physics. Requires outside preparation for experiments and report writing. May be taken concurrently with, or subsequent to PHY 111. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 111 with C or better if completed OR Visiting University Student

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PHY	114	General Physics Laboratory	See PHY 113. May be taken concurrently with, or subsequent to, PHY 112. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 112 with C or better if completed OR Visiting University Student
PHY	118	Explorations in Sci Teaching	Examines the field of physical science education via in-class meetings and classroom settings. Discusses the theory, pedagogy and practice of teaching physical science. Reviews various curricula available for the teaching of physical science with a focus on state and national standards. Students work with course instructor(s) to design three lessons that work toward some of the objectives of each cooperating teachers' class. Students are aided in developing materials, guided in planning to teach the lesson, and given time to prepare and practice the lesson.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Pre-requisite: Mathematics or Physics or other science major
PHY	121	Univ Physics I: Mechanics	Kinematics; Newton's laws; work, energy, momentum, conservation laws; dynamics of particles, solids, and fluids. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	122	University Physics Lab I	Lab accompanying PHY 121. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 121 with C or better if completed OR Visiting University Student
PHY	131	Univ Physics II: Elctrc/Magnet	Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
PHY	132	University Physics Lab II	Lab accompanying PHY 131. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 131 with C or better if completed OR Visiting University Student
PHY	150	Physics I	Introductory physics for majors. Kinematics, Newton's Laws, basic forces, energy, momentum.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	151	Physics II	Continuation of PHY 150. Electromagnetic fields; Ampere's and Faraday's Laws; Maxwell's equations; basic circuit elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 150 or PHY 121 and PHY 122 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
PHY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): freshman standing; maximum 25 hours OR Visiting University Student
PHY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	201	Math Methods Physics I	Differential equations, linear equations, vectors, matrices, Fourier series, and numerical methods.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	CS	Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	202	Programming for Physicists	Introduces programming in the Python programming language for physics majors.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 with a C or better or PHY 131 and PHY 132 with C or better OR Visiting University Student
PHY	241	University Physics III	Thermodynamics, kinetic theory, physical and wave optics, relativity, photons, matter waves, atomic physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 OR Visiting University Student
PHY	252	Physics III	Thermodynamics, kinetic theory, physical optics and diffraction, modern physics, special relativity, quantum mechanics and Bohr atom.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 or PHY 131 and 132 with C or better OR Visiting University Student
PHY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	302	Mathematical Mthds Physics II	Vector calculus, complex variables, partial differential equations, special functions, numerical methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better OR Visiting University Student
PHY	310	Classical Parts/Field/Matter I	Particle kinematics, mechanics, conservation laws of single- and multi-particle systems, potentials, oscillations, Lagrangian dynamics, central force problems, dynamics in non-inertial reference frames, rigid body motion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s) with C or better: (PHY 201, PHY 252) or (PHY 201, PHY 202, PHY 241); Corequisite(s): PHY 302 OR Visiting University Student

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PHY	311	Classical Part/Field/Matter II	Electrostatic and gravitational fields, Poisson and Laplace equations, dielectric materials, magnetic fields and materials, magnetic induction, Faraday's Law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 310 with C or better OR Visiting University Student
PHY	312	Mechanics and Electromagnetism	Covers two major topics in physics, both dealing with forms of energy and momentum and how they are transmitted in space. Covers mechanics and dynamics, describing how bodies with mass move under various types of forces. Also covers electromagnetism, which describes how electric charges and magnets, and their motions, generate fields of force. Also describes how time-varying electric and magnetic fields are associated with electromagnetic waves, which include light.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 252 with C or better
PHY	314	Quantum Physics I	Photons, models of the atom, wave properties of matter, introduction to wave mechanics, 1-D systems in quantum mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better; PHY 252 with C or better, or both PHY 202 and 241 with C or better OR Visiting University Student
PHY	315	Quantum Physics II	General principles of quantum mechanics. 3-D problems, approximation methods, spin, relativity, introduction to many-particle systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 314 with C or better OR Visiting University Student
PHY	321	Vector Mechanics and Vibration	Vector-based formulation of Newtonian mechanics of particles and rigid bodies, including oscillatory systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	331	Prin Modern Electromagnetism	Studies the unified description of electromagnetic phenomena provided by Maxwell's equations in differential and integral form.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	333	Electronic Circuits/Measuremnt	Basic principles of electronic circuit analysis and measurement techniques using modern instrumentation and computer-aided analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	334	Advanced Laboratory I	Selected experiments from contemporary physics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report form writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 267 or 272 with C or better; PHY 151 (or PHY 131 and 132) with C or better; Pre- or corequisite(s): PHY 314, 361, CHM 345, or EEE 434 with C or better if completed OR Visiting University Student
PHY	361	Introductory Modern Physics	Special relativity and introductory quantum theory with applications drawn from atomic, nuclear, and solid-state physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 or 151 with C or better; MAT 272 or 267 with C or better OR Visiting University Student
PHY	371	Driving Forces in Biology	What are the stable states of biomolecules? How do molecules interact? What forces drive molecules to bond and associate, to adsorb, to permeate through membranes, to undergo chemical reactions, to undergo conformational changes? Why are some changes gradual, as in the weakening of a ligand interaction with temperature, and others sudden (cooperative) such as protein folding or the insolubility of oil in water? Addresses these questions by statistical thermodynamics, a collection of principles and models that when combined with thermodynamics, aim to explain molecular forces and flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346
PHY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	412	Classicl Part/Field/Matter III	Electromagnetic fields of moving charges, Maxwell's equations, harmonic phenomena, oscillations, waves, electromagnetic radiation, covariant electromagnetism, introduction to general relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better OR Visiting University Student
PHY	416	Quantum Physics III	Introduces the quantum theory of atoms, molecules, solids and nuclei, Dirac's equation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 315 with C or better OR Visiting University Student
PHY	432	Comp Methods in Physics	Provides a practical introduction to using the computer as a tool to solve problems in physics. Students learn how to work in a scientific computing environment (including software engineering "best practices"), to analyze a physical problem, select appropriate numerical algorithms to solve the problem, and to implement them. Covers computer graphics and object-oriented design. Students work in teams, critically evaluate their approaches and results, and present them in a professional manner to their peers.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): MAT 267 or 272 with C or better; Pre- or corequisite(s): PHY 241 or 252 with C or better if completed; Credit is allowed only for PHY 432 or PHY 494 (Computational Methods in Physics) OR Visiting University Student
PHY	441	Statistical/Thermal Physics	Statistical and experimental basis of heat, temperature, and entropy. Mechanical and statistical basis of the laws of thermodynamics. Applies macroscopic thermodynamics. Phase equilibrium.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better OR Visiting University Student

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PHY	444	Fundamentals of Nanoscience	For senior science majors and beginning graduate students teaching the cross-disciplinary subject of nanoscience. There is a strong emphasis on basics, so the course starts with a fairly rigorous introduction to quantum mechanics, statistical mechanics and chemical kinetics, though enough material is provided to allow nonphysics majors to come up to speed in these areas. This is followed by a survey of experimental techniques in nanoscience: microscopy, optical spectroscopy and scanning probe methods, and nanofabrication methods including "top down" and self assembly. Finally we survey applications: electrons in nanostructures, molecular electronics, nanomaterials and bio-nanoscience.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): junior or senior standing; Credit is allowed for only PHY 444 or PHY 494 (Intro to Nanoscience)
PHY	452	Physical Optics	Principles of reflection, refraction, diffraction. Additional topics from contemporary optics may include Fourier transform spectroscopy, linear systems theory, holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 311 with C or better OR Visiting University Student
PHY	456	Laser Optics	Theoretical and experimental aspects of applied optics including basic concepts of lasers, properties of optical beams, resonators and interferometry. Course consists of two parts: preparatory labs and applied projects. Preparatory labs provide theoretical and technical background for understanding of general features of electromagnetic wave propagation and technical features of optical lasers including high-power laser systems. Applied projects give students the opportunity to use laser optical systems to solve real-world problems.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): PHY 361; Credit is allowed for only ABS 494 (Advanced Laser Laboratory), ABS 494 (Laser Optics) or PHY 456
PHY	460	Numerical Methods in Physics	Advanced numerical methods with an emphasis on electromagnetism, quantum mechanics and materials science with computer labs on a multiprocessor cluster.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): PHY 315
PHY	462	Particle and Nuclear Physics	Nuclear properties, models, decays and reactions; fundamental forces, field theories, symmetry principles; hadrons, quarks, and leptons; the Standard Model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better
PHY	465	Advanced Laboratory II	Continuation of PHY 334. Students may substitute a short laboratory research project for one of the elective experiments of the course, in consultation with a faculty sponsor and the course instructor.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 334 with C or better OR Visiting University Student
PHY	472	Advanced Biophysics Lab	Offers selected experiments from contemporary biophysics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report writing. Emphasizes the importance of good notebook keeping.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346 OR Visiting University Student
PHY	473	From Molecules to Cells	Offers selected subjects from biological physics covering the length scales from biomolecules to cells. Builds on knowledge acquired from thermodynamics and statistical mechanics to formulate basic principles behind the working of life systems. Free energy, entropic forces, chemical potentials and electrostatic interactions rule the "nanometer soup" of a living cell. Proton gradients across cell membranes are behind all the energy consumed by life. Random walks, dissipative dynamics, and hydrodynamic fluxes rule time-dependent phenomena. Covers systems including biomolecules, membranes, cells and nerves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 371 with C or better; Pre-corequisite(s): PHY 472 with C or better if completed
PHY	480	Methods of Teaching Physics	Evaluates various approaches to the teaching of high school physics. Preparation of demonstrations and experiments. Organization of a lab. Designed for secondary school physics teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	481	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better; Credit is allowed for only MSE 526 or NAN 511 or PHY 481 or PHY 511 OR Visiting University Student
PHY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		Prerequisite(s): minimum 45 hours
PHY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6		Prerequisite(s): Barrett Honors student
PHY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PHY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	495	Project Research	Supervised project in physics or astrophysics.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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PHY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-7		Prerequisite(s): minimum 45 hours
PHY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours
PHY	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Degree- or nondegree-seeking graduate. Credit is allowed for only MSE 526, NAN 511, PHY 511
PHY	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 511; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matis & Device Apps) or NAN 512 or PHY 482 or PHY 512
PHY	521	Classical&Continuum Mechanics	Variational principles, Lagrange's and Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, introduction to chaos and nonlinear dynamics, fundamentals of elasticity theory and fluid mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	523	General Relativity	Special and general theories of relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	531	Electrodynamics	Special theory of relativity, covariant formulation of electromagnetic interactions, Maxwell's equations, electrostatics and magnetostatics, dielectric media, inhomogeneous wave equations, Lienard-Wiechert potentials, interactions of charged particles and electromagnetic waves, scattering and diffraction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	541	Statistical Physics	Postulates of statistical mechanics, equilibrium ensembles, Bose and Fermi statistics, density matrix, modern theory of phase transitions, fluctuations, and linear response theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	542	Topics in Biophysics	Overview of modern biology, length scales; emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542
PHY	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics; measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
PHY	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
PHY	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, SEM 552, or PHY 552
PHY	553	Electron Microscopy Lab I	Lab support for PHY 552.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553
PHY	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent beam diffraction, and electron holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE or PHY 554
PHY	555	Electron Microscopy Lab II	Lab support for PHY 554.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
PHY	576	Quantum Theory	Operator methods in quantum mechanics, time-independent perturbation theory, variational methods, angular momentum and group representation theory, identical particles; quantum dynamics, including time-ordered operators, time-dependent perturbation theory, and Fermi's golden rule.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	577	Intro to Quant Field Theory	Explains necessity of generalizing quantum mechanics to a field theory viewpoint. Studies properties of scalar, spinor, and gauge fields; incorporates interactions; and learns to compute amplitudes, cross sections, and decay rates using formalism of Feynman diagrams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PHY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	581	Quantum Theory of Solids I	Band structure models: pseudopotentials, density functional theory; optical and magnetic response; elementary excitations; transport theory, electron-photon interactions and superconductivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	582	Quantum Theory of Solids II	Continuation of PHY 581: broken symmetry; phase transitions; disorder, topological defects; nano-structures topics; soft condensed matter and current research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PHY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Physics	1		
PHY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PIT	501	Prin PublicInterest Technology	Fundamentals of public interest technology. Identifies and analyzes stakeholders, value chains, societal dimensions, and legal and policy issues in the context of emerging technologies such as smart cities, the internet of things, robotics and autonomous systems, and artificial intelligence. Covers the importance of socio-technical change, responsible innovation, public values, accountability, oversight, corporate responsibility and other key concepts when considering technologies working for the public interest. Students work on critical issues such as data ownership, consent, governance, privacy, security, accessibility and the digital divide.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PIT	502	Co-Designing the Future	Explores how new technologies for using, processing and managing information are changing how we interact and work. This practical learning and mentoring program helps students design and implement solutions to public interest problems using civic technology. Explores current trends, uses a wide variety of information and communication tools, and develops content to help develop a project from idea to implementation. Takes advantage of the latest innovations in open and participatory problem solving, including the application of open data, crowdsourcing, expert networks and systems. Unlike traditional accelerators, focuses only on public interest projects that work with real-world institutions and partners such as nongovernment organizations.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	503	Technology Impact Assessments	Trains students to conduct a technology assessment—a systematic effort to anticipate and understand the impact of a technology. Serves as an "early warning" for policymakers, forecasting technological change and its consequences, to facilitate the prudent procurement of technologies, to plan R&D more effectively, to create the basis for evidence-based regulatory approaches, and to achieve other purpose that serve the public interest. Covers the uses of technology assessment and practices various methods. Each student carries out an abbreviated technology assessment on a topic of his or her choice and communicates it to their colleagues.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	504	Public Engagement Strategies	Covers the concepts, tools, institutions and strategies to appropriately and effectively engage with a variety of stakeholders, including scientific and technical experts, policymakers and advocates for responsible research and innovation, and general publics. Students learn how to elevate the societal discourse about emerging and contemporary issues in science and technology through inclusive, informed, equitable, sustainable and democratic engagement with the public. Explores real-world case studies and provides students the opportunity to design and develop a public engagement strategy for stakeholders.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PLB	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student

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PLB	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
PLB	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
PLB	310	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
PLB	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
PLB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
PLB	502	Perspectives in Plant Biology	Provides an overview of current topics and introduces some of the practical tools used in plant biology, ecology and conservation (e.g., field and lab methods, urban planning, federal land management, biodiversity bioinformatics, phylogenetics, and GIS).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PLB	558	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
PLB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
PLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		

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PLB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLC	101	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	102	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	201	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	202	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: PLC 201 with D
PLC	311	Advanced Polish I	Develops writing ability and oral expression.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 202 with C or better; Credit is allowed for only PLC 311 or PLC 394 (Polish Comp and Conversation) OR Visiting University Student
PLC	312	Advanced Polish II	Develops writing ability and oral expression.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 311 with C or better
PLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POP	100	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
POP	333	Systems Thinking in Pop Health	Covers systems science and its application to population health.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
POP	444	Pop Health Field Experience	Provides opportunity to gain experience working in community and population health settings. Course meetings provide guidance during the field experience and an opportunity for students to share their projects.	N		LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 450; HCD 101 or POP 100 OR Visiting University Student
POP	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y		SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y		LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	605	Pop Health Systems Science	Systems science theory and methodology and its application to population health. Systems science is an interdisciplinary field of research that seeks to understand the general characteristics, dynamics and behaviors of systems. While the theory and methodology presented is applicable to a wide range of academic disciplines (e.g., physical systems, social systems, economic systems), this course focuses on population health systems.	N		LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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POP	610	Social Epidemiology	Social epidemiology considers how society's human activities and social interactions yield differential exposures that result in health disparities, including the identification of new disease-specific risk factors (e.g., social determinants of health) and how well-known exposures (e.g., cigarette smoking, lead paint, health insurance) emerge and are maintained by the social system. Considers dynamic social relationships and human activities that ultimately locate industries that pollute one neighborhood instead of another, make fresh foods available to some and not others, and permit some to enjoy resources such that they can purchase healthy environments and excellent health care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	615	Organizational Behavior	Covers important questions and perspectives relevant to understanding organizational behavior and theory (OBT) across the population health arena, including health care and public health sectors. Covers active paradigms in OBT, particularly perspectives important for understanding how health organizations and systems adapt, evolve and respond. Students analyze strengths and weaknesses of different theories and examine how they can be used as a foundation for research on health care and public health organizations and implications for health management and policy. Examines empirical research to clarify how important organizational constructs have been operationalized and to highlight the methodology-related challenges of studying organizations in health care/public health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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POR	101	Elementary Portuguese I	Introduces the Portuguese language. Encourages meaningful and contextualized use of the language through reading, writing, listening and speaking tasks based on authentic materials with a focus on Brazil.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students who have credit for POR 102 or 201 or 202 or 313 or 314 or 320 or 321 may not enroll in POR 101 OR Visiting University Student
POR	102	Elementary Portuguese II	Continues to develop students' abilities at the elementary level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 101; Students who have credit for POR 201 or POR 202 or POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 102 OR Visiting University Student
POR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	201	Intermediate Portuguese I	Develops students' skills at the intermediate level of Portuguese language and culture through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 102 with C or better; Students who have credit for POR 202 or 313 or 314 or 320 or 321 may not enroll in POR 201 OR Visiting University Student
POR	202	Intermediate Portuguese II	Continues to develop students' skills at the intermediate level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 201 with C or better; Students who have credit for POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 202 OR Visiting University Student
POR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	313	Portuguese Conv & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on speaking and listening, and a focus on Brazilian culture.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student
POR	314	Portuguese Comp & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on reading and writing. Each class focuses on topics of personal and general interest, with a focus on Brazil.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student
POR	320	Portuguese Spanish Spkrs I	Intensive introduction to the Portuguese language for Spanish speakers. Designed for students with an active competence in Spanish who wish to learn the essential elements of the Portuguese grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension," which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities with Spanish, students master the four basic skills of listening, speaking, reading and writing of in Portuguese at a faster pace.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 202, 204, 210, 313, 314, 315, 316, or 412 with C or better; Students who have credit for POR 101 or POR 102 or POR 201 or POR 202 or POR 313 or POR 314 or POR 321 may not enroll in POR 320 OR Visiting University Student
POR	321	Portuguese Spanish Spkrs II	Intensive intermediate-level Portuguese language class designed for Spanish-speakers. Further develops the students' communication skills in Portuguese. Makes use of the many common elements between Spanish and Portuguese (particularly vocabulary and grammar) to achieve an accelerated learning of linguistic, sociolinguistic and pragmatic competences required for fluency. The class is mostly conducted in Portuguese; do not be afraid of making mistakes while speaking Portuguese because this is a natural part of the learning process.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): POR 102 or 320 with C or better; Students who have credit for POR 201 or POR 202 or POR 313 or POR 314 may not enroll in POR 321 OR Visiting University Student
POR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	460	Brazilian Society Thru Music	Surveys Brazilian popular music in the 20th and 21st centuries, focusing on one main question: What images of Brazil have been imagined by Brazilian popular music in various socio-political contexts? Working with various genres, discusses how issues pertaining to race, social class, and citizenship have contributed to shape the Brazilian popular music scene and its representations of Brazil both at home and abroad. Taught in English. However, students who have completed POR 202 or POR 321 have the option of completing the assignments in Portuguese.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only POR 460 or POR 494 (Contemporary Brazilian Popular Music) or SLC 460 or SLC 494 (Contemporary Brazilian Popular Music) OR Visiting University Student
POR	472	Luso-Brazilian Civilization	Lectures, readings, and discussion of important aspects of Luso-Brazilian civilization. Topics from music, art, folklore, literature, history, and politics.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): POR 313 with C or better; Credit is allowed for only POR 472 or POR 598 (Luso-Brazilian Civilization)

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POR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
POR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
POR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
POR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POS	110	American Government & Politics	Major institutions of modern government and processes of individual and group political activity, with emphasis on the American experience. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	Credit is allowed for only HST 112 or POS 112 or HST 194 (Foundations of Democracy)
POS	150	Comparative Government	Political institutions and processes in selected foreign countries, including origins, strengths, and weaknesses of contemporary political systems and political development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	160	Global Politics	Nature of contemporary world politics through the study of both general theoretical topics and specific geographical areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 360 or POS 362 OR Visiting University Student
POS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		Pre-requisites: Freshman status; Maximum 25 hours
POS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): maximum 25 hours OR Visiting University Student
POS	210	Political Ideologies	Leading political ideas and belief systems, e.g., Marxism, liberalism, conservatism, theories of democracy, and alternative futures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	211	Arizona Constitution/Governmt	Constitution and government of the State of Arizona. Meets the Arizona constitution requirement for teacher certification. May not be counted for the major or a teaching major or minor in Political Science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	2		Credit is allowed for only POS 211 or POS 216 or POS 417
POS	216	State and Local Government	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	230	Curr Issues/Natl Politics	Major issues facing national governments in the domestic field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
POS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
POS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
POS	247	Intro to Latin Amer Politics	General introduction to the politics and socioeconomic structures of Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	260	Curr Issues in Intl Politics	Analyzes major current problems in world politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
POS	270	American Legal System	Concepts, institutions, classifications, and functions of law. Role of the courts and impact of judicial decision making on social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		

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POS	300	Contemp Global Controversies	Explores key controversies in global politics including security, economic stability, poverty, gender, race, and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	301	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
POS	305	Politics and Film	Examines portrayal of political events, ethnic groups, and sociopolitical situations in film, a major medium addressing questions of human values. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	310	American National Government	Powers, functions, and agents of American political institutions. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	313	The Congress	Lawmaking process in the U.S. Congress.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POL 313 or POS 313 OR Visiting University Student
POS	314	The American Presidency	Office, role, and power of the American presidency in the American political system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	315	The Supreme Court	Role of the Supreme Court in American society and politics; examines decision-making process and impact of decisions; restraint versus activism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	316	American Political Institutions	Explores current issues involving American political institutions including electoral systems, legislative bodies, executive agencies, executive leadership, judicial bodies, political parties, interest groups, social movements, the media, and their interactions.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 316 or POS 394 (American Political Institutions) OR Visiting University Student
POS	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student
POS	325	Public Policy Development	Examines one or more aspects of public policy development including agenda setting and policy formulation, implementation, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	331	Public Opinion	Formation, expression, and influence of individual and organized opinion on political institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	332	American Political Parties	Development of the American party system. Party organization and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	333	Interest Groups	Examines how minority, corporate, labor, farm, consumer, environmental, health, education and public interest groups, and single-issue movements influence government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)
POS	336	Voters in America	Voting behavior and the attitudes, perceptions, and activities of the citizenry in the political process.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	337	Political Psychology	Political psychology is an interdisciplinary field that applies theories from the study of human psychology to the study of politics. Focuses on how psychological processes influence political thoughts and actions. Thus, the initial portion of the course discusses the structure of political attitudes and opinions and some of the primary ways that politicians and the media can influence public opinion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 337 or POS 394 (Political Psychology) OR Visiting University Student

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POS	338	Fake News:Identify & Refute	Critically analyzes the implications of fake news for our democracy and democratic way of life. Examines why we should care about whether or not citizens consume fake news and how it affects our individual lives and public policy. Looks at a variety of topics, rooted in social science research drawing from psychology and political science. Also examines students and how they process fake news, the origins of fake news, elected officials' reliance on false information, fake news and statistics, fact-checking, and fake news and political bias. Additionally, students analyze elected officials' communications, including U.S. Presidents' State of the Union addresses.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 338 or POS 394 (Fake News) or POS 394 (Fake News: How to Identify and Refute it)
POS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101,105 or 107 with C or better; Credit is allowed for only ASB 339, POS 339 or SBS 339 or SOC 339
POS	340	History Political Philosophy I	Western political philosophers and their theories to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	341	History of Political Phil II	Western political philosophers and their theories from the 17th to the 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	342	Political Theory	Surveys ancient, modern, and contemporary political theorists and ideas in European and American contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU or SB	
POS	346	Problems of Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	348	Do You Want to Build a Nation	Requires students to critically assess their assumptions about nation-states through a series of debates and simulation games. Through in-class, interactive games, students answer: What are the sources of legitimacy and defining elements of statehood? How do those defining elements, such as democratic structures, support or challenge certain functions of the nation-state? How does a nation's purported moral basis affect its foreign policy decisions and negotiations with other nations?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum junior standing or minimum 45 hours OR Visiting University Student
POS	350	Comparative Politics	Theoretical approaches and political institutions, such as parties, pressure groups, legislatures, and executives, from a cross-national perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	351	Democratization	Examines the consolidation of democracies in postauthoritarian and postcommunist settings (e.g., Latin America, Eastern Europe, Asia).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	352	European Democracies	Addresses questions such as, How has the relationship between European citizens and the democratic process changed in the post-WWII period? How do domestic political institutions influence this process? Explores different approaches to some of the most important questions facing the study of comparative and European politics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 25 hours OR Visiting University Student
POS	353	Compar Politics of Middle East	Examines the historical, social, and economic context of contemporary Middle East politics; explores political dynamics of selected Middle Eastern regimes; and offers a comparative examination of key political trends and themes.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing or minimum 45 hours; Credit is allowed for only POS 353 or POS 360 (Politics of the Middle East) OR Visiting University Student
POS	354	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
POS	356	European Union	History and workings of EU member states, including single market, Euro, legal system, ethnonationalism, immigration, expansion, trade wars, and defense.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	357	South Asia Politics	Political culture and systems of South Asia examined through study of political writings, novels, and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	358	Southeast Asia	Political background, governmental institutions, political dynamics, and developmental problems of Southeast Asian nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	359	African Politics and Society	Comparative analysis of socioeconomic forces, political processes, government institutions, and political novels in Sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	

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POS	360	World Politics	Theory and practice of statecraft as applied to selected issues, regions, or eras. Emphasis may vary with instructor, but cannot be repeated for credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 160 or POS 360 OR Visiting University Student
POS	361	American Foreign Policy	United States in world affairs; foreign policy since World War I. Techniques in formulating American foreign policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	362	World Politics Theory	Theoretical examination of one or more aspects of international politics, e.g., foreign policy, negotiations, alliances, crises, wars, and international systems.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 362
POS	364	Natl Security/Intell/Terrorism	Theoretical and empirical assessment of U.S. national security policy in the post-cold war era.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	365	Terrorism & Insurgency	Insurgency, civil war, revolution and terrorism are traditionally thought of as domestic events or "intrastate" conflicts between one violent domestic political group and the state. However, recent conflicts in Afghanistan, Libya and Syria, as well as the 9/11 attacks on the U.S. demonstrate that insurgencies often spill across borders and draw in actors far removed from the original conflict site. These conflicts also demonstrate that insurgencies and terror campaigns necessitate global policy responses. The international character of insurgency, therefore, requires students of political violence to consider a wide array of both international and domestic factors in order to better understand the origins, dynamics and resolution of modern insurgencies and terror campaigns.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 365 or POS 394 (Terrorism and Insurgency)
POS	367	World Pol & Global Inequality	Examines the topic of global inequality and the numerous challenges that arise from it, including perspectives and theories pertaining to third world development, the historical background to the political and economic relations between the wealthy countries of the world and the poorer countries, and policies and strategies designed to promote development and alleviate poverty. Studies some contemporary issues that are related to global inequality including ethics and third-world development, sweatshop labor, corporate responsibility, and the tension between globalization and the movement of people across sovereign borders.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 25 hours OR Visiting University Student
POS	368	Ethics and Human Rights	Explores issues of ethics, morality, and human rights in the global community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	370	Law and Society	Analyzes debates among social scientists and legal theorists concerning the relationship between law and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
POS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
POS	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only POS 378, REL 378 or REL 394 (Religion, War and Peace)
POS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
POS	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
POS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		

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POS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
POS	410	Governing American Cities	Reviews modern urban problems, their sources, and potential solutions, including structural and policy alternatives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
POS	417	Arizona Politics	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	426	Elements of Public Policy	Each section may cover one of the following topics: consumer protection, natural resources, criminal justice, environmental protection, science and technology, or theories of public policy. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours
POS	427	Social Welfare & Health Policy	Examines the political conflicts and debates that underlie social welfare and health policy, and the provisions of major welfare-state programs in the U.S., with comparisons to other developed democracies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for POS 427 or POS 394 (Social Welfare & Health Policy)
POS	431	Campaigns and Elections	Examines campaigns from a multitude of perspectives including the politician, reporter, campaign strategist, and voter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	434	Media and Politics	Studies mass media and politics in the United States, e.g., media and elections, media and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	435	Women and Politics	Focuses on the uniqueness of women in modern political systems and political thought. Emphasis may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	
POS	436	Gender/Sexuality/Nation-States	Issues and problems related to the interface of gender, sexualities, nationalisms, and states in various world contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
POS	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437 OR Visiting University Student
POS	438	Latino Politics	Examines contemporary political issues in the diverse Latino community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours
POS	439	Minority Grp Politics America	Role of minority groups in American politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	442	American Political Thought	Political theories and movements from the colonial period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	443	Contemporary Political Theory	Major problems and theories in contemporary political thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	446	Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU	
POS	447	Citizenship/Natism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
POS	452	China	Background of the Communist revolution, political processes, and developmental problems in China from a comparative perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	453	Latin America	Political institutions, process, and developmental problems of South American states examined through comparative analysis, novels and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours
POS	454	Mexico	Politics, economy, institutions, and cultures in Mexico in historical and contemporary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	456	Latin American Cities	Urban studies of Latin American world cities, e.g., Mexico City, Santiago, emphasizing integration with U.S. cities, including Los Angeles, Phoenix.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	464	Border Cities:Action Rsrch/Glo	Examines the effects of globalization on U.S.-Mexico border cities and towns with particular emphasis on Mexican border cities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	

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POS	465	International Organization/Law	History, practical political significance, and future of international institutions, transnational regimes, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	467	International Security	Examines issues affecting the international security of states and peoples, e.g., military, economic, technological, environmental, and demographic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	468	Comparative Asian Foreign Pols	Foreign policies of the Asian states, emphasizing their security relations and movements toward regionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	470	Law and the Political Order	Investigates concepts of justice, political rights, adjudication and legislation, legal ordering, constitutional law, law as an instrument of change.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 470 or CMN 598 (Law and the Political Order) or JHR 598 (Law and the Political Order) or MAS 598 (Law and the Political Order)
POS	471	Constitutional Law I	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; jurisdiction and organization of the federal courts; judicial review; separation of powers; federalism; the commerce clause; national taxing and spending power; state police power.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	472	Constitutional Law II	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; due process; equal protection of laws; individual rights; civil liberties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	475	Morality and Politics	Should morality play a role in politics? Machiavelli gives us one sort of answer, urging politicians to be dishonest, deceptive and even cruel. Kant disagrees, arguing instead that politicians should adhere to their personal morality over political calculations. Explores this question in two ways. First, looks more at the disagreement between great thinkers in the Western political tradition. Second, investigates contemporary political actors who bring moral concerns to the fore, including dirty politicians and extremist citizens (for example, radical animal rights activists, militant environmentalists or global poverty zealots). Seminar course that incorporates in-class discussion and writing, options-based grading and creative assignments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only POS 394 (Morality and Politics) or POS 475
POS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
POS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	485	Political Economy	Problems, policies, and possibilities of various political-economic systems and the interrelationship of capitalism, socialism, and democracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	486	Internat'l Political Economy	Contending approaches to historical and contemporary issues of international political economy, including global welfare, equality, ecology, and peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
POS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
POS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
POS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	503	Empirical Political Inquiry	Research methods and techniques of the discipline, emphasizing empirical foundations and analytic methods employed in subfields.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Political Science student
POS	530	American Politics	Examines major debates in the study of American political processes and institutions. Covers parties, media, elections, public opinion, interest groups, and the three branches of government.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		

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POS	540	Ancient Political Theory	Surveys the historical and philosophical developments in political thinking from the ancient Greeks up to the Renaissance. The world studied predominantly is one of profound political conflict and change. Moves from the Greek cities to the edge of modern political developments. The movement encompasses the political transformation from city-states to empires to the establishment of an overarching Christian world order that balances secular and sacred power, only to be challenged if not foundationally shaken by Machiavelli and realism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Graduate Political Science major
POS	541	Modern Political Theory	Surveys the development of modern political thought from Machiavelli--through Hobbes, Locke, Hume, Rousseau, Burke, Kant, Montesquieu, Constant, Bentham, Mill, and Hegel--to Marx. Focuses on the primary writings of these thinkers as well as reading secondary literature. In addition to focusing on the distinctive contribution and relevance of individual thinkers, further explores certain recurring themes among which are the following: Are freedom and equality foes or friends? What allegiance do we owe the state and why? Do we have rights against the state? What is a just state? Is private property essential to individual liberty? Do laws enhance or threaten liberty? Is self-interest an adequate basis for political allegiance? Why should we pursue the common good, if at all? Are self-interest and the common good reconcilable?	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD major; Credit is allowed for only POS 541 or 591 (Modern Political Thought)
POS	550	Comparative Politics	Surveys major approaches across topical areas such as revolutions, authoritarianism, policy processes, interest groups, and electoral politics. Focus varies with instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	552	Women and Politics	Serve as an introduction to the comparative study of women and politics. Not a course on feminist theory; instead focuses on questions such as: Does the descriptive representation of women guarantee their substantive representation? Which electoral rules favor the election of women? Do the negative effects of gender quotas outweigh their impressive ability to increase the number of women in office? Have the news media helped or harmed female candidacies? Once in power do women govern differently than men? Focuses on the obstacles that women face in obtaining positions of power.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 552 or 598 (Women and Politics)
POS	560	International Relations	Surveys major theoretical approaches and debates in international relations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	565	Games, Strategy and Politics	Provides an overview of game theory for graduate students in political science. Covers classical game theory, extensive form games, games of incomplete information and non-cooperative games. Applies game theory to international relations, political economy, comparative politics and American politics. Gives special attention to bargaining games, voting in elections and deterrence. Basic mathematical knowledge is helpful; reviews basic algebra and calculus in the class as needed.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 565 or POS 598 (Games, Strategy and Politics)
POS	570	Politics of Public Policy	Examines the political dimensions of public policymaking. Emphasizes major theoretical explanations of the policy process--particularly elements such as agenda setting, implementation, and policy change--rather than on the substance of particular policies. Focuses primarily on U.S. domestic policy, with some comparative reference to other developed democracies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 570 or 598 (Politics of Public Policy)
POS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	586	Intl Political Economy	International political economy (IPE) focuses on the relationship between the pursuit of wealth and power during the development and evolution of the global political economy. Assigned readings take an analytical approach to the subject, drawing on methods and theories developed in political science, economics, history and sociology. In addition to an overview of the methods and theories employed in the study of IPE, also examines a variety of current empirical research programs in the subfield. This seminar should enable students to read the academic literature, conduct independent research in the subfield, and understand contemporary problems in the global political economy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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POS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	596	Professionalization Workshop	Serves as a professionalization workshop and is intended for new political science doctoral students. However, graduate students at all levels in the program are welcome to take the course. Introduces the professional side of political science. Surveys topics such as attending conferences, applying for grants, publishing an article or a book, and going on the job market. Jointly builds a professional resource bank on our course page that serves as a resource for all students.	N	SEM	N	OP2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 596 or POS 598 (Teaching and Writing Worksh)
POS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
POS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	601	Advanced Experimental Research	Introduces experimental and quasi-experimental research designs in political research, including lab techniques and topics in the analysis of variance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	603	Polimetrics I	Introduces theory and practice of linear regression analysis. Provides skills to read, understand, and evaluate professional literature using regression analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	604	Polimetrics II	Applies quantitative techniques to research topics producing publishable papers through exposure to time-series, logit and probit, and simultaneous equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	652	Religion and Politics	Analyzes the complicated and often conflictual relationship among major religious faiths, religious activists, and the state in the 20th and 21st centuries. Cover topics: secularization theory and its problems; religion as a cultural or attitudinal variable in politics; the rationality of religion, organized religions and their activists; the bases for conflicts between religion and the state; religion's role in conflict; the terms of reconciliation and collaboration; the conditions under which religion is politicized and becomes the basis of a political movement or party; and the means by which organized religions and/or their adherents seek to maintain an influence in 20th- and 21st-century politics and society. Does not provide a survey of religion and politics for all major world religions, or other religions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD student; Credit is allowed for only POS 652 or 598 (Religion and Politics)
POS	663	Ethnic Conflict	Acquaints students with a variety of theoretical and empirical approaches to the study of conflict between nations and states, which is often called ethnic conflict. Aims to understand the nature of ethnic identity, the reasons it persists and changes over time, and the conditions under which it can be mobilized for political ends. Discussions are theoretical and comparative. Draws on empirical results and cases to support, qualify and refute propositions, and draw inferences. Prior social science course work preferred.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 598 (Ethnic Conflict) or POS 598 (Deadly Ethnic Conflict) or POS 663
POS	664	War/Peace/Conflict Processes	Systematic analysis of the causes of war, the preconditions for peace, and approaches to the resolution of conflict.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		

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POS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
POS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
PPE	215	Teaching Team Sports	Practical application of biomechanical, physiological, psychological, and learning principles in the analysis of skill acquisition and performance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	220	Teaching Lifetime Activity	Participating in and teaching sequenced activities K-12.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	230	Teaching Group Exercise	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 230 or 294 (Teaching Group Exercise)
PPE	235	Tchng Strength Cond for Health	Fundamental principles, strategies and assessments of strength training and conditioning methodologies that are necessary to effectively operate in a school-based setting. Most secondary schools offer some form of strength training in a physical education setting, either as a stand-alone course or as part of a traditional class structure. Therefore, new physical education teachers should be well informed on the scientific rationale for the use of strength and conditioning programs in schools, and be able to design and implement these programs safely. Provides prospective physical education teachers with the knowledge and skills needed to safely and effectively operate in a school-based strength training setting, whether it is for physical education or sport performance.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 235 or PPE 294 (Teaching Strength Conditioning for Health)
PPE	240	Physical Activity	Recognizing individual interests and abilities, the program provides courses covering a wide variety of physical activities. We make an effort to address contemporary trends and student, faculty and staff interests. Offerings may include but are not limited to classes in the areas of: aquatics, artistic and social dance, fitness development, martial arts, mind/body, outdoor recreation, resistance training, sports and games.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		
PPE	300	Intro to PE, Fitness and Sport	Introduces the fields of physical education, exercise science, sports medicine, and related fields. Discusses the history and trends of physical education as well as key concepts, programs, problems, and issues related to teaching physical education. Teaches essential background knowledge, better preparing for career success. The online (blackboard) component of this class provides practical experiential learning and assesses knowledge and comprehension of the key concepts presented in the course.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Minimum 60 hours; Junior or senior standing; Credit is allowed for only PPE 300 or 394 (Intro to Physical Education, Fitness & Sport) OR Visiting University Student
PPE	310	Healthy Learning Communities	Prepares educators with the knowledge, skills and dispositions to support learners' overall health. Focuses on educator's roles in creating healthy and active learning communities and addresses a variety of educational settings and learner ages.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours

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PPE	315	Ped Movement Sci for PPE	Provides a general overview of the functional anatomy of the human body as it relates to movement and the biomechanical principles underlying the execution of a given motor skill. Also examines the influence of physical growth and maturation on the development of motor skills.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): BIO 201; BIO 202 OR Visiting University Student
PPE	320	Exercise Physiology Concepts	Provides an introductory-level understanding of how the body responds prior to, during, and after participation in dynamic and static exercise. Examines the physiological basis of human movement, with emphasis on reviewing what exercise physiologists have learned about the diversity of physical activity, specifically in children. Although many physiological responses to activity are predictable, the magnitude and pattern of responses are unique depending on the age, gender, and previous experience of the individual. Also examines the role an active lifestyle plays in the overall health and well-being of school-aged children and adolescents.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: BIO 201; BIO 202; Credit is allowed for only PPE 320 or 394 (Pediatric Exercise Physical)
PPE	335	Move & Phys of Child in PE	Provides an introductory-level understanding of mechanical principles underlying human movement, the developmental patterns reflected in human movement birth through childhood and adolescence, basic principles of motor learning and the physiological basis of human movement. Covers how these principles directly affect the development of physical activity opportunities in in community-based sport and recreation settings with a specific eye toward the role an active lifestyle plays in the overall health and well-being of children and youth between the ages of 6 and 18.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing
PPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	396	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	397	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	450	Phys Educ for the Elem School	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 450 or PPE 550
PPE	455	Phys Educ in the Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 455 or PPE 555
PPE	460	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 460 or PPE 560
PPE	465	Teaching Phys Act Concepts	Focuses on teaching physical activity concepts in physical education settings and other settings such as fitness clubs or community health organizations. Analyzes and critiques state physical activity standards and national guidelines for promoting physical activity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only PPE 465 or PPE 565 OR Visiting University Student
PPE	477	Student Teaching: PE EED	Student teaching in elementary physical education setting grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	478	Student Teaching: PE SED	Student teaching in middle/secondary physical education setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	480	Prof Seminar for Physical Educ	Methods of instruction, organization, and presentation of appropriate content in elementary and secondary physical education.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
PPE	485	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; Credit is allowed for only PPE 485 or PPE 586
PPE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
PPE	535	Intro to Sport Ed	Introduces a grade 5-12 school physical education curriculum that focuses on providing more complete and more authentic sport experiences.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (Degree or non-degree) students; Credit is allowed for only PPE 494, 598 (Sport Education) or PPE 535
PPE	550	Physical Educ-Elementary Sch	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Students who have credit for PPE 450 may not enroll in PPE 550
PPE	551	Innovative Programming in EPE	Provides an understanding of current trends and issues in elementary school physical education curriculum and how to implement the curriculum in a school environment. Students become familiar with a variety of best practices in curriculum and instruction specific to elementary children in physical activity settings. Emphasizes incorporating methods of effective teaching and activity organization, enhancing student learning, and effectively managing student behavior and the learning environment.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only PPE 451 or 551
PPE	555	Physical Educ-Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and non-degree); Credit is allowed for only PPE 455 or PPE 555
PPE	560	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and Non-degree); Credit is allowed for only PPE 460 or PPE 560
PPE	565	Teaching Phys Act Concepts	Teaching physical activity concepts in PE settings. Analyzes and critiques state and national physical education standards.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only PPE 465 or 565
PPE	567	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	568	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	586	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PPE 485 or PPE 586
PPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	501	Fundamentals Political Psych	Core course focuses on the interdisciplinary study of political psychology and teaches the tools necessary to evaluate the application of political psychology to political marketing, campaigns and policy advocacy. Covers both the theoretical foundations underlying research in political psychology as well as foundational and contemporary applications. Examines topics including personality, emotions and genetic bases of behavior as well as approaches to the design and interpretation of experimental research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	502	Cognition/Emotions Political	Focuses on key concepts in cognitive psychology and the scientific study of mental processes. Covers how people acquire, store, transform, use information. Topics may include perception, attention, language, memory, reasoning, problem solving, decision making and attributions. Also covers the relation between emotions and cognition.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	503	Prejudice/Intergroup Relations	Interrogates various theoretical approaches to intergroup conflict; why stereotypes and prejudice exist; the different forms these attitudes take (e.g., ethnocentrism, racial attitudes); and their implications for politics. Also introduces social identity theory and demonstrates how this theory can elucidate group processes. Moreover, covers theoretical arguments for and concrete examples of how prejudice can be reduced and tolerance increased.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	504	Attitudes and Persuasion	Focuses on the individual and contextual factors responsible for changes in beliefs, attitudes and behaviors. First covers the concept of attitudes and their measurement before examining in depth various theoretical approaches that explain how people come to change their attitudes. Also covers meta-cognitive as well as implicit factors in persuasion. Ends with a more applied look at persuasion, focusing on how persuasive messages can be crafted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	505	Biopolitics	Builds a foundational understanding of biological, evolutionary, genetic and neurobiological perspectives in political psychology. Draws on these perspectives to explain political attitudes and behavior, considering literature on nonhuman animals, developmental psychology, personality, psychophysiology, neurobiology, genetics, hormones, disgust sensitivity and mating.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	506	Experimental Design	Focuses on the experimental paradigm that permeates political psychology Introduces the logic of experimentation and how to design and evaluate experimental studies. Focuses on a variety of different experimental designs, highlighting the various benefits and drawbacks of laboratory experiments, survey experiments and field experiments. Readings combine both theoretical and methodological pieces on the design, analysis and interpretation of experiments with empirical applications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	511	Public Opinion	Provides an advanced examination of the political opinions of citizens. Covers how citizens structure their opinions and what factors can cause these opinions to change. In so doing, also evaluates various theoretical perspectives and methodological approaches used to study public opinion. Topics include political knowledge, ideology, partisanship and values. Moreover, provides insight into how these factors shape people's evaluation of government and how individual-level opinions are aggregated to produce public opinion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	512	Political Polarization	Advanced exploration of the concept of political polarization from a political psychology perspective. Introduces the concept of political polarization and provides an overview of recent trends in polarization in the U.S. while covering debates such as whether polarization has increased over time, whether Americans are polarized around issues or social identities, and how value divergence can culturally conflict. Also explores how the media and other external factors can affect citizens in ways that can either fuel or attenuate polarization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	513	Elite Decision Making	Provides a comprehensive examination of political psychology approaches to understanding and evaluating elite decision making. Introduces paradigms for analyzing elites' decisions that focus on the role of personality, leadership styles and prospect theory among others. Also focuses on covering frameworks that students can apply to systematically study how elite actors make decisions on the domestic and international stage. Combines conceptual readings explaining these approaches with applied readings that analyze the decision-making processes of elites through a range of case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	514	Campaigns and Elections	Provides a political psychology perspective on campaigns and elections. Topics include the effect of election rules, campaigns, social networks and the media on turnout and vote choice. Students engage with research that addresses these topics through psychological lenses focusing on the role of emotions, negativity, persuasion and learning. Combines theoretical literature with applied papers leveraging a variety of experiments conducted in campaign contexts. Also discusses implications for campaign organization and management.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	515	Advances in Media Effects	Provides an advanced examination of contemporary research and debates on media effects. Covers the paradigms of agenda setting, priming and framing. Considers key issues in the field of media effects by paying particular attention to the underlying psychological mechanisms through which the media can affect citizens' attitudes and social judgment. Draws on a variety of examples to demonstrate both the power and limits of media to affect citizens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	550	Capstone	Serves as the culminating experience of the Masters in Political Psychology. Students apply the theories, frameworks and evidence encountered during the course to explore a novel question or contribute to a contemporary research debate. In the process, students apply a multitude of tools to which they were exposed during the course of the program. Develops final products individually or in a small group based on consultation with course faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): Political Psychology MA student
PPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PRM	120	Leisure and Quality of Life	Conceptual foundations for understanding the role of leisure in the quality of life. Social, historical, psychological, cultural, economic, and political foundations of play, recreation, and leisure.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	
PRM	145	Special Events Management	Principles of programming and managing special events for diverse populations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
PRM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
PRM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student

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PRM	210	Leisure Delivery Systems	Introduces development, management and organization of the public, nonprofit and private sectors for the leisure services professions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): NLM 160 or PRM 120 with C or better if completed OR Visiting University Student
PRM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
PRM	304	Rec Planning/Facility Develop	Surveys development and management of public, private, and commercial recreation areas and facilities with a focus on meeting program needs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): CRD 210 with C or better; ENG 101, 105, or 107 with C or better; MAT 142 or higher with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
PRM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
PRM	310	Volunteer Management	Studies volunteer engagement practices integral to community organizations introducing management techniques such as program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
PRM	315	Community Recreation Systems	Explores and assesses community recreation delivery systems in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 120 with C or better OR Visiting University Student
PRM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
PRM	340	Outdoor Survival	Interdisciplinary approach to outdoor survival, including attitudes, psychological stress, physiological stress, preparation, hypothermia, navigation, flora, and wildlife.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
PRM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
PRM	364	Foundations of Rec Therapy	Overview of the fundamentals of therapeutic recreation. Introduces the delivery of treatment services for individuals with a variety of illnesses and disabling conditions experienced throughout the lifespan.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	370	Public Lands Management	Introduces outdoor recreation resource delivery systems; history of wilderness and outdoor recreation resources; the role of outdoor recreation in society; outdoor recreation agencies; related environmental issues.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	380	Wilderness & Parks in America	Examines the American Conservation Movement and the relationships between the environment and recreation behavior.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	SB & H	
PRM	384	Recreational Therapy Practicum	Facilitates a structured fieldwork experience with classroom instruction to integrate knowledge and develop skills and abilities in recreational therapy. Students gain direct service experience with health care, human services, education or recreation programs under the supervision of recreational therapists.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3-12		Pre- or corequisite(s): PRM 364
PRM	400	Intervention in Rec Therapy	In-depth analysis of theoretical and philosophical approaches to therapeutic recreation practice with emphasis on various facilitation techniques used in therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): PRM 364 OR Visiting University Student
PRM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student

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PRM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
PRM	406	Program Dsgn&Admn in RecTherpy	Examines management strategies and standards of practice applied in a variety of therapeutic recreation programs. Students write a comprehensive program plan including methods of assessment, documentation, service planning, service delivery and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 364 with C or better
PRM	413	Ldrshp & Prof Devlpmnt in RT	Examines therapeutic recreation leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	422	Special Event Programming	In-depth analysis of the theoretical and philosophical aspects of special event management relative to talent and entertainment, protocol, etiquette, ethics, and programming. Requires some field work in event management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	423	Operations and Design	Expands on the concepts of event programming with in-depth examination of the theoretical and philosophical aspects of event operations, festival site design, and working with subcontractors and vendors.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	427	Revenue Generation	Examines theoretical and philosophical aspects of revenue generation relative to special events through in-depth exploration of budgeting, accounting, and sponsorship opportunities. Requires field work at an event.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	440	Advocacy in Therapeutic Rec	Explores trends and issues facing the field of therapeutic recreation and applies advocacy practices to promote awareness and access.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 563 or PRM 440 OR Visiting University Student
PRM	450	Therapeutic Rec & Comm Health	Students gain an in-depth understanding of health and social needs among vulnerable populations. The interprofessional course combines field exposure and classroom instruction to maximize understanding and skill mastery assessing, planning and facilitating leisure education, and recreation therapy activities to promote community health.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 450 or PRM 550 OR Visiting University Student
PRM	451	Grant Writing	How to increase grant funding: creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
PRM	453	Inclusive and Adaptive Sports	Provides an overview of adaptive community recreation, the importance of inclusion in the recreational field and how to facilitate programs in this growing field.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or CSM 494 (Inclusive and Adaptive Sports and Recreation) or PRM 453 or PRM 494 (Inclusive and Adaptive Sports and Recreation) OR Visiting University Student
PRM	455	Rec Therapy w/Children, Youth	In-depth study of the philosophical concepts, principles and techniques of play and recreation applied in practice to promote holistic health and well-being among children, youth and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre- or corequisite(s): CDE 244 or PRM 364 with C or better if completed OR Visiting University Student
PRM	460	Assessment&Documentation in RT	In-depth study of the therapeutic recreation assessment process, including examination of interview techniques, assessment instruments, treatment planning, outcomes, evaluation, research, and documentation.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 364 with C or better OR Visiting University Student
PRM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
PRM	470	Environmental Communication	Park interpretation and environmental education that includes theories, principles and techniques.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 60 hours
PRM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student
PRM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student

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PRM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): CRD 210, CSM 201, NLM 220, or TDM 205; minimum 72 hours; minimum 2.50 GPA
PRM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
PRM	487	Advanced Special Events Mgmt	Advanced principles of special event sponsorship, public relations, marketing, contracting, risk management, and financial management.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	488	Event Marketing and Promotion	In-depth look at the influence and role of print and social media in special event management. Studies theory, strategies, and planning relative to experience marketing, including the use of promotions.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
PRM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PRM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
PRM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
PRM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
PRM	550	Therapeutic Rec & Comm Health	Students gain an in-depth understanding of health and social needs among vulnerable populations. The interprofessional course combines field exposure and classroom instruction to maximize understanding and skill mastery assessing, planning and facilitating leisure education, and recreation therapy activities to promote community health.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PRM 450 or PRM 550
PSB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	501	Basic Principles of ABA	Fundamental principles of behavior including the history, theory, definitions, processes, concepts and characteristics of applied behavior analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	510	Basic Principles Exp Analysis	Practical applications of research methodology to examine the effects and evaluate the efficacy of behavioral interventions. Provides an empirical science approach to designing, conducting and critically evaluating research involving applications of the experimental analysis of behavior in the use of graphic displays, single-case, ABAB, multiple baselines, changing criterion and alternating treatment designs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	511	Advanced Research Methods	Focuses on research techniques such as time-series methods for single-case assessment, behavior measurement and the effectiveness of treatment interventions on behavior. Topics include conducting component and parametric analyses and use of experimental designs such as withdrawal, reversal, criterion and multiple baselines.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		Pre-requisite: PSB 501; PSB 510
PSB	520	Ethics & Prof Standards in ABA	Ethical standards and legal responsibilities including regulatory requirements and Arizona licensing statutes for ABA professionals who provide services to individuals with special needs and their families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	530	Behv Obs & Functnl Assessment	Focuses on how to conduct behavioral observations and functional analyses using various methods for assessment and for data collection, organization and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSB 501; PSB 510
PSB	540	Dev of Appld Beh Intervention	Techniques for conducting task analyses; developing target intervention outcomes; determining alternative behaviors and environmental changes; use of behavior change procedures such as reinforcement, extinction, punishment, shaping, modeling, training and teaching.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSB 501, 510. Corequisite(s): PSB 530

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PSB	563	Basic Principles of OBM	Overview and the use of Behavioral Systems Analysis (BSA) and Performance Management (PM) as they relate to the identification and modification of environmental variables that can affect and improve individual and organizational performance as a system. Basic techniques include analysis of antecedents, behavior and consequences and development of interventions to support the desired performance improvements and increase system productivity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	573	Adv Prin Learn & Analy of Behv	Provides an in-depth review of the philosophy and theory of behaviorism and its scientific application. Includes Skinner's conceptual framework plus fundamental elements of behavior change and procedures.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	578	ABA in Dev Disorders	Provides an overview of the major theories and research related to the development of psychological disorders of childhood and adolescence including autism, attention deficit disorder, behavior disorders and intellectual disabilities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MS Applied Behavior Analysis major
PSB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		

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PSB	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSY	101	Introduction to Psychology	Major areas of theory and research in psychology. Requires participation in department-sponsored research or an educationally equivalent alternative activity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	
PSY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): Freshman; maximum 25 earned hours
PSY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	224	Intro Cognitive Neuroscience	Surveys topics relating brain activity to cognitive processes and behavior. Begins with an overview of neurophysiology and techniques to measure brain activity. Discusses perceptual and motor processes before investigating neural responses related to attention, memory and cognitive control. Concludes with a discussion of brain processes related to reward, decision making and social cognition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Credit is allowed for only PSY 224 or PSY 294 (Introduction to Cognitive Neuroscience)
PSY	230	Introduction to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): PSY 101 (PGS 101) with C or better; MAT 119, 170, 242, 243, 251, 260, 261, 262, 270, 271, 272, 274, 290 or 291 with C or better OR Visiting University Student
PSY	231	Honors Intro to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology for honors students. Lab includes learning to use statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	CS	Prerequisite(s): Barrett Honors student; MAT 119, 170, 242, 251, or higher with C or better; PSY 101 with C or better
PSY	244	Intro to Directed Child Study	Developmental theories and methods of social interaction with preschool children and supervised practicum in the Child Study Laboratory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSY	290	Research Methods	Planning, execution, analysis, and reporting of experiments. Literature, procedures, and instruments in representative areas of psychological research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	L or SG	Prerequisite(s): ENG 102, 105 or 108 with C or better; PSY 101 (PGS 101) with C or better; ECN 221, JUS 302, POS 401, PSY 230, 231, QBA 221, SOC 390 or STP 226 with C or better OR Visiting University Student
PSY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	302	Psych of Positive Leadership	To thrive in the 21st century world requires innovation, collaboration and the ability to lead during times of change and complexity. There is increasing demand for leaders who can combine a high level of technical ability with the social skills that are necessary for groups of people to live and work productively and in harmony with each other. Focuses on helping students to understand and apply key psychological and social processes that create the conditions for leaders and teams to thrive in dynamic, collaborative environments. Students become familiar with foundational research insights through an "action learning" format that integrates theory with structured opportunities for self-reflection and individual- and group-level practice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; PSY 101; Credit is allowed for only PSY 302 or PSY 394 (Positive Psychology) or PSY 394 (The Science Behind Well-Being and Happiness) or PSY 394 (Positive Psychology: The Science of Happiness)
PSY	304	Effective Thinking	Understanding and improving intellectual and behavioral skills: information analysis, inference, logic, problem solving, and decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 119, 170 or higher or PSY 230 with C or better OR Visiting University Student
PSY	306	Environmental Psychology	Concepts and research strategies in the study of behavior in interaction with physical environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 (PGS 101) with C or better
PSY	315	Personality Theory/Research	Definition and description of personality in terms of theoretical and methodological approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student

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PSY	320	Learning and Motivation	Principles of conditioning and motivation; approaches to learning, including acquisition of verbal materials, concepts, and motor skills; memory and transfer.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	323	Sensation and Perception	Underlying processes of vision, audition, and the other senses. Integrates theory, research, and application.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	324	Memory and Cognition	Processes underlying information storage and retrieval, including different kinds of memory, forgetting, depth of processing, and control processes.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PSY	326	Fundamentals of Brain Research	Introduces the study of the mind through brain research. Students acquire foundational knowledge in functional neuroanatomy, brain-mind relationships and brain research methodologies.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 290 with C or better; Credit is allowed only for PSY 326 or PSY 394 (Fundamentals of Brain Research) OR Visiting University Student
PSY	330	Statistical Methods	Advanced application of statistics to psychology. Highly recommended for students interested in attending graduate school.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): ECN 221, JUS 302, POS 401, PSY 230, PSY 231, SBS 304, SOC 390, or STP 226 with C or better OR Visiting University Student
PSY	341	Developmental Psychology	Analyzes behavior development in terms of psychological principles. Current research in human development.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	344	Directed Child Study	Theories and methods of intervention with preschool children and supervised practicum in the Child Study Laboratory.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): CDE 232, ECD 211 or PSY 341 (PGS 341) with C or better OR Visiting University Student
PSY	350	Social Psychology	Human social behavior, including such concepts as aggression, attraction, attribution, conformity, groups, helping, person perception, and persuasion.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; Credit is allowed for only PSY 350 or PSY 351 OR Visiting University Student
PSY	351	Honors Social Psychology	Critical analysis of human social behavior for honors students; topics include stereotyping, social influence, attraction, aggression, helping, groups, and attitudes.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): Barrett Honors College student; ENG 101, 105, or 107 with C or better; PSY 101; Credit is allowed for only PSY 350 or PSY 351
PSY	360	Cognitive Science	Examines cognition from the varied perspectives of philosophy, linguistics, psychology, computer science (artificial intelligence), and neuroscience.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 101 with C or better OR Visiting University Student
PSY	365	Community Psychology	Mental health and psychological well-being in the community, emphasizing current issues and related research.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 315 (PGS 315), PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	366	Abnormal Psychology	Historical and current definitions, theory, and research concerning abnormal behavior. Major categories of psychopathology, including related treatment approaches.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	368	Forensic Psychology	Clinical practice of forensic psychology; the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N		LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101; PSY 290 or minimum 45 hours OR Visiting University Student
PSY	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
PSY	370	Interpersonal Relationships	Development of personal skills for competent functioning in interpersonal relationships across multiple social contexts. Principles of mental health adjustment.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better OR Visiting University Student

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PSY	375	Psych of Addictive Behavior	Offers a psychological perspective on addictions, including those related to drug use, gambling, sex, eating and Internet use. Specific topics include basic pharmacology, behavioral processes in addiction, behavioral economics, impulsiveness, delay discounting, self-control, self-regulation, and prevention and treatment of addictions. Some of the data presented in the course derive from animal models; an evolutionary perspective is assumed throughout. Encourages students to think critically about drug use and dependence and about addictions in general. Students achieve these objectives through assigned readings (primarily empirical research), writing assignments, and active participation in, and facilitation of, class discussions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PSY 375 or PSY 394 (Psychology of Addictive Behaviors) OR Visiting University Student
PSY	384	Psych Undergrad Teaching Asst	The UTA experience allows students to work with the faculty to contribute to the effectiveness of a particular class and provides them with a unique educational benefit commensurate with their receiving upper-division course credit. Provides students with experience in teaching and interacting with faculty and students. These experiences help students make a decision about whether to pursue a graduate degree in psychology and to develop a personal philosophy of learning and teaching.	N	PRA	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 101 with C or better; minimum 30 hours; Credit is allowed for only PSY 384 or PSY 394 (Undergraduate Teaching Assistant) OR Visiting University Student
PSY	385	Psychology of Gender	Examines, from a psychological perspective, the similarities and differences in beliefs, attitudes, and behaviors of women and men.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
PSY	390	Experimental Psychology	Continuation of concepts in PSY 290, with emphasis on multifactor designs and programmatic sequence of experiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 101 with C or better; minimum 30 hours OR Visiting University Student
PSY	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	Y	RSC	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		
PSY	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
PSY	414	History of Psychology	Historical development of psychology from its philosophical beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	420	Analysis of Behavior	Research, applications, and philosophy of the analysis and control of human behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better; PSY 320 with C or better OR Visiting University Student
PSY	424	Genetic Psychology	Introduces the concepts, methodologies, and findings of behavioral genetics for Psychology majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better and PSY 290 with C or better OR Visiting University Student
PSY	425	Biological Bases of Behavior	Critical study of physiological psychology, e.g., brain mechanisms underlying motivation, learning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 325 with C or better OR Visiting University Student
PSY	426	Neuroanatomy	Structure and function of mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): PSY 325 with C or better; Credit is allowed for only PSY 426 or PSY 526 OR Visiting University Student
PSY	430	Industrial Psychology	Organizations and management systems: motivation and work performance; human factors in systems design and evaluation; personnel selection and testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MGT 301 or PSY 101 with C or better OR Visiting University Student

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PSY	432	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines makes it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better; Credit is allowed for only PSY 432 or PSY 498 (Embodied Cognition) or PSY 529 OR Visiting University Student
PSY	434	Cognitive Psychology	Human organism as a processor of information, from perception to cognition. Abstract concepts, semantic memory, attention, and mental imagery.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 323 or 324 with C or better OR Visiting University Student
PSY	437	Human Factors	Emphasizes human factors in high-technology systems. Specific topics include systems development, systems analysis techniques, displays, and controls.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	440	Industrial/Org Psychology	Examines personnel selection, performance assessment, job and workplace design, job satisfaction, organizational behavior, management systems, and industrial safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): PSY 101 with C or better
PSY	441	Cognitive Development	Experimental and theoretical literature in child development and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 341 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	443	Abnormal Child Psychology	Covers the major disorders of childhood and adolescence (e.g., autism, hyperactivity, phobias, and delinquency), including cause, diagnosis, treatment, and prevention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 315, 341, or 366 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	444	Adolscent Psych/Psychopathology	Advanced-level survey of normal adolescent psychological development and psychological disorders of this age period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 341 with C or better
PSY	446	Social Development	Discusses theory, research, and issues regarding social development. Topics may include formation of attachments, prosocial development, and gender-role development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 341 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	447	Psychology of Aging	Analyzes loss, maintenance, and gain associated with cognitive and affective aging. Individual differences in coping with normative life transitions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	451	Stereotyping/Prejudice/Discrim	Critical investigation of the processes underlying, and the factors contributing to, stereotyping, prejudice, and discrimination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 350, or 351 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	453	Organizational Behavior	Surveys psychological theory and research as applied to the behavior of individuals in organizational settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): PSY 350 with C or better; Credit is allowed for only PSY 453 or PSY 598 (Organizational Behavior) OR Visiting University Student
PSY	458	Group Dynamics	Theories and methods of group leadership, group effectiveness, communication within groups, and relations between groups and individual members.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	461	Interpersonal Influence	Principles and procedures that affect the process of social influence; consideration of attitudinal, compliance-inducing, and perceptual influences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better; PSY 350 (PGS 350) or 351 with C or better
PSY	462	Health Psychology	Contributions of psychology to health promotion and illness prevention, adaptation to acute and chronic illness, and to the healthcare system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	465	Psychology of Stress & Coping	Readings in theory and research in the area of stress and coping. Lecture, discussion, class presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 315 (PGS 315), 350 or 351 with C or better; PSY 290 with C or better
PSY	468	Psychology and Law	Theories, research, and practice in psychology as related to law, including criminal, civil, domestic relations, and professional issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): CRJ 302; Law and Human Behavior certificate student OR PSY 290 with C or better OR Visiting University Student
PSY	470	Psychopharmacology	Basis of drug action at physiological and behavioral levels. Psychological and medical applications and limitations of drugs used in the treatment of mental illness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 325 or one of the following: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only PSY 470 or PSY 570 OR Visiting University Student

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PSY	471	Psychological Testing	Methods and theory of psychological testing; various types of psychological tests; consideration of ethical, social, and legal aspects of testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better
PSY	472	Clinical Psychology	Clinical psychology as a science and profession. Historical development, methods of interviewing, assessment, and therapeutic intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 366 (PGS 466) or 443 with C or better OR Visiting University Student
PSY	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
PSY	475	Multicultural Clinical Psych	Discussion-based course that focuses on cross-cultural conceptions of mental illness, diagnosis and treatment approaches, and beliefs and practices of specific ethnic groups in the United States. Encourage students to critically think about diversity issues in clinical psychology, one's own attitudes, and culture and psychology more broadly. Students achieve these objectives through reading empirical articles and chapters; taking quizzes and exams; completing hands-on exercises, essays and other writing assignments; and actively participating in and facilitating class discussions.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Minimum 45 hours; Credit is allowed for only PSY 475 or 498 (Clinical Psychology: Multicultural Issues)
PSY	482	Soc Influence/Consumer Behav	Discusses social influence principles, emphasizing strategies employed by professionals that affect consumer behavior. Analyzes consumer defenses against manipulations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): PSY 350 with C or better
PSY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): minimum 45 hours
PSY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PSY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-7		Prerequisite(s): PSY 290 with C or better
PSY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 399
PSY	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	501	Supervised Teaching	Experience in and examination of perspectives on teaching undergraduate psychology.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	502	Professional Issues in Psych	Introduce graduate students to various aspects of the professional roles of psychology, as well as to the ethical standards of the profession.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only PSY 502 or PSY 598 (Seminar on Professional Issues in Psychology)
PSY	512	Advanced Learning	Principles and theories of learning, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	513	Fundamentals in Quant Methods	Fundamental concepts in quantitative research, with an emphasis on basic statistical knowledge and skills.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 513 or PSY 598 (Fundamentals in Quantitative Methods)
PSY	514	Forensic Psych Research	Overview of analyses and methods of forensic psychology research. Focuses on literacy and skills in assessment and scale development, experimentation and RCT, prediction and modeling, and presentation and synthesis of data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	515	Quantitative Analysis I	Introduces advanced experimental and quasi-experimental analysis. Focuses on group-based design and analysis of variance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	516	Quantitative Analysis II	Advanced experimental and quasi-experimental analysis. Focuses on principles underlying linear regression and related statistical techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 515 with B or better; Credit is allowed for only PSY 516 or PSY 598 (Psychological Methods II)
PSY	517	Quantitative Analysis III	Covers basic multivariate statistical techniques currently utilized in psychology with a primary focus on factor analysis and structural equation modeling.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 516 with B or better; Credit is allowed for only PSY 517 or PSY 598 (Quantitative Research Methodology & Statistics III)
PSY	526	Neuroanatomy	Covers the structure and function of the mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): graduate; Credit is allowed for only PSY 426 or PSY 526
PSY	528	Sensation and Perception	Principles of sensory and perceptual processes, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	529	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines make it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): graduate standing in Psychology; Credit is allowed for only PSY 432 or PSY 529 or PSY 591 (Embodied Cognition)
PSY	530	Intermed Statistics	One-way and factorial designs; contrasts; post-hoc tests; probing of interactions; mixed designs; power; computer applications; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or PSY 530
PSY	531	Multiple Regression/Psych Res	Multiple regression and correlation; hierarchical regression; interactions; curvilinear relationships; categorical predictors; ANOVA in regression; regression diagnostics; regression graphics; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	532	Analysis of Multivariate Data	Matrix algebra for multivariate procedures, component and factor analysis, canonical and discriminant analysis, classification, MANOVA, logistic regression, hierarchical linear model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	533	Structural Equation Modeling	Path analysis; exploratory and confirmatory factor analysis; recursive and nonrecursive latent variable models; mean and covariance structures; latent growth models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	534	Psychometric Methods	Theory and practice of psychological measurement using classical and modern test theories. Reliability assessment, test validation, test construction, test usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	535	Cognitive Processes	Theoretical/empirical treatment of the human organism as a processor of information, including abstraction, memory structure, problem solving, and thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	536	Stat Mthds Prevention Research	Statistical methods used in prevention research including epidemiological methods, logistic regression, program effect estimation, estimation, and mediation analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	537	Longitudinal Growth Modeling	Growth modeling methodology to describe individual variation in development over time. Employs multilevel and structural equation modeling frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	538	Adv Structural Equation Model	Mean and covariance structure analysis. Includes multiple-group modeling, two-level hierarchical modeling, longitudinal growth modeling, analysis with categorical outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	539	Multilevel Models Psych Resch	Multilevel (i.e., hierarchical linear) modeling, as described by Raudenbush and Bryk (2002) and others. Covers analytic strategies for analyzing a variety of different nested data structures (e.g., couples data, clients nested within group therapy settings, children nested within classrooms, longitudinal data). Covers two- and three-level models for cross-sectional and longitudinal data and also addresses related topics such as centering and estimation. Students perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 531; Credit is allowed for only PSY 539 or 591 (Multilevel Modeling)

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PSY	540	Missing Data Analysis	Covers analytic strategies for analyzing data with missing values, with a special emphasis on modern approaches for dealing with missing data, in particular maximum likelihood missing data handling and multiple imputation, maximum likelihood estimation and multiple imputation. Familiarizes students with missing data theory, traditional analysis methods (e.g., deleting incomplete cases, single imputation methods), maximum likelihood estimation, multiple imputation, planned missing data research designs, and the inclusion of auxiliary variables. Students learn how to perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 532; Credit is allowed for only PSY 540 or 591 (Missing Data)
PSY	541	Research Cognitive Development	Theoretical and empirical issues in the study of children's knowledge and cognitive processes. Comparison of research in Piagetian and other traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	542	Social Development	Reviews and critiques major issues in the area of social development. Covers theory, research, and content.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	543	Stat Mediation Analysis	Specifically covers the substantive motivations for mediating variables and third-variable effects (interaction, confounder, covariate and mediator) in general. Mediation represents a chain such that one variable causes a mediating variable and the mediating variable causes a dependent variable. Describes the single mediator model in detail including assumptions, estimators and geometric interpretations. Once the details of the single mediator model are understood, analysis is extended to multiple mediator models, path analysis, and models with moderators and mediators. Discusses modern causal inference approaches for mediation along with latent variable models, multilevel models and special models for longitudinal data. Also describes research designs for investigating mediating variables. Students learn how to perform and interpret the results of analysis using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 530; PSY 531; Credit is allowed for only PSY 543 or PSY 591 (Mediation) or PSY 591 (Statistical Mediation Analysis)
PSY	544	Adv Psy of Crim Investigation	Reviews the different types of evidence that state and federal governments use to investigate crimes and incriminate suspected criminal offenders, with a focus on understanding psychological factors that affect the reliability of criminal evidence and the accuracy of criminal justice outcomes.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	545	Advanced Legal Psychology	Surveys psychological theory and research as applied to the cognitions, feelings and behavior of individuals in the legal system. Explores the implications of several subfields of psychology (e.g., social, cognitive, clinical) for legal settings, such as police departments, courtrooms, jury rooms. Provides foundation for those who are considering a career in forensic psychology, law, social work, criminal justice and should also be interesting to those who want to know more about the social and psychological issues at play in the legal system.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	546	Advanced Forensic Psychology	Advanced overview of the clinical practice of forensic psychology: the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	547	Correctional Psychology	Principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings and with incarcerated populations, establishing successful relationships with correctional staff and inmates.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	549	Capstone in Forensic Psych	Culminating experience for students in the Master of Science in Forensic Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Forensic Psychology MS student
PSY	550	Advanced Social Psychology	Theory and research concerning interpersonal perception, decision making, attitude formation and change, group processes, social motivation, and interaction processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	551	Advanced Social Psychology	Continuation of PSY 550.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	553	General Psychology Capstone	Culminating experience for online students only in the Master of Science in Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Psychology MS student
PSY	554	Item Response Theory	A collection of measurement models based on item response theory (IRT). The models express the probabilities of responses to test or questionnaire items as a function of latent respondent characteristics and item properties. IRT models form the basis for measurement in standardized educational testing, but generally are also now used in clinical, social and personality measurement in psychology, medicine and the social sciences. Assumptions underlying IRT models, methods of parameter estimation and fit evaluation. Also covers important applications of the models in computerized adaptive testing, the detection of measurement bias and multidimensional IRT. Uses several software tools useful in IRT modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 534; Credit is allowed for only PSY 554 or 591 (Item Response Theory)
PSY	555	Exper/Quasi-Experiment Designs	Reviews research techniques. Analyzes lab and field research; applications to specific topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	560	Advances/Theoretical Psych	Covers new empirical and theoretical work in psychology with emphasis on its applicability.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
PSY	563	Prev Plan & Eval Serv Setting	Provides the foundational and theoretical knowledge necessary for prevention planning and evaluation in service settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	564	Prev Educ, Comm, Serv Delivery	Provides the foundational and theoretical knowledge necessary for aspiring professionals planning to serve as a resource to community members and organizations regarding prevention education, the promotion of programs, services and activities as well as maintaining good public relations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	567	Prev Organization & CC	Provides the foundational and theoretical knowledge necessary for affecting organizational and community change to promote and engage in evidence-based prevention practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568
PSY	569	Prof Ethics, Grwth, Responsbty	Provides the foundational knowledge necessary for engaging and maintaining practices in prevention that are ethical, culturally responsive and adhere to the beneficence and non-maleficence principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	570	Psychopharmacology	Provides a broad overview of numerous classes of both psychotherapeutic and addictive drugs (which are sometimes overlapping). Focuses on the classification, mechanism of action, pharmacokinetics/pharmacodynamics, and clinical efficacy of medications that are currently used for the treatment of various psychiatric disorders including mood disorders, anxiety, schizophrenia, ADHD and other conditions. The latter portion of the class focuses on therapeutic drugs that also have abuse potential, including some psychostimulants, opiates, sedative/hypnotics, cannabinoids, steroids and hallucinogens.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 470 or PSY 570 or PSY 591 (Psychopharmacology)
PSY	573	Psychopathology	Theory and research relating to the contribution of psychological, social, physiological, and genetic factors to the development and persistence of abnormal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	574	Psychotherapy	Detailed survey of the theoretical and empirical literature relating to verbal psychotherapy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	576	Dynamical Systems in Psych	Analyzes patterns of behavior change in psychological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	578	Developmental Psychopathology	Covers major theories and research related to the development of psychological disorders of childhood and adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	601	Assessment & Diagnosis	Discusses scientifically informed approaches to assessment. Reviews research-based practical strategies for assessing the clinical symptoms, treatment needs and clinical outcomes of individuals who have problems with substance use. Students examine and explore how sociocultural views of substance use relate to patterns of use, and impacts individuals with substance use disorders, and their families. Uses a biopsychosocial approach to discuss the processes involved in addictive behaviors. Addresses how to weave assessment through the entire process of care, from initial screening, through treatment, to relapse prevention. Examines various screeners and assessments, and diagnostic interviews used to detect substance use disorders, along with the strengths and limitation of each. Also reviews how to communicate findings of assessments and diagnoses to individuals, parents and legal entities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
PSY	602	Comorbidity Substance Use	Reviews common co-occurring psychiatric, medical and legal problems with substance use related disorders. Discusses scientifically informed approaches to assessment and treatment. Examines and explores how mental illness in combination with chemical dependency and/or substance abuse plus other challenges, such as disabilities and legal problems, impacts individuals, families and society. Uses a biopsychosocial approach to explore and identify evidence-based practice and research in dual diagnoses. Addresses all of the DSM 5 major disorders, including mood, anxiety and psychotic disorders occurring with substance abuse. Examines various screeners and assessments used to detect the presence of and severity of co-occurring disorders. Students learn about the efficacy of psychopharmacology and psychosocial treatments in the treatment of dual diagnoses disorders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	603	Evidence-Based Interventions	Provides a comprehensive review of the evidence-based psychosocial and pharmacological treatments for substance use related problems. Although the current evidence base for the effects of psychosocial interventions is sizable, subsequent steps in the process of bringing a psychosocial intervention into routine clinical care are less well defined. This course details the reasons for the gap between what is known to be effective and current practice and offers recommendations for how best to address this gap by applying a framework that can be used to establish standards for psychosocial interventions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	604	Multicultural Issues	Cultural competence refers to an ability to interact effectively and respectfully with people of different cultural and socioeconomic backgrounds. Developing cultural competence results in an ability to understand, communicate with and effectively interact with people across cultures. Within the substance use field, programs with culturally responsive policies, assessments and treatment practices have been associated with higher retention of minorities in substance use treatment. Reviews the historical and cultural context of the most prominent cultures in the state of Arizona such as Hispanic Communities, Native Americans, African Americans, Asians and Pacific Islanders. Also reviews the historical and cultural context across sex, gender and sexual orientation as it relates to substance use. Spends the majority of the course time discussing the development of culture-centric approaches in practice, barriers to treatment and integrating diversity into treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	605	Grp Thrpy for Subst Rel Probl	Provides a comprehensive review of group dynamics and processes as they relate to addictions and substance use disorders. Reviews theories, research and evidence-based treatment interventions related to group therapy for addictions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	606	Case Management	Successful treatment of substance use disorders requires a comprehensive approach in order to be effective. Case management provides support for clients throughout the treatment process by assessing needs and then arranging, coordinating, monitoring, evaluating and advocating for a package of multiple services to meet the specific client's complex needs. Reviews the principles, knowledge, skills and attitudes necessary to provide evidence-based case management services.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student
PSY	607	Family & Adolescent Treatment	Surveys topics of treatment modalities, interventions, psychoeducation, crisis management, trauma-informed care and continuing care for families and adolescents. Covers empirically validated and evidence-based treatments. Students learn to implement interventions based on the assessment and guided by the treatment plan.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student
PSY	608	Supervision Addiction	Supervision provides a bridge between the classroom and the clinic, and it is necessary to improve client care, develop the professionalism of clinical personnel, and impart and maintain ethical standards in the field. Provides an overview of the fundamentals, principles, models and methods of clinical supervision. Examines the roles, functions, skills and competencies of clinical supervisors with consideration for the unique aspects of supervising addiction counselors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student

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PSY	678	Prev Psychsoc Intervntns	Provides the foundational knowledge necessary for identifying evidence-based protocols.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PTX	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
PTX	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
PTX	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
PTX	301	Basics Pharmacology&Toxicology	Human pharmacology and toxicology focusing on mechanisms of drug action, clearance systems and dose response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 234 OR Visiting University Student
PTX	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PTX	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better, one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
PTX	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)

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PTX	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
PTX	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286 OR BIO 353; LSC 347; Credit is allowed for only FOR 394 (Forensic Toxicology) or FOR 401 or PTX 401
PTX	404	Forensic Toxicology Lab	Focuses on best practices and contemporary protocols and practices used by forensic toxicology labs. Offers topics and exercises dealing with drugs of abuse including alcohol, prescription medications, over the counter medications, and other substances which may be found in the body by the forensic toxicologist.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s): BIO 305 or FOR 286; FOR 401; Credit is allowed for only FOR 404 or PTX 404 OR Visiting University Student
PTX	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347; BIO 353; CHM 231 or 234; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student
PTX	450	Pharmacology & Toxicology Lab	Provides experimental and laboratory experience in conducting toxicology tests to determine the ED50 and LD50 for chemicals. Covers the pragmatic considerations of experimental design, implementation and data analysis. Experiments include whole organism tests as well as cell assays and numerical modeling experiments.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BCH 372 or BIO 354; Pre- or corequisite(s): FOR 475 or LSC 432 or LSC 475 or PTX 432 or PTX 475
PTX	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or BCH 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
PTX	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
PTX	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
PTX	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
PTX	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours

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PTX	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
PUP	190	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student
PUP	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
PUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	200	Cities in Cinema	Environmental, aesthetic, social, economic, political cultural, and other factors influencing global cities seen through films from around the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & H & G	
PUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	301	Introduction to Urban Planning	Theoretical and practical aspects of city planning. Interrelationships among physical planning, environment, government, and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
PUP	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
PUP	361	Planning Workshop	Basic site planning and design techniques. Collection and analysis of information and basic planning research. Report writing and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better; Minimum 45 hours
PUP	362	Journey Stories	Explores journeys, storytelling and geographies—real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
PUP	363	History of Planning	Historical overview of western urban and regional planning and planning theory, focusing on the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	410	Public Participation Planning	Theory and practice of public participation in planning. Examines and critiques participation techniques and roles of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	412	History of the City	The city from its ancient origins to the present day. Emphasizes European and American cities during the last five centuries. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as analytical essays and an in-depth research paper are required in addition to regular tests and quizzes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better

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PUP	420	Theory of Urban Design	Analyzes the visual and cultural aspects of urban design. Theories and techniques applied to selected study models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	424	Planning Methods	Methods for urban planning research. Emphasizes research design, quantitative and qualitative methods, survey research, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	425	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	Prerequisite(s): PUP 301 with C or better; Credit is allowed for only PUP 425 or PUP 525
PUP	430	Transport Planning/Environment	Overview of transportation planning from the perspective of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	432	Planning/Developmnt Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	434	Economic Development Planning	Provides a broad overview of urban economic development planning in the U.S. This overview includes the role and goals of economic development planning in today's global information economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	436	City Structure and Planning	Political structure and organization of government as it relates to planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	442	Environmental Planning	Environmental planning problems, including floodplains, water quality and quantity, solid and hazardous waste, air quality, landslides, and noise.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	445	Women and Environments	Examines the role women play in shaping the built environment; ways built/natural forms affect women's lives. Focuses on contemporary U.S. examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	C	Prerequisite(s): junior, senior, post-baccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or post-baccalaureate graduate
PUP	452	Ethics and Theory in Planning	Ethics and theory of professional planning practice in urban and regional communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	462	Graphic Design for Planners	Covers a synthesis of graphic design concepts for communication of complex data as well as advanced report production and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	465	Sustainable Urbanism	Examines the history, theory and practice of "sustainable urbanism," now defined by reform movements such as new urbanism, ecological urbanism, smart growth, and livable cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s) with C or better: Sustainability major in a sustainability concentration: SOS 110 or 111 or PUP 190; minimum 45 hours; All other majors: PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student
PUP	481	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student
PUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban Planning undergraduate student
PUP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
PUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
PUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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PUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): junior, senior, postbaccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or postbaccalaureate graduate OR Visiting University Student
PUP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
PUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
PUP	501	Planning, History and Theory	Comprehensive review of planning profession within a political, governmental, multicultural, and gender framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
PUP	510	Public Participation Planning	Explores the history, theory and practice of public participation in urban planning, including the emergence and uses of participation in the planning field; how to manage different types of processes; and the relationship between participation and social equity. Starts by addressing foundational concepts, the political context of planning, and the history of public involvement in planning decision-making. Next, delves into the process of preparing a public participation plan and explores a range of commonly used information sharing and consensus building techniques. Covers how to effectively lead public meetings and analyze information gathered. The latter part of the class focuses on special topics pertaining to public participation. These include bottom up, community-led processes, overcoming communication issues, changing opportunities for participation in the information age, engaging diverse groups, and participatory processes in the Phoenix region.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PUP 510 or PUP 598 (Public Participation Planning)
PUP	515	International Planning & Dev	Introduces globalization, international development, international planning practices and policies, urbanization and urban and regional planning in developing nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	520	Plan Practice, Ethics & Proces	Reviews past and current theoretical developments related to social change perspectives, the role and ethics of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	525	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 425 or 525
PUP	531	Planning/Develop Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	535	Water Law and Planning	In-depth study of legal materials providing substantive knowledge of water law, water management issues, and land use planning options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	542	Environmental Planning	Environmental policies and their relationship to environmental planning practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 442 or PUP 542
PUP	544	Urban Land Use Planning	Theory and methods of urban land use planning, including the rational planning process, comprehensive, functional, and neighborhood plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	548	Global Perspectives Urban Res	Theory and applications connecting sustainability sciences and practice to urban environmental planning. Sustainable urban development, restoration, and preservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	550	Transportation/Environment	Examines transportation planning from the perspectives of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PUP	553	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree-or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
PUP	561	Urban Design Workshop	Workshop course focuses on applying knowledge and skills in a "real world" setting, developing meaningful planning and design proposals for existing urban areas.	N	STO	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	562	Tribal Community Planning	Study of tribal planning and best practice including underlying social, political and environmental issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	564	Transportation Systems Pro Sem	Provides a cross-disciplinary exploration of multimodal transportation systems, with particular emphasis on those issues affecting the state of Arizona. Designed for graduate students in the interdisciplinary Transportation Systems Certificate program (though open to all graduate students), the course offers a broad overview of key concepts; transportation modes (road, rail, air, transit, non-motorized); geographic settings (rural, urban, parks, tribal lands, international trade); and issues (economics, equity, planning, safety, finance, regulation, environment, public participation and alternative fuels). Features speakers from various fields and academic disciplines related to transportation, introducing a variety of perspectives, terminology and methods. Designed as a graduate-level seminar, emphasizes active participation by all students in group discussions based on required readings and information presented by guest lecturers and the instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 564 or PUP 591 (Transportation Systems Pro Sem)
PUP	565	Sustainable Urbanism	Examines the history, theory and practice of "sustainable urbanism," now defined by reform movements such as new urbanism, ecological urbanism, smart growth, and livable cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 465 or 565
PUP	571	Planning Methods I	Theory, methods, and techniques of demographic and economic analysis utilized in urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	576	GIS Workshop	GIS as a tool to address large, multifaceted problems.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	577	Communctn & Visualization Tools	Covers graphic and verbal skills required to effectively communicate planning information and ideas. Emphasizes digital graphics and other computer-based tools and presentation formats, focusing on applying visual strategies and tools most often used by planners to make a persuasive argument.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): degree- seeking or nondegree- seeking graduate student; PUP 570 and 571 with C or better
PUP	579	Planning Methods II	Covers key qualitative skills and techniques that planners require, including research design and the understanding of validity and reliability issues, case study research approaches, qualitative data collection strategies, and strategies for analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PUP 571 with C or better
PUP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	581	Spatial Optimization Fndmnts	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581

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PUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Urban/Environmental Planning MJEP student
PUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Graduate student
PUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Pre-requisites: Urban and Environmental Planning graduate student
PUP	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	642	Urban & Regional Economic Analysis	Land use and locational impact of economic activity and the urban real property market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		
PUP	701	Urban Planning Colloquium	Presents and discusses new research findings and methods in urban planning.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	710	Planning Theory	Explores and critically evaluates planning theories and approaches with the objective of articulating new ideas for planning research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PUP	724	Planning Methods	Tools useful for urban planning research; emphasis on research design and survey methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
PUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
QBA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: Graduate Students only (degree and non- degree seeking)
RDG	291	Children's Literature	Focuses on selecting and using children's literature and related nonprint media to support the elementary school curriculum. Covers the elements, genres and applications of children's literature as well as the resources available for elementary classroom teachers. Constructs criteria for the selection of trade books for educational and personal use. Also explores the role of digital media in children's literature.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
RDG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
RDG	322	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
RDG	323	Literacy Process/Content Areas	Principles and practices for planning subject matter units of instruction that explicitly address learning with texts across academic disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
RDG	413	Lang Literacy 2 in Elem Schls	Applies effective practices for literacy instruction in authentic classroom settings. Prepares teacher candidates to plan and deliver balanced literacy approaches with diagnostic assessment strategies and adaptations to support second language learners and struggling readers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
RDG	505	Lang and Lit Across Lifespan	Provides a foundational understanding of language and literacy development over the course of the lifespan. Addresses early literacy skills, decoding, comprehension, and affective factors of literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student
RDG	507	Content Area Literacy	Theory, teaching strategies, and practical application concerning learning from text across subject matter disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	508	Elem Content Area Lit	Presents theory, rationale, and teaching strategies concerning learning from oral, print, and electronic texts across subject-matter disciplines. Emphasizes practical application of content area literacy principles. Familiarizes participants with the literate lives of today's youth, facilitate participants' inquiry into strategies to motivate students in content learning, and provide strategies to improve students' comprehension and application of content material. Readings, online inquiries, and assignments focus on application of course content. Emphasizes implications of recent research and theory in content literacy and adolescent literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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RDG	510	Literacies, Dig Tech, Lrng	Explores how literacies are changing as a result of emerging digital media and technologies, and the implications of these cultural and technological shifts for literacy teaching and learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	512	Theory Founds-Lang/Literacy	Introduces theoretical lenses useful in understanding issues in language and literacy education and research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	515	Mltimdl Lit for Chld & Adlscnt	Designed for classroom teachers, librarians and other interested literacy educators as part of the Masters of Arts degree in Literacy Education. Focuses on the analysis of children's, young adult and multimodal literature; understanding the modes of representation and communication used in these texts; and the various sociocultural roles these texts play in contemporary society. Provides participants with the opportunity to read, enjoy, analyze and discuss a wide variety of children's and young adult literature. Also explores numerous authors, illustrators, genres, formats and themes of children's and young adult literature.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	518	Lang & Lit for Diverse Lrnrs	Provides a foundation of theory and research related to literacy instruction for culturally and linguistically diverse learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	519	Writing Thru The Lifespan	This language and literacy course provides a foundational understanding of writing development, instruction and assessment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	520	Ess Elemnts EED Lit	Intended for practicing teachers, focuses on the development of a comprehensive approach to Reading and Writing Instruction K-8.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	530	Lit Mthd, Asst, Reflectn PreK-5	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for children in pre-kindergarten through fifth grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	531	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538
RDG	532	Language and Literacy II	Builds on the theoretical knowledge and pedagogical skills presented in the previous course. Uses diagnostic assessments in the planning and implementation of intervention literacy lessons for struggling readers/writers in a classroom setting as part of the course case study assignment. Includes differentiated instructional and assessment strategies to address the needs of diverse learners to include English language learners. Also includes an emphasis on writing and composition to ensure future teachers have the knowledge necessary to teach all forms of writing in the elementary classroom. Includes an overview of the historical development of children's literature and the criteria necessary for analyzing and selecting all genres of quality children's literature.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Pre- or corequisite(s): RDG 531
RDG	540	Lit Mthd, Asst, Reflectn 6-Adlt	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for adolescents (grade 6-12) and adults (age 16 and above not in K-12 setting).	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	550	Practicum Exper-Elem/Sec Read	Practicum experience utilizing assessment and instructional techniques for classroom settings. See RDG 557 for State of Arizona reading endorsement.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	555	Formal Measures of Lit	Understanding the attributes of standardized tests and applying this information to analyze, select, and explore their use.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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RDG	556	Assess/Proc-Elem/Sec Reading	Techniques for classroom and clinical reading/literacy assessment and instruction. Emphasizes continuous assessment. May be taken concurrently with RDG 550 or 557. Recommended for State of Arizona reading endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	563	Children's Literature	Selects and uses children's literature and related nonprint media to support the elementary school curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
RDG	572	Literacy Teacher Leader	Provides a foundation in educational and instructional leadership that support continuous school literacy improvement. Also provides opportunities to apply these fundamentals by creating and conducting literacy workshops/professional development for a group of teachers or other literacy educators. Meets the leadership requirement for the AZ Reading Endorsement and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Curriculum and Instruction (Literacy Education) MA student; Credit is allowed for only RDG 572 or RDG 598 (Literacy Teacher Leader)
RDG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	597	Capstone	Provides a foundation in practitioner action research and literacy leadership with opportunities to apply these fundamentals by creating, conducting and researching literacy professional development for literacy educators and other community practitioners. Meets the leadership requirement for the AZ Reading Endorsement, addresses the International Literacy Association Standards for Literacy Professionals, and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Literacy Education MA student
RDG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student

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RDG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
REA	380	Real Estate Fundamentals	Real estate for the student/consumer with an emphasis on the applied aspects of each area of real estate specialization. Not open to Real Estate majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA, OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	401	Real Estate Appraisal	Factors affecting the value of real estate. Theory and practice of appraising and preparation of the appraisal report. Appraisal techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): FIN 300, 302, 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	411	Real Estate Law	Legal and ethical aspects of land ownerships, interests, transfer, finance development, and regulations of the real estate industry.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereq(s): W.P. Carey BA or BS BUS mjr or non-BUS stdnt w/ min 56 hrs & min 2.50 gpa; FIN 300, 302, or 303 or REA 380 w/ C or better OR degree- or nondegree-seeking grad stdnt; Credit allowed for only LES 411 or REL 411 OR Visiting University Student
REA	441	Real Estate Land Development	Neighborhood and city growth. Municipal planning and zoning. Development of residential, commercial, industrial, and special purpose properties.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey BA or BS Business major or non-business student with minimum 56 hours and minimum 2.50 GPA; FIN 300, 302, or 303 or REA 380 with C or better OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	456	Real Estate Investments	Analyzes investment decisions for various property types. Cash flow and rate of return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): FIN 300, 302, 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		
REA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey BS or BA major or non-business major with minimum 56 hours and 2.50 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student

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REA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		
RED	501	Urban Econ & RE Dev Principles	Explores the basic principles of urban economics and their application to real estate decision making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	502	Real Est Valu-Fin & Capt Mkts	Addresses the concepts of valuation applied to real estate and teaches how to apply these principles. Intermediate- to advanced-level course in mortgage finance, and associated capital market innovations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	503	Real Estate Market Analysis	Focuses on market analysis and market data gathering methods, means, and techniques necessary in identifying market opportunities and developing specific market strategies for successful real estate development.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	504	RE Site Analy Mstr Plan Design	Analyzes the physical characteristics of a property, including the site and physical area, legal, political, economic, and financial facts that impact the highest and best use of a property and what can be built upon the property.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 504 or 591 (Real Estate Develop Principles)
RED	505	Land Use&Public Entitlement Pr	Covers a basic understanding of the legal and practical zoning and governmental land entitlement process. Examines the legal history, structure, and implications of zoning, as well as the fundamentals of "real life" situations that occur in the entitlement and real estate development field. Provides a broad overview of this process from a legal and development viewpoint, but is not intended to be a comprehensive analysis of all entitlement issues.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 505 or 591 (Mkt Segmentation/Analysis)
RED	506	Real Estate Law for Developers	Covers the nature of property and the legal system as it relates to purchase agreements, title, surveys, declarations of covenants, defining easements, and licenses among other related topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	507	Synthesis Project #1 Residenti	Employs the students learning through application of developing a specific parcel of land.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate
RED	508	Real Estate Engineer. & Constru	Explores the basic principles of engineering and construction of real estate development projects. Reviews construction technologies within the framework of architectural design and engineering as well as construction means, methods, and systems.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	509	Adv. Fin Analy for Com RE	Teaches more complex financial analysis of income-producing property, including various decision-making tools such as Monte Carlo, option pricing, assessing alternatives, and how to build these into financial models. Also teaches financial analysis of business structures to determine potential outcomes such as debt and equity structures, waterfalls, claw backs, and other business and ownership concepts. Emphasizes strategic alternatives, assessing risk and conversion events.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	510	Re Est Devp. Bus & Proj Mgmt	Teaches management of real estate development companies and process. Students learn the various aspects of project management, financial management and project accounting, lending relations and managing loans and pay applications as well as dispute resolution and strategic partnerships.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	511	Design of the Built Environmen	Teaches the built environment and how that applies to creation of places, market positioning, capturing value and the importance of good design to the business of real estate.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 511 or 691 (Real Estate Dev Project Mgmt)
RED	512	Real Estate Law for Developers	Teaches issues faced by developers such as various types of financing structures, including special districts, TIF and bond financing. Covers issues and process of raising capital and various forms of securing equity. Discusses private placement memorandums, limited liability companies, partnerships and public private partnerships. Students also learn about environmental law, income tax issues, negotiation, and alternative dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 512 or 691 (Adv Real Estate Finance/Analys)
RED	513	Adv Real Est Engineer, Constru	Covers various construction delivery methods, construction project management and scheduling, construction contracts, mechanics and materialmans liens, and pay applications. Students also learn about sustainability and the built environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 513 or 691 (Real Estate Dev. Project Mgmt)

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RED	514	Synthesis Project #2 Income Pr	Through application to a specific problem given by faculty, students work in teams to analyze and seek solutions to development of land for an income-producing property. Students investigate a specific parcel of land, performing due diligence, preparing a market and segmentation analysis, defining highest and best use(s), designing a solution, preparing residual land value analysis, defining a product offering, pricing points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Real Estate Development MRED student
RED	515	Synthesis Project #3 Capstone	Employs all that the students have learned through application to a specific problem given by faculty. Students work in a team to analyze and seek solutions to development of land for a complex, mixed-use project. Students investigate a specific parcel of land and are required to perform due diligence, prepare a market and segmentation analysis, define highest and best use(s), design a solution, prepare residual land value analysis, define a product offering, price points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	4		Pre-requisite: Master of Real Estate Development major; Credit is allowed for only RED 515 or 598 (Ret Analys; High Dens Mix Use)
RED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
RED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		
REL	100	Religions of the World	Introduces the history of religious traditions of the world, including Buddhism, Christianity, Hinduism, Islam, Judaism, and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 100 or REL 200 OR Visiting University Student
REL	101	Religion, Culture, Public Life	Explores how religions are conditioned by cultural values and operate in the political sphere.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	
REL	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
REL	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 111 or REL 111
REL	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
REL	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
REL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
REL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	200	Exploring World's Religions	Writing-intensive course introducing analytical skills necessary for understanding religious traditions. Beliefs, practices, and communities of several religious traditions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; maximum 75 hours; Credit is allowed for only REL 100 or REL 200 OR Visiting University Student

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REL	201	Religion and the Modern World	Introduces the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	202	Religion and Popular Culture	Explores various intersecors between religion and the popular media, including music, news, advertising, the visual arts, literature, performance, and film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Credit is allowed for only FMS 202 or REL 202 OR Visiting University Student
REL	203	Saints/Sins-Explore Sacred Bio	Comparison of the role of biography across religions to examine the process of categorizing people as saints or sinners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	205	Life, Sex and Death	Ways that religions have understood birth, sexuality, death, and the passing of generations. Examples from traditions throughout the world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	207	Ritual, Symbol, and Myth	Ritual, symbol, and myth as types of religious expression, with examples selected from the nonliterate religions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
REL	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only HST 211 or JST 211 or REL 211
REL	225	African American Religion	Introduces the history and development of the African American religious tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	
REL	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
REL	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
REL	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
REL	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
REL	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
REL	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
REL	270	Introduction to Christianity	Beliefs, ceremonies, festivals, and institutions of Christianity, emphasizing the contemporary era. Assumes no previous knowledge about Christianity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	282	PreHispanic Native Am Wrldview	Surveys cosmological traditions of indigenous civilizations on the Pre-Columbian American continents	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	287	Topics Film, Media & Religion	Explores specialized topics in the study of film, media and religion. Analyzes how religious values, identities and practices related to various cultural traditions are constructed, communicated and presented through films and media.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only FMS 287 or REL 287
REL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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REL	300	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much as secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions) or PHI 303 or REL 300
REL	301	Comparative Mysticism	Comparative examination of Eastern and Western mystical traditions from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	307	Religion: Theory and Practice	Examines the intellectual history of academic study of religion through various theoretical approaches, major themes, and thinkers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; REL 101 with C or better OR Visiting University Student
REL	310	Western Religious Traditions	Religious traditions of Judaism, Christianity, and Islam, comparing their doctrinal, institutional, and ritual systems and social histories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	311	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
REL	312	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
REL	313	Anti-Semitism in the Media	By examination and discussion of various media, explores the phenomenon of modern anti-Semitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better OR Visiting University Student
REL	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with a C or better; minimum 24 hours; Credit is allowed for only HST 390 or JST 314 or PHI 390 or REL 314
REL	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 315 or REL 315 OR Visiting University Student
REL	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
REL	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375
REL	319	Religion, Violence and America	In-depth study of ways in which religion and violence have shaped American history, culture and identity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 319 or 394 (Religion, Violence & America)

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REL	320	American Religious Traditions	Examines the formation, development, and interaction of major American religious traditions (indigenous, African American, Asian American, and Euro-American).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	321	Religion in America	History of religion in America with attention to issues of historiography, pluralism, gender, race, ethnicity, politics, and social reform.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	323	African American Religion	Examines the experiences, motivations, and contributions of a number of figures associated with African American religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	324	Spirituals and the Blues	Multidisciplinary exploration of the African American religious and musical response to the North American diaspora experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	326	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only TCL 328 or REL 326 or REL 326
REL	330	Native American Worldviews	Presents worldviews through the art, architecture, writing, mythology, ritual and folklore of tribes in Native America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	331	History of Native Am Religions	Explores the role of religion in Native American history, including missionization; adaptation; and prophetic, messianic and religious revitalization movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	338	Daode Jing: Way to the West	At 5,000 words, the Daode Jing [Tao-te ching, "the Scripture of the Way and its Powers," attributed to the Sage Laozi] is perhaps the shortest religious book in the world. It is also the most widely misinterpreted. In China, Daoists, Buddhists and Confucians have each taken its short, pithy statements as warrant for their very different belief systems. In the West, missionaries, new-age pundits, hippies, rock-stars, mystics and LSD advocates each claim to understand the "true meaning" of Laozi's mystical words. But "the farther one travels, the less one knows..." Students read representative samples of these explanations to understand why this brief book of wisdom has endured for over 2000 years. Requires no knowledge of Chinese. Presents all Chinese texts in the translations of the instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338 or REL 338 OR Visiting University Student
REL	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Prerequisite(s): minimum 24 hours; ENG 102, 105, or 108 with C or better; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
REL	344	Religion/Values-Japanese Life	Japanese values expressed in the life and annual cycles of the family, local and national identities, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	345	Asian Religious Traditions	Introduces the major concepts of religious beliefs, rituals, and practices in Hinduism and Buddhism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346
REL	347	Relig of India: Peace&Conflict	In-depth analysis of major Indian religious traditions in historical and contemporary context, with attention to theologies, textual genres, doctrines, rituals, political and cultural expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	348	Religion & Culture in SE Asia	In-depth study of the religious diversity of Southeast Asia including Hinduism, Buddhism, Islam, Christianity, spirit cults and ancestral religions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 294 (Southeast Asia Global Crossroads) or REL 348
REL	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
REL	350	Hinduism	Studies diverse forms of Hinduism through its institutions, literature, folklore, art, and architecture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student

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REL	351	Buddhism	Doctrines, practices, and institutions of the Buddhist religion, emphasizing its role in the history and culture of Asian societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	352	Modern Buddhism	Focuses on modern issues related to Buddhism with special attention to colonialism, nationalism, the development of the nation-state and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 352 or 394 (Modern Buddhism)
REL	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieus. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
REL	355	Japanese Cities/Cultures-1800	Relations among ideas and literary, visual, and performing arts of the ancient aristocracy, medieval samurai, and early modern townspeople.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	356	Buddhism in America	Examines diverse Buddhist traditions in the U.S. among Asian-American communities and converts to this religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	357	Buddhism in S & Southeast Asia	Examines Theravada Buddhist institutions, practices, and communities in ancient and contemporary south and southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	360	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
REL	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
REL	362	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
REL	363	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
REL	364	Islam in Eurasia&Central Asia	Examines the changing role of Islam in Eurasia and Central Asia through history and interprets current transformations in the region.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 364 or 394 (Islam in Eurasia & Central Asia)
REL	365	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student
REL	366	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
REL	369	Women in Islam	Examines the roles women have played through Islamic history (Middle East) and the changing discourse on gender identity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		

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REL	371	New Testament	Origins and literature of early Christian communities; historical investigations of the types of oral and written tradition in the New Testament.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	372	Formation/Christian Tradition	Origins, development, and expansion of Christianity; major themes and tensions from the New Testament world to the beginning of the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	374	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
REL	375	Lost Sctpt Lost Christianities	Wide diversity of early Christianity and its suppressed and lost texts, which have been found in modern times.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	376	Virgin Mary:Hist,Film,&Culture	Introduces formation and development of cult of the Virgin Mary; analyzes transformations of Mariology within historical, cinematic, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; Minimum 24 hours; Credit is allowed for only FMS 376 or REL 376
REL	377	Religion in Russia	Examines the history of the various religious traditions of Russia and the former USSR from an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
REL	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only POS 378, REL 378 or 394 (Religion, War and Peace)
REL	379	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
REL	381	Religion and Moral Issues	Manner in which human religiousness relates to social concerns, e.g., sexuality, the environment, bioethical issues, and violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	382	Magick, Religion and Science	Relationship and conflict among magic, religion and science in the West from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)
REL	385	Contemp Western Rel Thought	Introduces contemporary Jewish and Christian thought. Topics include religion and politics, problem of evil, interpretations of God, and feminist theology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	387	Rel & Confl: Theories & Cases	In-depth study of religion and conflict across multiple traditions and regions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 387 or 394 (Religion and Conflict: Theories and Cases)
REL	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
REL	389	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Erotism)

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REL	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
REL	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391
REL	393	Religion and Sex	Examines what issues are involved in incorporating sexuality into religion and how/why religious traditions seek to control sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	401	Sacred Scriptures&Soc Choices	Examines relationships among contemporary moral issues and the sacred scriptures to support choices at individual, group, and public levels.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
REL	405	Problems in Religious Studies	Selected topics in religious studies; involves students in research interests of instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies major; REL 307 with C or better
REL	406	Religious Studies Capstone I	Develops skills necessary for conducting and presenting in-depth research in the field of religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): Religious Studies major; REL 307 with C or better; senior standing
REL	407	Religious Studies Capstone II	Uses previously developed research to produce original research project in religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	2		Prerequisite(s): REL 406
REL	410	Judaism in Modern Times	Variety of expressions of Judaism and Jewishness in the modern period. Topics may include American Judaism or religious responses to the Holocaust.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
REL	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
REL	420	Religion in Amer Life/Thought	Influence of religion on American society, culture, and ideas; the distinctive character of religion in America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
REL	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
REL	459	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
REL	460	Studies in Islamic Religion	Issues in the interpretation and understanding of Islamic texts, history, society, culture, and rituals. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	
REL	461	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shar'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 480 or REL 461 or SGS 442

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REL	470	Religion in the Middle Ages	Religious aspects of medieval life and thought; variety of forms of dissent, heresy, and reform movements from the 4th to 13th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	471	Reformation/Mod Christianity	Protestant Reformation to contemporary Christian movements; includes factors in the dissolution of the Medieval Christian synthesis, variety of reform movements and reformation patterns, Catholic counter-reform measures, formation of liberal theology, ecumenical movement, and the World Council of Churches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	480	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only REL 480 or SGS 441 OR Visiting University Student
REL	483	Religion and Science	Investigates the correlation between science and religion as an interdisciplinary study from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: Minimum CUM GPA of 2.00
REL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
REL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
REL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		
REL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
REL	501	The Study of Religion I	Explores the historical formation and theoretical foundations of the study of religions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	502	The Study of Religion II	Engages with advanced contemporary studies of religions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives--whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
REL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		

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REL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	603	Teaching World Religions	Seminar designed to prepare participants to teach a course similar to ASU's REL 100.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisites: Phd or Masters student in Religious Studies
REL	620	Theories: Anthropology of Rel	Premised on the study of religion as formations of discourse that are embedded in cultural contexts and histories and involve people, practices and texts. This seminar provides the literacy and competence to critically examine and be conversant in the following areas of emphasis: (1) classical and contemporary theories in the anthropology of religion; including foundational authors such as Marx, Mauss, Durkheim, Weber, Geertz, Sahlins and Tambiah, and contemporary works by Cannella, Kean, Pels, Asad, and others; (2) themes like ritual, time, practice, discourse, memory, material culture and commodification; and (3) the anthropological study of particular religious traditions, e.g., the anthropology of Buddhism, Islam or Christianity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 620 or ASB 691 (AnthoTheories of Religion) or REL 691 (Anthro of Religion) or REL 691 (AnthoTheories of Religion) or REL 691 (Theories in Anthro of Religion)
REL	621	Ethnography Theory and Methods	Ethnographic theory and method approaches to recording and studying lived cultural practice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies MA or PhD student; Credit is allowed for only REL 621 or REL 591 (Ethnography Theory and Method) or REL 691 (Ethnography Theories and Methods)
REL	626	Themes:Anthropology of Rel	Under this rubric, faculty offer seminars on thematic concerns such as: the anthropology of ritual, memory, modernity, post-colonialism, conflict and revolution, hybridity, peacemaking and secularism, semiotics, conversion, iconography, embodiment, material culture. Topics may vary depending on instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 626 or CHI 691 (Buddhism in Chinese Society) or REL 691 (Religion & Colonialism) or REL 691 (Buddhism in Chinese Society)
REL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
REL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
REL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
ROM	101	Elem Romanian Lang & Culture I	First course in a four-semester sequence that teaches Romanian as a foreign language at ASU. Provides the development of basic speaking, listening, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of simple tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in ROM 101 if credit with C or better earned in ROM 102, ROM 201, ROM 202, ROM 313, ROM 314, ROM 411, ROM 412 OR Visiting University Student
ROM	102	Elem Romanian Lang & Cultr II	Advances the development of basic speaking, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 101 with C or better OR Visiting University Student

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ROM	201	Intermed Romanian Lang Ctr I	Third course in a four-semester sequence that teaches Romanian as a second language at ASU. This module is the first part of an intermediate-level course, emphasizing both oral and written communication through the development of speaking, writing, reading and cultural awareness skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 102 with C or better OR Visiting University Student
ROM	202	Intermed Romanian Lang Ctr II	Second part of an intermediate-level course placing emphasis on both oral and written communication through the development of speaking, writing, reading and cultural awareness skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 201 with C or better OR Visiting University Student
ROM	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
ROM	313	Romanian Comp/Conversation	Develops skills in written Romanian and correct oral expression. Must be taken in sequence with ROM 314.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 201 OR Visiting University Student
ROM	314	Romanian Comp/Conversation	Continuation of ROM 313. Develops skills in written Romanian and correct oral expression. Must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisite: ROM 313
ROM	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
ROM	411	Adv Spoken&Written Romanian I	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 101 with C or better; ROM 201 with C or better; ROM 313 with C or better; ROM 314 with C or better OR Visiting University Student
ROM	412	Adv Spoken&Written Romanian II	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s) with C or better: ROM 101; ROM 201; ROM 313; ROM 314; ROM 411
ROM	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voevode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the Wild) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student
ROM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ROM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ROM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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ROM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	101	Elementary Russian I	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Students may not enroll in RUS 101 if credit with C or better earned in RUS 102 or RUS 201 or RUS 202
RUS	102	Elementary Russian II	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): RUS 101 with C or better OR Visiting University Student
RUS	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only RUS 141 or RUS 441 or SLC 141 OR Visiting University Student
RUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	201	Intermediate Russian I	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 102 with C or better OR Visiting University Student
RUS	202	Intermediate Russian II	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 201 with C or better; Credit is allowed for only RUS 202 or RUS 295 OR Visiting University Student
RUS	211	Basic Russian Conversation I	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295 OR Visiting University Student
RUS	212	Basic Russian Conversation II	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295
RUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	295	Russian for Heritage Speakers	Heritage speakers of Russian learn to consciously analyze their passive knowledge of Russian grammar and learn grammatical analysis so that they can master advanced grammatical structures which their native Russian peers use in college-level superior proficiency discourse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Students may not enroll in RUS 295 if credit with C or better earned in RUS 202
RUS	311	Russian Comp & Conv I	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better OR Visiting University Student
RUS	312	Russian Comp & Conv II	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better
RUS	322	Scandals and Scoundrels 19th C	An in-depth study of the Golden Age of Russian literature, including novels of Pushkin, Lermontov, Gogol, Khvoshchinskai, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
RUS	323	Russian Lit and Revolutn 20thC	An in-depth study of 20th-Century Russian prose and poetry by Zinovieva-Annibal, Gorky, Bely, Babel, Mayakovsky, Platonov, Pasternak, Erofeev, Petrushevskaia, and other writers. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Pre-requisites: ENG 102, 105 or 108; Credit is allowed for only RUS or SLC 323
RUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	411	Adv Comp/Conversation I	Improves aural discrimination and self-expression in oral and written skills, emphasizing vocabulary building. Subject materials drawn from current post-Soviet-Russian publications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better OR Visiting University Student
RUS	412	Adv Comp/Conversation II	See RUS 411.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better
RUS	421	Pushkin	Pushkin's poetry, plays, and prose fiction, including Eugene Onegin, The Little Tragedies, Tales of Belkin, Queen of Spades and The Captain's Daughter. Taught in English. Does not satisfy the Liberal Arts and Sciences language requirement for BA degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
RUS	423	Dostoevsky and Tolstoy	An in-depth study of Dostoevsky's and Tolstoy's major works, including "Crime and Punishment", "Brothers Karamazov", and "Ana Karenina". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
RUS	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425

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RUS	430	Russian Short Story	Detailed study of representative works of the Russian short story genre. Includes authors from both Imperial and Soviet Russia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; RUS 312 with C or better OR Visiting University Student
RUS	439	Vladimir Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Prnin (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)
RUS	440	Russian Mass Media	Explores various aspects of modern Russian life through printed mass media, especially Internet media sources, and helps to develop advanced spoken, listening, reading and written skills in Russian. Students work with live television news broadcasts and investigate the most important general sources of electronic information, including electronic newspapers and the main Russian Web sites on a wide range of issues such as culture and the arts, government and politics, business and economics, armed conflicts, and accidents and catastrophes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 211 with C or better; RUS 212 with C or better. Credit is allowed for only RUS 440 or RUS 494 (Russian Mass Media) OR Visiting University Student
RUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
RUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
RUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
RUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
RUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SAO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	196	Study Abroad Office Placeholder	Reserved for undergraduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated by SAO following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 12 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to an ASU Study Abroad Office program is required.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		
SAO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SAO	596	Study Abroad Placeholder	Reserved for graduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 9 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to a Study Abroad program is required.	N	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		
SBS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	200	Intro to Soc & Behavioral Sci	Overview of the social and behavioral sciences, indicating their contributions to society and emphasizing interdisciplinary integration	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
SBS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	300	Careers in Psychology	Professional and academic careers in psychology, with a focus on both career and adult development. Provides opportunities to enhance self-assessment and evaluation strategies for both academic planning and postbaccalaureate professional pursuits while also addressing current issues that affect us at any stage of development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SBS	301	Cultural Diversity	Critical analysis of the complexities of the cultural politics of difference in the contemporary United States. Through interdisciplinary and comparative study, examines a range of theoretical and public/popular cultural discourses about the cultural contributions, experiences, perspectives of, by, and about U.S. residents of diverse racial, ethnic, class, gender, sexual, and transnational origins or identities. Analyzes the social conditions and historical precedents that have shaped current diversity concepts and debates, deepening knowledge and understanding of multiple perspectives on these issues and their relevance to social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	(L or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
SBS	302	Qualitative Methods	Basic methodological issues in the systematic application of qualitative analysis of human social life. Surveys range of qualitative methods used by social and behavioral scientists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	303	Quantitative Methods	Concepts underlying design and implementation of quantitative research methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	304	Social Statistics I	Statistical techniques of the social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	
SBS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)
SBS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339
SBS	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342

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SBS	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SBS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB, POS, SBS or SOC 374
SBS	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SBS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	404	Social Statistics II: Multivar	Analysis of variance, multiple regression, dummy variable regression, path analysis, and related topics. Computer application to problem solving.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	Prerequisite(s): SBS 303 with C or better; SBS 304 with C or better
SBS	447	Citizenship/Nationalism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
SBS	450	Topics in Local/Global	Examines links among social, political, economic changes at local, national, global levels. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SBS	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
SBS	460	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over "global cities" anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
SBS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
SBS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		
SBS	490	Senior Thesis I	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. First part of a six-semester-hour sequence, followed by SBS 491.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	491	Senior Thesis II	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. Second part of a six-semester-hour sequence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): Barrett Honors student

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SBS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SBS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SBS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-3		
SBS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SCM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	300	Global Supply Operations	Explores modern global integrated supply chain management. Covers traditional supply chain topics such as procurement, inventory management, operations, quality management, customer service, performance management and analytics, logistics and transportation. Also discusses issues related to sustainability, humanitarian logistics, ethical business practices and supply chain analytics in the context of evolving supply chains around the world. Students discover how business processes, performance metrics and modern supply chain IT tools aid in the management and growth of effective and efficient supply chains.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prereq(s) w/C or btr: BUS or Non-BUS maj w/min 2.50GPA; ACC 231,232 or 261; CIS 105,236 or CON 251; ECN 221,231 or STP 280; MAT 210,251,265 or 270 OR Engr Mgt maj; CSE 205; IEE 380; MAT 266; Pre/coreq(s): ACC 241,242 or 271 OR Visiting University Student
SCM	303	Honors Global Supply Operation	Provides an overview of supply chain management, specifically for Barrett Honors students. Explains principles and concepts from a managerial perspective and how they are used for decision making. Course topics include supply management, operations management and logistics management as applied to a supply chain system. Discusses planning, forecasting, performance measurement and improvement, and collaboration from the perspective of providing excellent customer service. Current topics of interest include the impact of sustainability, security and globalization on managing today's supply chains with an emphasis on supply chain technology. Class methodology focuses on an open-forum discussion of principles and a detailed analysis of case studies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; Barrett Honors student; ECN 221 or 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271
SCM	314	Analytics for Logistics	Focuses on practical tools and technology for real-world decision making, financial and performance analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	315	Business Decision Models	Covers quantitative tools used to aid decision making in supply chain management. Focuses on analytics using technology and software to include Tableau and Microsoft Excel. Other topics include the use of tools in performance management, project management and supply chain finance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 300 or 303 with C or better OR Visiting University Student
SCM	344	Applied Logistics Management	Presents a synthesis of the principles in global logistics (and supply chain) emphasizing the operation and integration of activities such as transportation, inventory, warehousing, facility location, customer service, packaging and materials handling. Examines applicable technology supporting each activity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre- or corequisite(s): SCM 314 with C or better if completed OR Visiting University Student
SCM	345	Logistics Management	Provides a deep analysis of many logistics services to include: global logistics, customer service and order management, distribution/fulfillment operations, demand and inventory planning and management, network analysis and design, and transportation operations, carrier selection, costing and negotiation. In addition, reviews current logistics technology process support and integration, as well as how emerging technology is changing the future of logistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; Pre- or corequisite(s): SCM 315 with C or better if completed OR Visiting University Student
SCM	354	Procurement of Services	Discusses management of the supply function for logistics-based organizations. Allows students to better understand the nature of procuring a service, contracting that service and establishing appropriate performance metrics. Also focuses on supply chain finance, performance management and analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 300 or 303 with C or better OR Visiting University Student

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SCM	355	Supply Management	Discusses management of the supply function, including organization, procedures, supplier selection, quality, inventory decisions and price determination. Students also review project management and governance, supply chain strategy and change management.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; ENG 101, 105, or 107 with C or better; SCM 300 or 303 with C or better OR Visiting University Student
SCM	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM or SOS 385 OR Visiting University Student
SCM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	432	Control Sys-Supply Chain Mgmt	Covers processes essential to the determination and direction of the flow of resources needed to produce goods and services. Uses Microsoft Excel for supporting analysis. Includes processes, methods, technology and financial impact to forecast, manage inventory, plan needed capacity, determine resources needed for production, determine priority and sequencing of activities, perform master scheduling and material requirements planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 315 with C or better; SCM 345 with C or better; Pre- or corequisite(s): SCM 355 OR Visiting University Student
SCM	440	Quality Management/Measurement	Provides a broad introduction to quality management frameworks and tools, with an emphasis on supply chain and operations management issues. Introduces modern quality management approaches including Total Quality Management, Lean and Six Sigma. Students learn how to define quality for a product or service, develop appropriate measurement systems, and apply statistical and systems thinking to control and improve the underlying processes. Covers quality awards and performance excellence programs and quality management systems such as the ISO 9000 family of standards.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Business (Retail Management) BA or Supply Chain Management BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	445	Advanced Logistics Management	Logistics processes account for approximately 8% of U.S. GDP; therefore, the efficient and effective execution of these processes is critical to supply chain managers in corporations, government entities and nonprofit organizations. Includes an overview of the processes involved to include customer service, performance management, analytics, technology and supply chain strategy. Includes a survey of the institutions and players in the processes, and the analytical tools to evaluate their efficiency and effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 344 with C or better OR Visiting University Student
SCM	455	Research and Negotiation	Supply management ensures an organization has resources (i.e., materials, services, equipment) to deliver on promises to stakeholders. This happens by strategically designing supply systems for categories of spend and creating favorable supply agreements. A real-world class project and a real-time contract negotiation simulation helps students understand (1) the relationship among organizational, supply management and purchase category objectives; (2) frameworks and tools to analyze the supply conditions of a category, specifically spend analysis, market/demand analysis and price/cost analysis; (3) how to develop category strategies to ensure adequate and highest value resource supply into the future; (4) the translation of category strategies into manageable supply contracts; and (5) the requisite skills and processes for planning and executing successful contract negotiations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 355 with C or better OR Visiting University Student
SCM	463	Global Supply Chain Management	With increased globalization and offshore sourcing, global supply chain management is becoming an important issue for many businesses. Like traditional supply chain management, the underlying factors behind the trend are reducing the costs of procurement and decreasing the risks related to purchasing activities. The big difference is that global supply chain management involves a company's worldwide interests and suppliers rather than simply a local or national orientation. Enables students to appreciate the challenges of operating supply chains across international boundaries including how to manage various salient issues including sociocultural, economic, technological and political factors that may shape decisions relating to sourcing and moving goods and services across different geographical boundaries.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	G	Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student

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SCM	479	Supply Chain Strategy	Discusses supply chain strategy at the strategic level and from a systems point of view in an open-forum and detailed analysis of case studies. Students work in teams to investigate and report on key supply chain functions, drivers and metrics within an integrated system to include network design, innovation, technology enablement, customer service, sustainability, coordination and management of the critical areas of the supply chain. Includes additional focus on project management, corporate social responsibility and governance and financial implications.	N		LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; ENG 101, 105, or 107 with C or better; SCM 355 with C or better; SCM 432 with C or better OR Visiting University Student
SCM	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SCM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		RSC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-6		Prerequisite(s): Barrett Honors student
SCM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SCM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): minimum 60 hours OR Visiting University Student
SCM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y		LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-7		
SCM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y		LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-3		
SCM	501	Fund of Ops&Supply Chain Mgmt	This contemporary class explores basic operations and supply chain management topics, including process analysis, managing waiting lines, inventory, quality and general supply chain issues and concepts. Designed for students with limited business experience and without an undergraduate supply chain degree to set a foundation of understanding.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): degree-seeking graduate student
SCM	502	Operations & Supply Chain Mgmt	Explores supply chain management topics including environmental, project and supply chain processes. Additionally, covers processes in the areas of new product introduction development; quality control; TQM (Total Quality Mgt).	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student
SCM	515	Decision Mod-Supply Chain Mgmt	Covers decision modeling approaches for supply chain management such as optimization, simulation and decision analysis. Focuses on technology enablement, performance management and analytics, and strategy change and management. Emphasizes modeling using spreadsheet-oriented approaches. Additionally, focuses on financial spreadsheet analysis and its use in optimization.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student
SCM	516	Descrptv&Predctv Sup Chn Anlyt	Provides a solid foundation and deeper understanding of the use of quantitative modeling tools and techniques to solve problems faced in modern supply chains. Uses Excel workbooks to implement the appropriate quantitative methods, including forecasting demand, capacity planning of a manufacturing line and the line cycle time as it pertains to parts inventory management.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey Business Analytics MS or Global Logistics MS student
SCM	517	Data-Driven Quality Management	Addresses the use of analytics tools and techniques to enhance the ability of quality management approaches to improve processes. Introduces modern quality management approaches including six sigma and design for six sigma. Covers the define, measure, analyze, improve and control (DMAIC) improvement cycle; the core process used to drive six sigma projects. DMAIC refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. Provides an analytics roadmap to help users work through the DMAIC problem-solving process.	N		LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Business Analytics MS student

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SCM	518	Analytical Decision Modeling I	Explains the skills and knowledge necessary for mastery of the use of quantitative modeling tools and techniques to support a variety of business decisions. Also explores deterministic optimization techniques, including linear programming, nonlinear programming, integer programming; network models and a brief introduction to metaheuristics. Covers the use of these models for a variety of common business problems. Practical application of these models uses Excel and standalone software. Also studies how to ensure that these solutions work in a wide variety of situations (what-if analysis).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Business Analytics MS student
SCM	519	Analytical Decision Model II	Addresses the skills and knowledge necessary to model situations where uncertainty is an important factor. Covers models including decision trees, queuing theory, Monte Carlo simulation, discrete event simulation and stochastic optimization. Uses these models for a variety of common business problems and requires implementation of these models using Excel and standalone software. Studies how to ensure that these solutions work in a wide variety of situations (what-if analysis). Describes each of these methods in detail.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): Business Analytics MS student
SCM	520	Strategic Procurement	Applies principles, philosophies and processes of supply management to facilitate the continuous improvement and strategic design of an organization's supply management system on a global basis. Focuses on topics like performance management and analytics, project management and governance and finance. Provides a comprehensive understanding of supply management and its impact on the organization.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student; SCM 502 with C or better
SCM	521	Supply Management/Negotiation	Explores the supply management process of selecting, developing and executing of appropriate sourcing strategies and processes. Covers the importance or driving cost, quality and relationship management, as well as organizational change impacts on supply management of a business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): SCM 520
SCM	532	Supply Chain Cost/Design Issue	Strategic design and development of supply chains. Focus on cost-management tools applied to supply chain design and supplier management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	541	Logistics in the Supply Chain	Covers theories and practices of modern logistics management within a market-driven supply chain. Begins with an outline of reasons why some operations are not efficient, then introduces management tools to improve efficiency and responsiveness followed by application of analytical tools to evaluate the current logistic management practices. Topics include logistics strategy, demand management, distribution and warehouse management, distribution/warehouse design and location decisions, transportation and delivery frequency, reverse logistics, humanitarian logistics and responsive supply chains.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey degree-seeking graduate student
SCM	542	Lgstc, Glob, & Econ Developmnt	Global trade, global networks and the influence those networks have on economic development worldwide. Exposes geographic, economic and sociopolitical perspectives on these issues and invites students to draw conclusions from an increasingly informed perspective.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502 and 541; Co-requisite: SCM 515
SCM	545	Cases in Global Logistics	Capstone experience for students in the MS in Global Logistics program. Synthesizes learnings from previous courses and applies this learning to specific issues that have a major global logistics component.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502, 515, 541 and 542
SCM	551	Operations Planning/Execution	Studies management of the conversion of raw materials to finished goods including scheduling, work-in-process inventory management, and postponement/customization. Students gain a deeper understanding of the integrated supply chain of plan, source, make, deliver and return.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	581	Mgmt of Technology/Innovation	Technology life cycles, technology forecasting, new product development process, innovation teams, innovation best practices.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		
SCM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SCM	587	Project Management	Provides a comprehensive understanding of project management with particular focus on planning, scheduling and control of business processes. Emphasizes understanding team dynamics and risk analysis, as well as program management tools, governance and enabling of technology to drive supply chain processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): W. P. Carey graduate student
SCM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	N	Z3	W. P. Carey School of Business	Department of Supply Chain Management	1		
SCM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCN	201	Discovering Deserts of the SW	Introduces deserts of the Southwest. Explores the Southwest desert flora, fauna and geology with particular focus on the Sonoran Desert. Introduces desert habitats, identification of local animals and plants, ecology and adaptations of desert organisms, desert climates and geographical features and human cultures and impacts. This lab course requires field experiences.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		
SCN	202	Sustainability Sci Lit Global	Introduces relevant science concepts and issues that are essential for sustainability literacy. Includes topics related to water, energy and climate. Grounded in UN's Sustainable Development Goals (SDGs) and linked to the Arizona K-12 and NGSS science standards, introduces foundational science concepts related to and their relationship to grand local and global sustainability challenges. Includes a range of lab and field experiences, emphasizing issues facing Arizona and its surrounding regions as examples.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG & G	
SCN	205	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Credit is allowed for only SCN 205 or SCN 305 or SCN 505 or SCN 294 (Costa Rican Language, Culture, Society) or SCN 294 (Tropical Ecosystems of Costa Rica)
SCN	207	Introduction to Biomimicry	Foundational course that introduces everyone, no matter their discipline or background, to the emerging field of biomimicry. Biomimicry is the practice of looking to nature for strategies to solve human challenges. We are living in a time when scientists and researchers are finding sustainable solutions to solve local and global challenges by looking to nature and imitating how nature solves similar challenges. Get inspired and look at the world through a whole new lens—one inspired by nature!	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		

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SCN	208	Intro to Environmental Studies	Introduces environmental studies and urban environmental practices. Widespread environmental problems such as biodiversity loss, resource depletion and environmental change and degradation are among the most pressing global issues of our day. Identifies and explores some of the pressing questions in the field regarding complex environmental problems and solutions from a global perspective. Explores social science and humanities approaches to environmental issues and addresses environmental practices that foster individual and community well-being, environmental quality in cities and urban sustainability.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG & G	Credit is allowed for only SCN 208 or SCN 294 (The Exploration of Environmental Studies)
SCN	209	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SCN	250	Physical Science by Inquiry	Laboratory-based development of concepts and reasoning skills in the physical sciences. Emphasizes open-ended investigations, dialogues between the instructor and individual students, and small group discussions. Helps students think of physical science as an active process of discovery in which they can participate. Helps preservice teachers understand inquiry and develop inquiry skills. Liberal arts students gain experience in the scientific process. Useful for students who wish to improve their science preparation before taking further science courses. Forms foundation for scientific literacy.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SQ	Credit is allowed for only SCN 250 or 294 (Physical Science by Inquiry)
SCN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SCN	300	Found. of Environ. Ed	Introduces environmental education, including the philosophy, historical development, resource identification, curriculum development, field trips and other activities designed to provide the structure and development of the field of environmental education. Explores the antecedents to the present-day field and connects the field of environmental education to curricular programs that are an outgrowth of perceived and actual need in the field of environmental education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
SCN	301	Ecol & Nat Hist Sonoran Desert	Overview of the plants, animals, and geology of the desert ecosystem based on the Arizona K-12 Science Standards. Provides students with basic knowledge of the Sonoran Desert characteristics and its relationship to the total school curriculum.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG	Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	302	Environmental Education	Ignites questions, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of environmental education, experiential education and place-based education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
SCN	303	Environmental Ed Internship	Provides opportunities to learn more about natural sciences and local history; outdoor education and field trip course facilitation and training; individual and group development; facility care and maintenance including landscaping, gardening and carpentry; and the restoration and maintenance of the grounds and teaching materials. Supports and/or develops education projects and programs as outlined by the locations' Educational Outreach office. Various other tasks include: field trip coordination, development of curriculum and classroom materials, hands-on fieldwork, school outreach, off-site outreach events support, and Outdoor Education event support.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): minimum 45 hours
SCN	304	Sonoran Desert Flora: The Life	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours

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SCN	305	Tropical Ecology:Cultural Exch	To better understand the astonishing diversity of tropical ecosystems. Investigates the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing. Introduces language, culture and society of people and communities in tropical countries of Central and South America. Also examines cultural perspectives and beliefs. Focuses on four areas: (1) background on history and present day society of Central or South America, introductory conversational Spanish for interacting with Central and South Americans; (2) living in Central and South America, community, family and education: visiting families and private and public schools; (3) debriefing and reflecting on Central and South America language and culture and (4) the location of Central and South America countries, the rain forests' impact on the world, climate, cultures and contributions to science.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 305 or SCN 494 (Tropical Ecosystems of Costa Rica)
SCN	307	Lrnng frm Ntre: Biomcry & STEM	Introduces biomimicry, an emerging discipline that seeks to learn from nature to solve human problems. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land around, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 307 or SCN 494 (Learning from Nature: Biomimicry & STEM) OR Visiting University Student
SCN	308	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Provides opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists students in becoming more sensitive to and aware of earth systems and environmental change. Also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	309	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	310	Biodiversity Conserv:Education	The world is in a period of unprecedented environmental change. Examines the causes and consequences of one of the most prominent forms of change in the modern era--changes in biological diversity. Explores the scientific evidence that shows how and why Earth's biological resources are being altered, how these changes impact ecosystems and the benefits various ecosystems provide to society. Describes the social and economic consequences of biodiversity loss and understands current management strategies used to curb changes in our planet's biological resources.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 310 or SCN 294 (Biodiversity Conservation) or SCN 494 (Biodiversity Conservation) OR Visiting University Student
SCN	311	Nature Mindfully	Provides an opportunity for students to do in-depth exploration of the reciprocal relationship between human beings and the natural world. Introduces students to what is currently meant by the term ecopsychology, which studies the relationship between human beings and the natural world through ecological and psychological principles. Participants cultivate the knowledge and skills to integrate mindfulness-based best practices with natural settings. As a species, we came of age with nature, and a need for nature still resides within the architecture of our bodies and minds. Abundant research demonstrates physical and psychological benefits of interacting with nature.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SCN	400	Sustainabl for Sci Teacher	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Seeks sustainable solutions through science, technology and society acting at global and local levels. Covers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions. Focuses on how to teach sustainability concepts in the K-8 classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student

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SCN	401	SustainabilitySci,Tech&Society	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Prepares students to think and engage critically with the world around them. Seeks sustainable solutions through science, technology and society acting at global and local levels. Uncovers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student; minimum junior standing; Credit is allowed for only SCN 400 or SCN 401 or SCN 494 (Sustainability Science, Technology, and Society) OR Visiting University Student
SCN	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
SCN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SCN	501	Ecol & Nat Hist Sonoran Desert	Gives students an opportunity to study the common plants and animals of the southwest Sonoran Desert. Study also includes their distribution, adaptations, behavior and ecology. Also includes the physical geography and geology of the region.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	502	Outdoor Education	Ignites question, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of outdoor, experiential education and place-based education.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	504	Sonoran Desert Flora	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	505	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	507	Lrnng frm Ntre: Biomcry & STEM	Offers an introduction to biomimicry, an emerging discipline that seeks to learn from nature to solve human problem. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	508	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Gives students an opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists in becoming more sensitive to and aware of earth systems and environmental change and also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	509	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SDO	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student

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SDO	501	US Law & Legal Analysis-Master	Introduces the U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete extensive written legal analysis exercises, draft case briefs and complete discussion board posts critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Human Resources and Employment Law, Master of Laws, or Master of Legal Studies student; Credit is allowed for only SDO 501 or SDO 598 (US Law & Legal Analysis-Masters)
SDO	503	Prof Writing and Communication	Communication and writing strategies, techniques and genres for use in professional business environments. Presents techniques for crafting and using appropriate workplace grammar and spelling; written structure for memos, emails, reports and presentations; and communication style in a professional setting. Students practice and refine oral communication and interpersonal business communication skills.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 503 or SDO 598 (Prof Writing & Comm-Mast)
SDO	510	Business Organization: Masters	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies and corporations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Master of Human Resources & Employment Law, Master of Laws, or Master of Legal Studies student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit is allowed for only SDO 510 or SDO 598 (Business Organizations-Mast)
SDO	511	Admin Agencies/Reg: Masters	Begins with an accelerated introduction to federal administrative agencies, the sources and boundaries of their authority, and options for redress for parties aggrieved by administrative actions. Also briefly examines state administrative agencies in the same light.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 511 or SDO 598 (Admin Agencies & Reg-Masters)
SDO	515	Criminal Law: Masters	Reviews and analyzes different principles of the fundamentals of criminal law, including: the principles of punishment, burdens of proof, actus reus (acts and omissions), mens rea (mental states), presumptions, causation, strict liability, defenses and homicide	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 515 or SDO 598 (Criminal Law-Mast)
SDO	516	Criminal Procedure: Masters	Consider the basic principles of criminal procedure and the methods by which the criminal justice system functions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre-or coreq(s):SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 516 or SDO 598 (Criminal Procedure-Masters)
SDO	518	Fund of Contract Law: Masters	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 518 or SDO 598 (Fundamentals of Contract Law-Mast)
SDO	525	Tort Law: Masters	High-level introduction to torts. Covers various types of tort causes of action, their various elements, defenses and factual patterns that fit those specific tort causes of action.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 525 or SDO 598 (Tort Law-Masters)

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SDO	529	US Constitutional Law: Masters	Surveys the law surrounding the allocation of governmental power between federal, state and tribal governments and the distribution of governmental authority within the federal government. It is a pervasive subject in the sense that such constitutional questions can emerge in such disparate areas of legal practice as immigration, corporations and securities, family law, criminal law, banking and insurance. Deals with individual rights protected by the U.S. Constitution. Specific areas include due process, freedom of expression and religion, and equal protection.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598(US Law/Legal Analysis-Masters); Credit allowed for only SDO 529 or SDO 598(US Constitutional Law-Masters)
SDO	531	Employment Law: Masters	Covers employment law topics including testing, privacy, FLSA, benefits, rights to compensation, workplace emotional injuries, termination, and employer risk management strategies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 531 or SDO 598 (Employment Law-Masters)
SDO	535	Negotiation: Masters	Offers a basic introduction to the concepts, instruments, functions and theories of modern negotiation giving students some of the information needed to better understand the dynamics of interpersonal, business and legally related negotiation. Begins with a discussion of negotiations as interpersonal communication. Examines avoiding exploitation in mixed-motive exchanges. Explores distributive bargaining strengths and weaknesses. Examines the use of integrative bargaining techniques and those settings in which they might be best used. Finally, reviews the landscape of legal jurisprudence in order to apply appropriate ideologies and techniques to the complex adaptive system of American business and personal interaction in the shadow of the law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Master); Credit allowed for only SDO 535 or SDO 598 (Negotiation-Master)
SDO	541	HR & Employment Law: Masters	Provides an introduction to the management of human resources, in an overview perspective. Students also gain a general understanding of the fundamentals of human resource management and employment laws and policies, and how they apply to organizations. Topics covered are: compensation and benefits, staffing, training and development, performance appraisals, organizational management, policy and maintaining effective relationships with employees. Exposes students to the dynamics of how the human resource department and the company strategically work together to balance employee morale and return on investment. Initiates a well-rounded learning experience of HRM and the effects on business operations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or 598 (US Law/Legal Analysis-Masters); Credit is allowed for SDO 541 or LAW 598/SDO 598 (HR & Employment Law)
SDO	542	Regulation of Small Businesses	Introduces the wide array of regulations that businesses must navigate, (licensure, taxation, insurance and employment rules as well as other laws and regulations triggered by commerce). Additionally, provides a background into the agencies that create and enforce many of the regulations that impact small business and the legal basis for their ability to do so.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 542 or SDO 598 (Regulation of Small Business)
SDO	543	Business Relationships:Masters	Introduces the legal frameworks that impact how business and individuals work together to achieve business and individual goals. Topics covered include contracts, strategic partnerships, IP licensing arrangements, franchising, and others.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 543 or SDO 598 (Business Relationships)
SDO	544	Evidence: Masters	Focuses on the principles and practices governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 531 or SDO 598 (Evidence-Masters)

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SDO	545	Arbitration: Masters	Focuses upon the law, policy and practices relating to arbitration process, using a third-party neutral to render a decision for disputing parties, as it is utilized in consumer and commercial sectors. The class will focus on the Federal Arbitration Act, important policy implications of arbitration, and issues that organizations and individuals should consider when both contemplating entering an arbitration agreement and participating in an arbitration process.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 545 or SDO 598 (Arbitration-Masters)
SDO	546	Mediation: Masters	Studies the process in which a trained neutral third party assists others in resolving a dispute or planning a transaction. Trains students in basic mediation skills through readings, lectures, video demonstrations and simulations, and discussions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 546 or SDO 598 (Mediation-Masters)
SDO	547	Land Use Regulation: Masters	Surveys modern land use planning with an emphasis on the legal framework used to resolve conflicting land uses	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 547 or SDO 598 (Land Use Regulation-Masters)
SDO	548	Water Law: Masters	Provides an introductory survey of the fundamental concepts underlying water law, as well as the necessary legal foundation for understanding sustainable water policy and management.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 548 or SDO 598 (Water Law-Masters)
SDO	549	Family Law: Masters	Primarily focuses on the law of marriage and divorce including the law governing entry into marriage, the legal consequences of being married, and the dissolution of the marital status. Topics include: the law of marriage, child custody, child support, alimony, division of property, the rights and obligations of unmarried cohabitants, and the establishment of paternity rights and obligations. In addition, touches upon issues of domestic violence, child abuse and neglect and assisted reproductive technologies. Relevant Arizona Statutes are referred to throughout the course where appropriate as examples, but the course is not limited to Arizona law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 549 or SDO 598 (Family Law-Masters)
SDO	551	Duties, Obligation and Rights	Examines the fundamental employee rights and employer obligations established by federal law and encompasses an examination of the National Labor Relations Act; the Worker Adjustment and Retraining Notification Act; the Equal Pay Act; the Occupational Safety and Health Administration; Worker's Compensation; the Family Medical Leave Act; the Pregnancy Discrimination Act; and the Genetic Information Nondiscrimination Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stndt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 551 or SDO 598 (Duties, Oblig & Rts in Wplc-Mstrs)
SDO	552	Employ Discrimination: Masters	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stndt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 552 or SDO 598 (Empl Discrimination - Mstrs)
SDO	555	Pro Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry at the professional level, from both a legal and a business perspective. Exposes students to professional sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stndt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 555 or SDO 598 (Prof Sports Law - Mstrs)

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SDO	556	Sports Analytics: Masters	Allows students to develop and apply analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 556 or SDO 598 (Sports Analytics - Mstrs)
SDO	557	Sport Business Strategy:Master	Explores the sports business ecosystem and the various stakeholders who play a role in sports business. Beyond stakeholders, the course discusses the various applications within sports business from marketing to venues.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs);Credit is allowed for only SDO 557 or SDO 598 (Sports Business Strategy-Mstrs)
SDO	558	Copyright Law: Masters	Includes topics such as copyright bundle of rights, registration, remedies, fair use, work made for hire contracts, licensing and assignments.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 558 or SDO 598 (Copyright Law - Masters)
SDO	559	Trademark Law: Masters	Trademark law is indisputably the most fun area of the law. This course covers, from a practical perspective, the basis and use of the trademark system; the requirements for, process of obtaining, opposing and enforcing trademarks and related rights; and the overlapping federal, state and common law rights and doctrines involved in trademark and unfair competition law including cybersquatting, false advertising and the right of publicity.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 559 or SDO 598 (TM & Unfair Competition Law-Mstrs)
SDO	566	Adv Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry, at all levels. Exposes students to professional, amateur and international sports law issues, examining those issues in a problem-focused manner. A variety of industry professionals give the lectures, and each section focuses on a specific topic within the realm of sports. The requirements of the course are designed to challenge the students.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Stds MLS, or Legal Stds (PatentPrac) MLS stdt; SDO 598 (SprtsLaw-Mstr); Pre- or coreq(s):SDO 501 or SDO 598 (US Law/Legal Anlyns-Mstr); Credit allowed for only SDO 559 or LAW 598/SDO 598 (AdvTopics SprtsLaw)
SDO	567	Adv Criminal Law: Masters	Considers principles of criminal procedure with analytical emphasis on the right to counsel during trial, appellate and post-conviction proceedings. Also examines developments in the criminal justice system derived from the study of wrongful convictions during the Innocence Era. Students read portions of a summary treatise relevant to specific subject areas of criminal law and procedure, case law, law review articles, periodicals and case materials.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Stud MLS, or Legal Stud (Patent Prac) MLS std; SDO 515 or 598 (Crim Law-Mstrs); Pre- or coreq(s): SDO 501 or 598 (US Law/Legal Anly-Mstrs); Credit is allowed for SDO 567 or 598 (Adv. Top in Crim Law-Mstrs)
SDO	568	Leg Princ/Bus Pract: Masters	Survey course covers various substantive topics with a focus on applying the basic legal principles covered via court decisions and other reading assignments. Requires a basic understanding of "black letter law," but this is not a course that asks MLS students to provide the same level of nuanced legal analysis as would be asked of law students. Instead, merging business acumen and legal analysis is valued above a depth of legal understanding.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 568 or SDO 598 (Integ Leg Pp & Busi Pract-Mstrs)
SDO	569	Adv HR & Employment Law:Master	Covers the laws that govern the rights and duties between employers and employees. Goes beyond knowledge of the law and focuses on the application of the legal knowledge to scenarios HR professionals encounter in both the private and public sector.	N		LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; SDO 552 or 598 (Empl Law); Pre- or coreq(s): SDO 501 or 598 (US Law/Lgl Anly); Credit is allowed for only SDO 569 or SDO 598 (Adv Top in HR & Emp Law)
SDO	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student

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SDO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SDO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	685	MHREL Capstone	Develops a perspective on how the law interacts and impacts the human resources industry. Understanding and applying solutions for rapidly changing legal requirements related to employment is an essential part of business success. Analyzing the current HR legal environment to understand and plan for risk, opportunities and requirements is the starting point for creating a compliant and effective HR system. Students evaluate the impact of legal changes within Arizona, the United States and internationally, placing emphasis on ethical decision making. Students learn how to successfully navigate legal changes within the employment realm and manage relationships with employee groups.	N	PRA	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Human Resources and Employment Law MHREL student; Pre- or corequisite(s): SDO 501
SDO	701	Contract Review/Structure: Mast	Helps students learn how to work with contracts by exploring the general parts of a contract, the purposes of contracts, and reviewing contracts with an eye on supporting business interests. Although students learn some drafting techniques, the focus of the course is not on drafting entire contracts from scratch. Rather, students learn how to review contracts within a specific framework and recognize how contract language affects a party's legal rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Human Resources and Employment Law MHREL student; SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); LAW 515 or SDO 518; Credit is allowed for only SDO 701 or SDO 598 (Contract Review & Structure for Prof - Masters)
SEC	501	Solar Engr Commercialization I	Examines the fundamentals of the solar energy enterprise regarded from a systems engineering perspective. Examines solar energy technology, economic issues and policy matters and reviews the impact of these three areas on the design process and system operation of photovoltaic systems at the residential and commercial scales. Objectives include learning the basic principles in photovoltaic system design; thinking critically and seriously about the nature of solar energy and its use; formulating views and insights regarding energy resources, conservation, photovoltaic economics, government subsidies; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter, Transport & Energy	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SEC 501 or SEC 598 (PV Systems Engineering)

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SEC	502	Solar Engr CommercializationII	Examines the fundamentals of the solar energy enterprise at the utility scale--the components, the design process, the economic issues, and the policy matters in large-scale photovoltaic systems--in both the design of these systems (both central plant and aggregated forms) and their interface with the existing (and future) electrical grid. The course educational Objectives include: learning the principles in utility-scale photovoltaic system design; thinking critically and seriously about the interaction of photovoltaic systems with the national grid; formulating views and insights regarding energy resources, conservation, economics, government incentives, and so on, at the utility scale; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): SEC 501; Credit is allowed for only SEC 502 or SEC 598 (Solar Commercialization)
SEC	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
SEC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	588	Solar Energy Colloquium	Discussion-oriented class focusing on topical issues in solar energy. Knowledge of thermodynamics or electric power systems is recommended to succeed in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 588 or SEC 588
SEC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	YGB	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		
SED	111	Exploration Science Teaching	General overview of the profession of the science educator with a look at student, teachers, curricula, and classroom techniques.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SED	322	Classroom Leadership/Sec Schls	Theories and practices for managing and maintaining secondary classrooms for learning; strategies for home/school communication; and leadership roles for teachers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
SED	396	Clinical Experience I	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	397	Clinical Experience II	Applies course content in a middle/secondary school setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-1		Prerequisite(s): admission to the Professional Program

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SED	398	Clinical Experience	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
SED	403	SED PrinciplesCurriculumMethod	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in the secondary school. Requires observation/participation.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; minimum junior standing
SED	464	Middle-School Curr/Org	Educational implications of the characteristics of a diverse adolescent population on middle-level organization and components, curriculum, instructional strategies, assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	478	Student Teaching: SED 6-12	Student teaching in middle/secondary setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
SED	480	Spec Mthds Teaching Soc Studie	Interdisciplinary approaches; production and collection of materials.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	481	English Teach Methods/Sec Schl	Instructional, organizational, and presentation methods for English in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	482	Science Teaching Methods	Methods of instruction, organization, and assessment of science for secondary and middle grade schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SED	496	Clinical Experience III	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	501	Intro to Effective Instruction	Introductory course for certification program in secondary education. Emphasizes developing basic classroom management, instruction, and evaluation. Includes a field assignment of at least 120 hours.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	510	General Methods & Assessment	Provides an overview and application of teaching methods, unit planning, and research for secondary teachers.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	4		Prerequisite(s): SED 511, 512, 513 or 514
SED	511	ELA Methods and Assessment	Methods in design, instruction and assessment of English Language Arts (ELA) for secondary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	512	Sec Math Methods & Assessments	Mathematical knowledge for learning, teaching and assessment in grades 7 through 12. Focuses on methods for developing conceptual understanding of mathematics concepts through inductive, inquiry-based, problem-centered learning and teaching. Emphasizes concept development through visualization using concrete, digital and real-world representations; purposeful questions; and generalization of patterns. Focuses on theories of mathematics learning; design of learning sequences concrete-to-pictorial-to-abstract; visible thinking routines; teaching rehearsals; brain science messages for mathematics learning; and practices for creating equitable mathematics learning environments and students' positive growth mindset.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	513	Sci Tchng Methods For Sec Sch	Focuses on inquiry-based processes, lesson design, teaching methods and content overview to support science instruction in secondary and middle grades.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	514	Methods Teaching Sec Soc Sci	Methods in design, instruction and assessment of the social studies subjects for secondary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	4		Prerequisite(s): degree- or nondegree seeking graduate student; admission to the secondary teacher preparation professional program
SED	520	Sci Mthds Early Adolescence	Examines the interrelationships between theory and practice in teaching science.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	522	Second Schl Curriculum Develop	Social processes, issues, principles, patterns, and procedures in curriculum development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
SED	533	Mid/Sec Instr, Mgmt & Assess	Analyses of procedures, methods, techniques, and experiments in teaching in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Must be a graduate student
SED	544	Creating Classroom Climates	Emphasizes classroom management and instructional strategies for establishing positive classroom climates that facilitate learning. Includes field experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	547	Teaching Math-Middle Grades	Strategies and methodologies to teach mathematics in the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	557	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556

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SED	560	Teaching Math with Technology	Strategies and methodologies to teach mathematics with technology, focusing mainly on the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	561	Teaching Sci with Technology	Strategies and methodologies for effective technology-enhanced science classrooms and improved learning. Models student-driven inquiry teaching throughout the course.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	567	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
SED	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
SED	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
SED	576	Professional Experience III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
SED	578	Residency/Student Teaching SED	Student teaching in a secondary (SED) school classroom. Synthesized experience in curriculum, instruction, and classroom management. This course builds upon previous professional experiences to extend learning in a classroom setting and to obtain practice and feedback to continuously improve educator knowledge and skills.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
SED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
SER	101	Programming for IFT	Introduces problem solving with a state-of-the-art programming language. Expressions, statements, basic control flow and methods. Data, data aggregation and usage. Uses a structured personal software development process to implement solutions representative of common computing applications. Students create several small programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		
SER	215	Software Enterprise: Pers Proc	Software engineering; personal software processes for individual professionalism; time and defect estimation, yield, and productivity. Software tools. Project based.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better
SER	216	Software Enterpr:PersProc&Qual	Introduces software engineering, software lifecycle models, personal software processes for individual professionalism, time and defect estimation, yield and productivity, software testing and quality management.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Pre- or corequisite(s): SER 222 with C or better if completed OR Visiting University Student
SER	221	Pgmming Lang & Their Exec Envnt	Introduces the fundamental programming language concepts of data, type, control, abstraction, and structure; software development and execution environments; programming language paradigms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better; Credit is allowed for only CST 220 or SER 221
SER	222	Dsgn & Analy: Data Strs & Algo	Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; MAT 243 or 300 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Master of Computer Science student OR Visiting University Student

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SER	232	Computer Systems Fundamentals	Logic design, number systems and arithmetic, Boolean algebra, digital systems components and hardware description languages.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	CS	Pre- or corequisite(s): SER 100 or CSE 110; MAT 117, 170, 171, 210, 251, 265, or 270 with C or better if completed or ALEKS score of 61 or higher; Credit is allowed for only CST 150 or SER 232 OR Visiting University Student
SER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	315	Software Enterprise: Dsgn&Proc	Software process from the design perspective. Engineering design process, user-centered design and software safety design. User interface, software architecture and design patterns and software design constraints.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 222 with C or better; Pre- or corequisite(s): FSE 100 with C or better if completed; SER 216 with C or better if completed OR Visiting University Student
SER	316	Software Enterprise: Cnstrct	Best practices in software construction in the context of a team project, including refactoring, defensive programming, unit testing, and configuration and release management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 216 with C or better; SER 222 with C or better OR Visiting University Student
SER	321	Software Systems	Design and implementation of distributed software components; process and memory management underlying software applications; sockets, protocols, threads, XML, serialization, reflection, security, and events.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Pre- or corequisite(s): SER 334 with C or better if completed; Credit is allowed for only CST 420 or SER 321 OR Visiting University Student
SER	322	Database Management	Fundamental methods in modeling and managing data-oriented systems. Relational, object, and hierarchical data modeling techniques. Query languages including SQL. Semantics of transaction processing. Database system architectures including cloud-based, client-server, and embedded databases. Security and privacy issues. Modern trends in data management including managing data on the cloud, unstructured data type management, data mining, and business analytics, and NoSQL data management platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student
SER	332	Intro Graphics & Game Devel	Foundations of graphics as used in modern rendering and basic principles of the game development pipeline. Graphics and math concepts and their application in games, graphics and visualization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better
SER	334	Operating Systems&System Prog	Fundamentals of operating systems: run-time environments, process management, scheduling, synchronization techniques, memory management and file management. Introduces programming concepts and tools for developing operating system modules, system utilities and low-level applications in POSIX environments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 with C or better; Pre- or corequisite(s): SER 222 with C or better if completed OR Software Engineering MS or Master of Computer Science student OR Visiting University Student
SER	335	Engin Secure Software Systems	Software engineering principles applied to securing software systems. Software life cycle processes contextualized to security needs of software. Software requirements analysis and software verification and validation practices for security. Software architecture security assessment. Software engineering organization policies for security, including threat modeling and assessment, vulnerability classification, risk management, and preparing for security audits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 216 with C or better; Corequisite(s): SER 315; SER 334
SER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	401	Computing Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better; senior standing or postbaccalaureate
SER	402	Computing Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 401 with C or better
SER	415	Software Enterprise: Inception	Third course in the four-course enterprise sequence. Students perform inception (project launch) and elaboration (requirements analysis) activities in project teams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	L	Prerequisite(s): Software Engineering BS major; ENG 101, 105 OR 107 with C or better; SER 315 with C or better OR Visiting University Student
SER	416	Software Enterprise: Proj&Proc	Project-centric course focusing on applying software process, project management, and technical leadership. Final course in the software enterprise sequence.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better

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SER	421	Web-Based Applications	Distributed Web applications, their design, architecture and supporting technologies; user-interaction concepts and technologies; design and implementation of software servers for Web systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	422	Web Application Programming	Design and implementation of Web application. Languages, frameworks, technologies, tools and methods used to realize Web client and server solutions. Approaches for securing, testing as well as determining the quality and reliability of Web applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): IFT 433 or SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	423	Mobile Systems	Mobile applications, their architecture, design, and supporting technologies; mobile device operating systems and frameworks; synchronizing mobile applications, support for inter-application data-exchange; accessing and manipulating special-purpose device capability such as location, orientation and input modality. Practices for securing mobile runtimes and optimizing run-time performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Visiting University Student
SER	431	Advanced Graphics	Topics in real-time rendering and graphics hardware. Uses graphics processing unit hardware to implement rendering of higher-order surfaces and special effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	432	Game Engine Architecture	Functional requirements of a modern game engine architecture. Students work in teams to develop advanced features for a game engine.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	450	Computer Architecture	Price/performance analysis, instruction set design, RISC/CISC, processor design and implementation, pipelining, instruction-level parallelism, memory hierarchy, storage and I/O systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 or SER 250 with C or better OR Software Engineering graduate student
SER	456	Embedded Infr.Snsrs&Actuators	Electromechanical sensors and electrical actuators, analog-to-digital and digital-to-analog conversion, hardware and software interfaces for embedded systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; SER 232 with C or better OR Software Engineering MS student; Credit is allowed for only SER 456 or CST 598 (Embedded Interfaces: Sensors and Actuators) OR Visiting University Student
SER	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stdnt; Credit allowed for CSE 460/SER 460 OR Visiting University Student
SER	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Cltr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grad st; Crdt only CSE 463 or SER 463 OR Visiting University Student
SER	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/ C or better: Comp Sci or Comp Sys Engr mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stdnt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsm&Tstng) or SER 464 OR Visiting University Student
SER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		
SER	486	Embedded C Programming	Programming concepts for embedded systems. Interfacing and controlling LED, LCD, keypads, buttons. Embedded OS concepts. Timers and interrupts. Serial communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6		Prerequisite(s): Barrett Honors student
SER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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SER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): SER 334 with C or better OR Visiting University Student
SER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-3		
SER	501	Adv Data Struct and Algorithms	Advanced algorithms and how they are effectively applied to solve problems. Algorithm design, analysis, classification, optimization, and application. Practice implementing and employing algorithms to solve realistic problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	502	Languages and Prog Paradigms	Emerging programming languages, their design, description, implementation, and advanced features; API design, including facilities for creating secure distributed applications, facilities supporting software services, naming and composition; language paradigms and the resulting implications on execution; run-time systems and storage management; approaches to compilation and execution. Requires ability to program in an object-oriented programming language and knowledge of data structures, algorithms, and analysis.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	515	Foundations of Software Engin	Software engineering overview, with an emphasis on component and service-based architectures, reliability, safety, dependability and software reuse. Introduces software engineering research methods and critical inquiry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS graduate student
SER	516	Software Agility	Focuses on quality software construction principles in an agile community context. Agile methods, open source communities, coding best practices, configuration management, software delivery and building in quality.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student
SER	517	Software Factory Capstone	One-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student
SER	518	Software Factory II	Second in a two-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, and Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 517
SER	531	Semantic Web Engineering	State-of-the-art semantics-based approaches and tools that can be leveraged to enrich and enhance today's big data. Covers approaches to ontology engineering, searching and filtering relevant information, representing big data, modern applications of these methods and techniques for Web-based intelligent applications and services. Discusses applications of semantic technology that could improve the processing of big data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only SER 594 (Semantic Web) or CST 594 (Semantic Web) or SER 531
SER	533	Database-Centric Enter App Dev	Solutions for enterprise software systems based on relational database technology. Persistence solutions in middleware frameworks, O/R, XML, and scalability issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	540	Internet-Enabled Embedded Dev	Accessing hardware devices through Internet, including Applets, HTTP, custom byte streams, XML-RPC, SOAP. Building network-based applications that interface hardware.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	554	Distributed Computing	Topics in distributed systems, including communications, distributed operating systems, fault-tolerance, and performance issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	574	Adv Software Design	Presents some of the latest advancements in the area of software design and architecture, aiming to help students develop analytical thinking skills which are essential to a successful career in software engineering. Modeling has become the primary communication vehicle in many areas of software engineering, and particularly in the intersection of software and systems engineering. Presents different approaches to software modeling and design for applications in systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student; SER 515 with C or better; Credit is allowed for only SER 574 or SER 594 (Advanced Software Design)

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SER	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		REC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y		LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
SER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Software Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	100	Introduction to Exploration	Science and engineering of Earth, solar system, and space exploration. Experimental design, engineering design; teaming; the professions of science and engineering.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): ALEKS score of 61 or higher or Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
SES	106	Habitable Worlds	Are we alone in the Universe? If so, why? If not, where are our cosmic cousins? Such questions, once the domain of science fiction, are on the verge of being answered with science facts. Astronomers are discovering planets around other stars. Planetary scientists are exploring the worlds in our solar system. Biologists are unlocking the secrets of metabolism and evolution. Geoscientists are determining how the Earth supports life. And as we struggle to build a sustainable future for ourselves, all of us are finding out how technologically advanced civilizations rise and how they might fall. This course surveys these topics. In the process, students master basic concepts from across the major areas of science and learn what makes the Earth a habitable world.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
SES	107	Journey Through Solar System	Introduces modern planetary science—the exploration of our solar system by astronomers, geologists, chemists, physicists, engineers, astronauts and even biologists. Studies the historical and modern science of the Sun, planets, moons, rings, asteroids and comets in our solar system, and about new planets being found in other solar systems. Covers the scientific method as well as the specific techniques used in modern planetary science and space exploration that enable us to apply what we learn about our solar system neighbors to the study of our home planet, and vice versa.	N		LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SG	Credit is allowed only for SES 107 or SES 194 (A Solar System Journey)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SES	121	Earth, Solar System & Universe	The Earth, solar system and universe are diverse and dynamic, featuring galaxies, solar systems, suns, planets and moons. Each type of feature is characterized by a suite of processes and features, such as volcanoes, landslides and climate. As scientists and engineers, we want to understand what is going on in our world. Understanding past events helps begin to predict future events. With the Earth, we examine past events and current natural processes to understand how this past and these processes affect humans. Accordingly, this course examines the processes, materials and features observed and inferred on the Earth, in the Solar System, and in the Universe. The course is purposely designed to be rather holistic, exploring concepts from stellar evolution, atmosphere and oceans on Earth and in extraterrestrial objects, plate tectonics, volcanoes and mountain building. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	
SES	122	History of Earth&Solar System	The Earth and solar system have a long and interesting history, spanning nearly five billion years. Earth and other objects in the solar system have evolved over time, punctuated by a series of events, such as mountain building, volcanic eruptions, impacts and extinctions. As scientists and engineers, we want to understand what events have occurred in our world and which aspects directly affect us or are most interesting. Understanding past events helps us comprehend what has happened and begin to predict future events. With the Earth, examines past events and current natural processes to understand how this past and these processes affect humans. Accordingly, examines the history of the Earth and solar system in the context of the processes, materials and features that can be observed and inferred. Explores the history of the Earth and solar system from a broad, interdisciplinary, perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	123	Earth,Solar Sys & Universe Lab	Studies astronomical and geological processes through observations and measurements. Requires field trips and evening telescopic observing. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Pre- or corequisite(s): SES 121 with C or better if completed OR Visiting University Student
SES	124	History Earth&Solar System Lab	Studies astronomical and geological processes and life through observations and measurements. Requires field trips and evening telescopic observing.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 122 with C or better if completed
SES	126	Exploration of the Universe	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. Don't be surprised if class includes stories about how ASU research is proceeding, or how a lesson in class is relevant to some research experience. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
SES	128	Expl of the Universe Lab	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 126 with C or better if completed
SES	141	Energy in Everyday Life	Energy permeates our everyday life and is at the heart of understanding how the world around us works. What is energy? How is energy used in the biological, chemical, electrical and mechanical systems that impact our daily lives? What would our world be like if there was a nearly infinite supply of inexpensive energy? This multidisciplinary survey course offers learners the opportunity to master practical job skills: the ability to observe, gather data, and think critically to make order-of-magnitude estimates.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only SES 141 or SES 194 (Energy in Everyday Life) OR Visiting University Student

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SES	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
SES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	220	Biology of a Changing Earth	Offers a broad survey of basic biological principles, with an emphasis on aspects of biology that are particularly important in the context of interdisciplinary Earth and environmental sciences. Explores how life on Earth has emerged and diversified and how the ubiquity of this life affects the Earth's chemistry, land surface and climate. As many of our current environmental issues are a direct consequence of human impacts on organismal physiology, biodiversity patterns, or ecosystem processes, strongly focuses on application of biological knowledge. Includes weekly laboratory exercises.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	225	Global Biogeochemical Cycles	Exposes students to the coupled biogeochemical cycles that link Earth's biosphere, hydrosphere, atmosphere and lithosphere. These cycles operate at the very long time-scales that stabilize Earth's climate and the very short time-scales that support the biosphere. Explores processes and changes through time and the human influence on these systems. Topics include: the rock cycle and the hydrologic cycle; biogeochemical systems; carbon, nutrient and oxygen cycles; global climate change; human forcing on the ecosphere; and future climate scenarios. Strongly emphasizes developing an understanding of the complex interactions among different systems and processes. Specific student interests inform some of the topics covered, and participation in the discussions and analyses are crucial to the success of this class. Develops understanding through readings, class discussion, in-class problem solving, written projects and student presentations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): CHM 101, 113, or 114 with C or better if completed
SES	230	Coding for Exploration	A series of lectures and computer labs on data processing and analysis in Earth and space sciences using Python. Introduces programming with scratch and python. Numerical methods for data analytics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): AST 111 or GLG 101 or SES 121 with C or better; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
SES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	307	SpaceWorks I: Dsgn Mdl Bld Tst	Provides an introduction to: (1) project design and fabrication, including the application of SolidWorks, training and use of the ASU Student Machine Shop, and the implementation of a project from prototype through completion within a dedicated maker space; (2) analytical modeling and its application to planetary exploration; (3) space mission design and implementation; and (4) leadership training, including project organization, schedules, budgets and proposal writing. A key element includes interacting with and learning from engineers and scientists working on space projects.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre- or corequisite(s): MAT 265 or 270 with C or better if completed; Credit is allowed for only SES 307 or SES 394 (ASU SpaceWorks Project Level 1:Applied Design....) OR Visiting University Student
SES	311	Essentials of Astrobiology	Origin and evolution of life on Earth. Strategies to explore for life in the cosmos. Possible field trips to explore regional geological analogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 181 (188), CHM 113 or PHY 121; MAT 265 or 270
SES	330	Electronics Instrumentation	Applied principles of electronics and mechanical design as used by the modern instrument builder, using a systematic approach to the design process: Identify a scientific problem, develop specifications necessary to solve the problem, develop a prototype solution, test solution for plausibility, break down problem into components, design and build the solution then test in a relevant environment. Builds on introduction to circuits and engineering concepts from prerequisite courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4		Prerequisite(s): EEE 202 with C or better; MAE 201 or 212 with C or better; PHY 131 and 132 with C or better (or PHY 151 with C or better) OR Visiting University Student

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SES	350	Eng Syst & Exper Problem Solv	Introduces integration of scientific and engineering computational methods into scientific research and successful exploration. Provides an active, project-based environment for learning science and engineering by means of a common set of computational tools. Also provides a detailed overview of procedural and object-oriented programming with an emphasis on problem solving. Students solve problems by developing software in an interpreted language (Python). Problems may include visualizing data, interfacing with hardware, or solving numeric problems. Covers procedural programming concepts including data types, variables, control structures, arrays, and data I/O. Covers object-oriented programming concepts including object creation and use, object interaction, and the design of simple classes. Covers software engineering concepts including testing, incremental development, understanding requirements, and teamwork.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 267, 272, or 275 with C or better; PHY 131; PHY 132 (OR PHY 151) with C or better OR Visiting University Student
SES	376	Comm Astro & Planet Sci I	Develops science communication writing skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces the characteristics of written science communication and public engagement within the context of astronomical and planetary sciences to include investigations into the ethics of science communication. Students gain proficiencies in science communication writing, visual data production and various digital technologies through relevant, project-based assignments, digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student
SES	377	Comm Astro & Planet Sci II	Develops science communication oral skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces a variety of techniques for producing and presenting effective oral science presentations within the context of astronomy and planetary sciences. Students gain proficiencies in public speaking, visual data production and various digital technologies through relevant, project-based assignments, including digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better; SES 376 with C or better OR Visiting University Student
SES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	401	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. Also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SES	405	Explo Systems Engineering	Provides an introduction to systems engineering with an emphasis on the following topics: the systems engineering process, requirements, design fundamentals, subsystem fundamentals, trade studies, integration, technical reviews, case studies and ethics. Prepares the student for the capstone spacecraft/mission design course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
SES	407	Space Works II: Mdl Fabr & Tst	Provides students with: (1) experience in complex project design and fabrication, including the application of NX software for thermal and structural modeling, use of the ASU Student Machine Shop, and the testing of a team project within space-like conditions; (2) training in clean room protocol; (3) electrostatic discharge training; and (4) preparation of a Preliminary Design Review document which includes a team presentation. A key element includes interacting with and learning from engineers and scientists working on space projects.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 307 completed two times with C or better; Credit is allowed for only SES 407 or SES 494 (ASU SpaceWorks Project Level 2-Model, Fab, Test)
SES	410	Senior Exploration Project I	Design and development of an Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107; minimum senior standing OR Visiting University Student
SES	411	Senior Exploration Project II	Continuation of SES 410. Development of Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisites: ENG 101, ENG 105 or ENG 107; SES 410

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SES	480	Teaching Earth & Space Science	Provides a practical review and active exploration of educational research and theory, published and online resources, and best practices, to inform effective teaching of the Earth and space sciences at the high school and undergraduate levels.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; AST 111, AST 112, GLG 101, GLG 102, GLG 108, GLG 110, SES 106, SES 121, or SES 122 with C or better; Credit is allowed for only SES 480 or SES 494/GLG 490 (Teaching Earth and Space Science)
SES	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): minimum 45 hours
SES	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
SES	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		Prerequisite(s): minimum 45 hours
SES	501	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. It also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 500 or SES 501
SES	502	Exploring SESE Research	Weekly series of talks by faculty in the School of Earth and Space Exploration (SESE) about their current research.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 591 (Faculty Research Seminar) or SES 502
SES	510	Grad Exploration Project I	Design and development of an Earth, solar system or space exploration project. Conceptualization, design, development, deployment, data analysis, communication. First part of a year-long project for the development and testing of experiments and instruments for scientific exploration. Expects students to define the mission and develop an experiment while applying realistic science-based goals and constraints to their design work.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Exploration Systems Design MS student; minimum 9 hours of CEN, EEE, IEE, or MAE graduate courses with C or better; minimum 6 hours of AST, GLG, or SES graduate courses with C or better
SES	511	Grad Exploration Project II	Development of Earth, solar system or space exploration project. Conceptualization, design, development, deployment, data analysis, communication. Second of a year-long project for the development and testing of experiments and instruments for scientific exploration. Expects students to define the mission and develop an experiment while applying realistic science-based goals and constraints to their design work.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Exploration Systems Design MS student; SES 510 with B or better
SES	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
SES	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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SES	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SFS	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SFS	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SFS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SFS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SFS	560	Tools and Tactics	Reviews competing theories, models and analytical frameworks for understanding the policy-making process. Provides advanced knowledge of the tools and strategies necessary to achieve food policy reform.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 561
SFS	561	Food and Farm Immersion	Exposes students to farmers, ranchers and supply chain businesses that are the focus of, or are otherwise directly impacted by, food and agriculture policies and programs.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 560
SFS	562	Managing Resources Food Proc	Highlights the relevance of natural resource conservation for ensuring healthy agricultural, food and environmental systems, as well as the various approaches to achieving sustainable systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SFS 560; Corequisite(s): SFS 563
SFS	563	Applied Food Policy Immersion	Intensive seminar on leadership reviews leadership theories, builds leadership skills, and engages students in question-and-answer sessions with food policy leaders from a variety of sectors on the ASU campus and across Metro-DC.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; Corequisite(s): SFS 562

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SFS	564	American Agr in Global Context	American agriculture both impacts, and is impacted by, the production and demands of other countries. Considers global food trends, global food policy governance regimes and institutions, and explores current controversies.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; SFS 562
SFS	565	Organizational Leadership	Culminating research-based class organizes students into small teams and chooses a topic from a list of contemporary policy controversies provided by the professor. Class work requires original research, creation of policy solutions, and development of strategies to achieve proposed solutions. Each team produces a professional report to be broadly shared with sustainable food system advocates. The professional report is expected to advance food policy knowledge generally and provide certificate graduates visibility to highlight their accumulated skills. Organizes assignments so that students have individual assignments that must be completed and submitted for individual grades. Teamwork is also a highly valued skill for leaders and for this reason, a component of a student's grade is based on the final team report and presentation.	N	PRA	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; SFS 560; SFS 563; Pre- or corequisite(s): SFS 564
SFS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRO	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	596	Capstone	Required capstone where students conduct research and write a professional report of publishable quality based on the research.	N	LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainable Food Systems MS student
SFS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	101	Think Global-Individ&Authority	Examines the changing notions of the individual and authority over history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student
SGS	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
SGS	111	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
SGS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	203	Contemporary Global Trends	Gives a grounding in patterns of international politics and global social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
SGS	204	Prof Global Career Development	Orients the student to working in global contexts and to thinking critically about careers in the global arena. Focuses on working in organizational settings distinctly global. Three modules: nation-state, corporations, and working international organizations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
SGS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
SGS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	301	Principles of Global Studies	Presents current debates about globalization and subjects these to critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student

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SGS	303	Global Trends	Analyzes the process of globalization across boundaries through the investigation of the determinants and ramifications of globalization from the vantage of modern social sciences. Students are expected to conduct and articulate independent critical analyses toward a more in-depth understanding of this social phenomena, global history, and particularly the global economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	304	Cross-Cultural Awareness	Addresses the theory and practice of studying, working and/or living in cultures other than your own, and focuses on cultural preparation to learn successfully in diverse cultures. Develops an awareness of intercultural sensitivity and recognizes its value, gains specific intercultural competencies (as defined within the course), and enables students to better understand their own culture so they can understand their host culture at a more meaningful level. Because of the variety of locations where students study or intern, focuses on culture-general skills, not culture-specific ones. Students also gain career development skills to prepare them to apply to study abroad programs and related scholarships, and guidance on how to best utilize international experiences for maximum benefit and long-term career planning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 304 or SGS 394 (Cross-Cultural Awareness) or SGS 394 (Foundations of Cross-Cultural Awareness) OR Visiting University Student
SGS	305	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
SGS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SGS	320	Mechanisms Global Governance	One of the fundamental issues in the social sciences concerns the problematic attainment of social order, which is the principal aim of governance. Presents the five principal mechanisms purported to account for social order, and illustrates these by providing empirical examples of each; includes film clips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	321	Int'l Insts & Global Gov	Provides an in-depth examination as to how the international community organizes itself, through international institutions, to deal with serious international issues, and how the institutions of international governance can be improved. Studies diverse examples of international institutions primarily from the perspective of international relations (IR) theory and the role of international law (IL).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	323	International Development	Provides an introduction to the theories underlying international development and the remaining challenges facing academics, researchers, and policymakers in solving issues contributing to global poverty. Gives an overview of the state of the world, illustrating how indicators of economic growth and well-being are unequally distributed across countries. Conceptualizes the leading factors believed to drive these patterns and discusses the historical approaches to solving these problems. Gives particular attention to examples of policies and development strategies that either strengthened or weakened economies in the past. Second half of the course details current factors that continue to threaten development, such as poor health and education practices, limitations in agricultural growth and food security, and heightened risk due to climate change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SGS 323 or SGS 394 (International Development) or SOS 394 (International Development)
SGS	324	Negotiating Global Trade	Practical aspects of global trade including historic background, negotiations, supply chain, global terms, transportation, chartering, marine insurance, international arbitration, foreign exchange, letters of credit, barter, ethics, leadership, networking, country analysis and introduction to global management theories.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or junior standing; Credit is allowed for only SGS 324 or SGS 394 (Global Trade in Real Time) or SGS 394 (Global Negotiations)

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SGS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SGS	330	Globalization and Environment	Assesses the impact of globalization on the earth's environment. Examines such issues as biodiversity loss to pollution to urbanization to climate change, among others, and assess how globalization has driven, impacted or improved these environmental problems. Emphasis on understanding the social, political and economic factors that have contributed to global environmental change and the degree to which globalization processes are something 'new', as well as on examining the ability of communities, nations and transnational institutions to manage these global problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	340	Violence Conflict Human Rights	Interdisciplinary examination of the evolution and role of human rights in global society. Major themes include the political struggles over enforcement of human rights and curtailment of violence against individuals. Pays close attention to the role of non-governmental organizations and diplomacy in advancing human rights norms and also examines America's role in human rights, both at home and abroad. Focuses on the causes and effects of violence and human rights abuses in the context of torture, the "war on terror," and crimes against humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	341	Humanitarian Crisis&Intl Intrv	Focuses on political, legal, and ethical issues raised by decision about military interventions in genocide and humanitarian crisis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	343	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
SGS	344	Facing the Past: Truth, Memory	The past has never been so present as it is today. Over the last two decades, the world has shown an increasing interest in uncovering the hidden and forgotten histories of state-sponsored atrocities and acknowledging the fate of victims and survivors. Studies this movement for the recovery of truth, memory, and moral responsibility includes a wide range of actors and takes a number of different forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	350	Economic Dev & Globalization	Major issues and models in economic development. Studies development policy and foreign aid practiced since the 1970s and recent critique of these practices. Analyzes the mistakes made in the last 40 years, and potential for improving the practice of foreign aid. Contemporary issues in development economics, including the impacts of bad governance, foreign aid, corruption, war, military intervention and democracy on economic growth with emphasis on policy evaluations in health, education, microfinance and monitoring corruption.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	360	Cultural Aspects Globalization	Cultural aspects of globalization, starting with a theoretical discussion of what culture is and then weaving this discussion into an empirical examination of UNESCO's World Heritage program as a practical means of studying the role of culture in globalization. A number of questions guide our inquiry: What is culture? What forms does it take? Can culture be preserved? If so, what are the consequences? How is the UNESCO World Heritage Program structured? How does it conceive culture? What is its understanding of the global and the role of the local in it?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	361	World Society	Studies global processes by conceptualizing the world as a world society. This means that globalization is not just people being more interconnected enabling faster interactions. It suggests that interactions and institutions throughout the world are increasingly part of a whole, of a global consciousness, and while boundaries such as national boundaries are important, they do not delimit "society." The global is not just what is outside of national society or beyond the nation-state: it also constitutes what is inside the nation-state.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 361 or SGS 394 (World Society)

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SGS	366	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
SGS	370	Geopolitics	Geopolitics is a field that deals with war, conflict and the politics of animosity and violence. It calls special attention to the distribution of power on a global scale, and to the spatial scales at which power, authority and control operate. At one time, this involved studying how various "great powers" and "wise men" carved up the world according to their goals and interests. But power is everywhere! To name only a few examples, it is present in the ways that NGOs operate in conflict zones, in global health advocacy and awareness, in media coverage of distant catastrophes and seemingly immanent risks, and in disaster management and emergency response plans. Scholars in this field study topics such as war, diplomacy, conflict, migration, religious strife, terrorism and similar fields.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or minimum junior standing; Credit is allowed for only SGS 370 or SGS 394 (Global Geopolitics) OR Visiting University Student
SGS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
SGS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N		LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
SGS	381	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
SGS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
SGS	441	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only REL 480 or SGS 441 OR Visiting University Student
SGS	442	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
SGS	454	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
SGS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
SGS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N		LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
SGS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SGS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		

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SGS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7		
SGS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	501	Global Theory	Examines theoretical and analytical frameworks employed by institutions to frame action related to increased global uncertainty including economic, sociological, psychological, decision theory, gaming and institutional behavior frameworks. Uses case studies in key global issue areas such as climate change/natural hazards, energy security, urbanization, food security, security, failed states.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	502	Global Institutions and Actors	Examines key types of global institutions, (1) multinational businesses, e.g., Toyota, (2) international development organizations, e.g., the World Bank, and (3) voluntary organizations, e.g., the Red Cross/Crescent, in terms of the roles that they play in shaping localized outcomes. Using case studies, explores the impact of international actors in terms of the power and influence that they exert through international treaties, standards, information diffusion, influence on local governments and other organizations, dissemination of international "best practice."	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	503	Global Decision Making Methods	Examines and critically assesses approaches and methods used in decision making and planning under uncertainty in global contexts, e.g., scenarios, SWOT, risk analysis, contingency planning, gaming, economic forecasting, anticipation-foresight techniques, decision making under complex conditions, and rapid assessment techniques. Explores the strengths and weaknesses of different approaches under varying conditions, synergies achievable through application of multiple methodologies, and normative assumptions underlying various methodologies. Students gain "hands-on" experience in the use of a variety of techniques through assignments based on real-world situations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 504
SGS	504	Indiv Decis Mak CCultur Contx	Focuses on the role of the Individual decision maker in cross-cultural contexts, acting in the context of globally engaged institutions. The individual is virtually always embedded in an institutional environment whether as manager, planner, advocate, frequently acting as part of a team. It is recognized that the various agents/stakeholders involved in addressing an issue, negotiating a deal, in a global context, almost invariably hold significantly different worldviews, cultural norms and decision-making styles. Deals with the individual decision maker in both public and private decision-making milieus. Discusses modes of intervention and initiative. Addresses issues of leadership, reconciliation of different decision-making modes, and acting effectively in cross-cultural environments. Emphasizes decision making under high uncertainty, using case studies, e.g., pending nationalizations or privatization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503
SGS	505	Global Field Preparation	Prepares students for the global field project. In addition to scheduled classes, each student meets with her/his advisor at regular intervals during the semester to prepare for the Global Field Project. During the semester, students prepare a work plan for their Global Field Project, including objectives of the exercise, specifications of deliverables. Network building is an important secondary objective, and development of an esprit de corps among Global Studies masters students.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503; SGS 504
SHS	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		
SHS	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
SHS	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student

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SHS	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student
SHS	205	Exploring Comm Disorders	Introduces hearing, language, and speech problems in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
SHS	230	Peering into the Human Brain	An introductory look into the cognitive and language functions of the human brain, and the resulting behavioral consequences of injury, disease and disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4	SG	
SHS	250	Introduction to Phonetics	Introduces English phonetics with emphasis on phonetic transcription, articulation, phonology, and disorders of speech.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	300	Foundations of Rehab Sciences	Provides a foundation to rehabilitation science and covers an overview of rehabilitation professions and work settings including acute care, rehabilitation centers, long-term care facilities and in-home services. Also provides an introduction to clinical methods, patient privacy and professional ethics as well as an overview of rehabilitation process and continuum for children and adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	310	Anatomical/Physio Bases Speech	Noncadaveric study of anatomical systems that underlie human speech and language, including respiration, phonation, articulation, and related nervous system processes.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; SHS 250 with C or better OR Visiting University Student
SHS	311	Hearing Science	Studies the physical characteristics of sound and of the structure and function of the human auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PHY 101 with C or better OR PHY 111 and 113 with C or better OR Visiting University Student
SHS	340	Chronic Illness/Disability/Env	Over a billion people worldwide are estimated to live with some form of disability; however, disability is diverse in its association with chronic health conditions. Individuals with disabilities are vulnerable to deficiencies in health and social services. Depending on the group and setting, persons with disabilities may experience greater vulnerability to chronic illness, co-morbid conditions, age-related conditions, engaging in health risk behaviors and higher rates of premature death. Provide an overview of disability groups and the associated health conditions that impact their lives as well as discussion of the barriers to health care including health care costs, availability of services and physical barriers in the community.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	360	Rehab Children/Adolesc in Ed	Gives an overview of habilitation services for children from early intervention through adolescence in terms of physical, occupational and speech therapy, as well as other support services and their role with early intervention, educational settings, pediatric rehabilitation contexts.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	367	Language Science	Psychological processes, linguistic principles and social influences relating to language and communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	375	Speech Science	Normative aspects of speech, hearing, and language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 250 with C or better; Pre- or corequisite(s): SHS 310 with C or better if completed OR Visiting University Student
SHS	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
SHS	401	Principles of Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or SHS 501 or Visiting University Student
SHS	402	Clinic Mthds/Treat Comm Disord	Principles and techniques for planning speech and language intervention, including observation experiences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre- or corequisite(s): Speech-Language Pathology Assistant certificate student OR SHS 470; SHS 485 OR Visiting University Student
SHS	461	Accent Modification	Increases speech intelligibility in non-native English speakers by changing their English pronunciation skills. International students learn the pronunciation of American English vowels and consonants, intonation and stress patterns, and rhythm of speech. Conducts pre- and post-assessments of the students' intelligibility to determine the need for improvement on specific sounds and speech patterns.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): minimum 45 hours OR Visiting University Student

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SHS	465	Speech/Language Acquisition	Speech and language development in the normal child; introduces disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Pre- or corequisite(s): SHS 250; Credit is allowed for only SHS 465 or SHS 565 OR Visiting University Student
SHS	470	Develop Speech/Lang Disorders	The nature of speech and language disorders in children	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 465 with C or better OR Visiting University Student
SHS	473	Treatment Plan Implementation	Students will learn to follow written treatment plans, individual education programs, individual support plans or protocols developed by the supervising speech-language pathologist. Opportunities to learn methods for eliciting therapy targets and to apply critical thinking and problem solving during therapy will be provided.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	483	Professional Issues in SLPA	Studies licensure laws, professional conduct, and ethical practice in the field of speech language pathology.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	485	Acquired Speech/Lang Disorders	Acquired speech and language disorders across the lifespan.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 310 with C or better; SHS 367 with C or better OR Visiting University Student
SHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
SHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	496	Aural Rehabilitation	Approaches to aural rehabilitation of children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; SHS 375 with C or better; SHS 401 with C or better; Credit is allowed for only SHS 496 or SHS 596 OR Visiting University Student
SHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
SHS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite: MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	501	Introduction to Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or 501
SHS	502	Basic Audiometry	Covers the bases, purposes, rationales, and procedures for the core clinical tests of auditory function in adults and children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	504	Amplification I	Operation, electroacoustic measurement, selection, and prescriptive fitting of amplification devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	505	ASL for AuDs and SLPs	Facilitates effective manual and alternative methods of communication with deaf individuals in clinical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	508	Pediatric Audiology	Emphasizes the principles and procedures for early identification and management of congenital and early-onset hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	510	Amplification II	Verification and validation of hearing aid performance, benefit, and satisfaction. Fitting considerations for pediatric and geriatric populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
SHS	511	Aud Perception-Hear Impaired	Psychophysical methods and behavioral aspects of hearing, with an emphasis on the perceptual consequences of sensorineural hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	512	Mgmt Med Speech-Lang Pathology	Focuses on varying topics in management of medically based speech and language disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	513	Neurophysiology Auditory Sys	Focuses on the neurophysiology of the normal auditory system and on changes associated with hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student

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SHS	516	Auditory Evoked Potentials	Electrophysiologic assessment of the peripheral and central auditory nervous system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	517	Balance Assessment	Clinical analysis and treatment of balance disorders and dizziness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	518	Auditory Rehabilitation	Study and clinical application of assistive technology and rehabilitative services for managing the effects of hearing impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	520	Aud Path/Disorders & Otoneuro Ap	Familiarizes students with major pathologies and disorders of the human auditory system. Examines advanced otologic, neurologic, and audiologic approaches in the differential diagnosis and treatment of peripheral and central disorders of the auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Speech and Hearing Science graduate student
SHS	522	Hearing Conserv/Instrument	Examines the prevention, identification, physiologic effects, and management of hearing loss due to noise exposure. Incorporates measurement standards and methods for calibration of electronic audiologic instruments used to produce, modify, and measure characteristics of sound.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	523	Advanced Audiometry	Discusses assessment and intervention procedures beyond the basic audiologic test battery and for special populations. Examines relevant new audiologic tests and procedures. Prerequisites: SHS 502, 513; SHS major.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS major; SHS 502 and SHS 513
SHS	524	Counseling in Comm Disorders	Theories of counseling emphasizing the psychological and emotional impact and management of individuals with communication disorders and their families.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	525	Audiology Practice Management	Business practice issues, quality assurance, and professional ethics for the practicing audiologist.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	526	Launch to Clinic	In Launch-to-Clinic, students rotate through on-campus observations and group orientation to the ASU Speech and Hearing Clinic. Students learn the policies and procedures of the ASU Speech and Hearing Clinic, software specific to the clinic operations, report writing, and clinical documentation with practice to develop the skills needed to succeed in subsequent clinical rotations both on and off campus.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Audiology major; Credit is allowed for only SHS 526 or SHS 580 (Audiological Observation) or SHS 580 (Audiology Observation)
SHS	538	Clinical Method and Simulation	Provides the knowledge and skills in clinical methods for treatment and diagnosis in speech-language pathology. Topics cover essential information to participate in screening and prevention opportunities, to structure and implement therapy goals and strategies, to apply for internships, and to administer and interpret informal and formal diagnostic tests.	N	LEL	Y	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders major.
SHS	539	Professional Issues inSLP	Covers professional issues in speech-language pathology to ensure that students meet the professional knowledge requirements set forth in the American Speech-Language-Hearing Association (ASHA) certification standards. The topics cover essential information that the student needs to have in order to meet graduation requirements, comply with ASHA's ethical requirements, complete ASHA certification requirements, comply with Arizona state licensure requirements, prepare for a Clinical Fellowship Year and be involved in education and advocacy for the profession of Speech-Language Pathology.	N	LAB	Y	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Communication Disorders MS student
SHS	541	Data Analysis Neurosc	Common statistical analyses for the interdisciplinary field of auditory and language neuroscience. Covers fundamental topics of statistics and their applications in this specialty area of neuroscience. Various data types, experimental designs and statistical analyses that are common in the field of auditory and language neuroscience. Through several hands-on activities, students learn to implement and to apply different statistical analyses to auditory and language data.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	542	Applied Rsch Meth Neurosc	Team-taught course covering fundamental topics of experiment design and their applications in auditory and language neuroscience. Students learn about the fundamentals of experimental design, and their application in psychoacoustics, EEG, ERP and MRI. A series of hands-on activities require that students analyze existing experiments and a final project requires that students design a new experiment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student

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SHS	543	Functional Neuroimaging Lang	Functional neuroimaging for anyone who is interested in its application to study brain functions including language, speech and auditory psychophysics. Functional MRI is a prominent method to see into the human brain. Its use as a research tool in the field of neuroscience (and language neuroscience in particular) has grown exponentially over the past decade. Through a combination of lecture, readings and practicum exercises, this course provides a broad introduction into functional MRI research, including how MRI can generate images; how these signals relate to neuronal activity; and how to design and analyze meaningful functional MRI experiments to investigate the neural computations of language, speech, hearing and other related functions. Students also review recent functional neuroimaging literature, and gain hands-on experience collecting and analyzing fMRI datasets.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 543 or SHS 598 (Functional Neuroimaging of Cognition)
SHS	550	CORE B - Development 6-21	Covers development, assessment and intervention of children from 6 years to 21 years of age, with a focus on school education. Includes child development of anatomical, neurophysiology, cognitive, motor, perceptual, speech, language, reading, writing and hearing aspects. Also addresses service delivery models in different contexts in children with atypical development in the different areas.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 540
SHS	552	Physio Measure Auditory Functn	Focuses on the measurement of otoacoustic emissions and acoustic immittance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	555	Cochlear Implants	Covers the research and clinical aspects of cochlear implantation with a focus on the principles of speech coding strategies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	560	CORE C - Adult dev./aging	Covers development, aging, assessment and intervention in adults with a focus on the elderly and the contexts for their service delivery. Includes changes in the adults related to anatomy, neurophysiology, cognitive, motor, perceptual, speech, language, literacy and hearing aspects. Also addresses service delivery models in different contexts where elderly and young adults with acquired disabilities are served.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 550
SHS	565	Speech/Language Acquisition	Speech and language development in the normal child; introduces disorders with added focus on common disorders of acquisition.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 465 or SHS 565
SHS	567	Neural Bases Comm Disorders	Neuroscience and its application to matters of normal and disordered communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	568	Special Population in Comm Dis	Covers basic knowledge of etiological aspects (genetics, embryology) and clinical assessment/intervention issues relevant for children with complex medical and developmental disabilities that impact communicative development. Places special emphasis on children with cleft lip and/or palate. Addresses interprofessional roles and team-based management of complex conditions and the development of evidence-based approaches to assessment and intervention in communicative development. Because of the growing knowledge of genetic etiologies in our field, SLPs will increasingly be in a position to make informed referrals to genetics professionals. Therefore, this course includes practical how-to information on spotting genetic red flags and referring for genetic counseling services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only SHS 568 or SHS 598 (Special Populations in Comm Disorders)
SHS	570	Comm Disorders/Multicul Pops	Studies racial and ethnic biases and the communication behaviors and disorders in various cultural groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	571	Augmentative Comm/Lang Prog	Focuses on individuals across the age span who are unable or who are at risk for being unable to communicate with spoken language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student

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SHS	572	Lang Assess/Intervnt Infants	Focuses on the birth to 3-year-old population who are at risk for or who have communication and language disabilities. Examines early developmental risk factors for speech and language delays and evidence-based assessment methods for young children and their families. In addition, explores models of early intervention delivery in homes, clinics, schools and through telepractice and their application in multicultural environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Auditory and Language Neuroscience MS or Communication Disorders MS or Speech and Hearing Science (Auditory and Language Neuroscience) PhD student
SHS	573	Lang Assess/Intervnt Sch Age	Focuses on later language development, linguistic demands of academic settings, assessment and intervention strategies for older children and adolescents.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	574	Feeding & Swallowing Disorders	Focuses on assessment and intervention of people with swallowing and feeding disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	575	Aphasia/Neurogenic Lang Disord	Assessment and treatment of acquired neurolinguistic impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	576	Neuromotor Speech Disorders	Evaluation and treatment of the dysarthrias and apraxia of speech. Emphasizes acquired adult disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	577	Current Research in Autism	Addresses communication disorders in children and adults with autism, as well as evaluation and intervention across a variety of settings and theoretical frameworks.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	578	Fluency Disorders	Provides the master's level student in speech language pathology understanding of the nature and treatment of stuttering and other fluency disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Corequisite(s): Communication Disorders MS student
SHS	579	Voice and Resonance Disorders	Provides an academic and clinical understanding of voice and voice-related disorders (including resonance and respiration). Includes the impact of voice and voice-related disorders on quality of life and ability to meet communicative ADLs (activities of daily living). Addresses principles of assessment and intervention. Requires students to identify and use relevant evidence-based resources to develop clinical materials to maintain and rehabilitate functional communication and to support interactions with patients, students, caregivers and colleagues. Utilization of evidence-based resources is a skill that speech-language pathologists use throughout their careers, and it represents best practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Communication Disorders MS student
SHS	580	Clinical Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		
SHS	581	TBI & Cog Linguistic Disorders	Studies the nature, characteristics, and clinical management of cognitive and communicative impairments accompanying right hemisphere damage, TBI, and dementia.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	582	Diff Diagnosis Comm Disorders	Procedures for assessing speech/language disorders in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	584	Clinical Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		
SHS	585	Artic/Phonology: Assess/Interv	Assessment and treatment of developmental articulation and phonological disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	586	Language Essentials Teach Read	Focuses on the fundamentals of literacy instruction and assessment in children enrolled in preschool through high school. Although speech-language pathologists (SLPs) are not the primary reading teachers for students, they play an important role in improving learning in all areas of language, both oral and written. For this reason it is crucial for SLPs to have foundational knowledge in reading and writing development. Recommend a clear understanding of typical language development and language disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 586 or SHS 598 (Language Essentials for Teaching Reading) or SHS 598 (Reading Decoding)
SHS	587	Lang Assess/Interv Preschool	Focuses on preschool language disorders and assessment and intervention strategies for preschool children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student

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SHS	588	Bilingual Language Acquisition	Examines bilingual language development in children through adulthood. Uses Spanish-English as the primary example.	N	SEM	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate
SHS	589	Audiology Grand Rounds	Grand Rounds bridges clinical and academic knowledge through case studies, application of emerging research, and clinical workshops.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1		
SHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		
SHS	596	Aural Rehabilitation	Approaches to aural rehabilitation in children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only SHS 496 or 596
SHS	597	Bilingual SLP	Reviews speech and language assessment and intervention practices with bilingual populations from infants to adults.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		
SHS	701	Sci Writing and Presentation I	Basics of launching a research project. Helps students gain an independent perspective of a research field, become competent in critical questioning and analysis of literature, learn how to develop a research question and initiate a research plan.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Ph.D. student; Credit is allowed for only SHS 701 or SHS 790 (Critical Thinking & Developing Research Questions OR Scientific Writing & Presentation 1)
SHS	702	Sci Writing & Presentation II	Covers the specific parts of an APA style research manuscript, including the structure of the Introduction, Method, Results and Discussion. Also introduces other alternate research manuscript styles such as those used in the biosciences. Discusses strategies and recommendations for creating a successful research presentation.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Requisite(s): Ph.D. student; Credit is allowed for only SHS 702 or SHS 790 (Scientific Writing & Presentation 2)
SHS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		
SHS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		

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SHS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		
SHS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		
SLB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	510	Amateur Sports Law: MSLB	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)
SLB	511	Sports Career Strat & Bus Comm	Focuses on examining job opportunities in the sports industry and the development of strategies for obtaining a position suitable to the talents and abilities of individual students. Students refine their skills in terms of searching for a job. Students also develop a career plan, beginning with an entry-level position for those who have worked in the industry or a next-level position for students currently working in the area.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 511 or LAW 598 (Strategic Career Planning)
SLB	512	Professional Sport Law: MSLB	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
SLB	513	Sports Law and Business	Studies law, policy and problem solving in the context of the sports industry at all levels. Exposes professional, amateur and international sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student
SLB	514	Negotiations & ADR in Sports	Provides a working or basic knowledge of contract law, with in-depth instruction with regard to negotiating and drafting in the sports context. As their final project, students select a player, coach, university or club and then negotiate a contract. Negotiation sessions are held during class sessions and students evaluate each other, as well as receiving evaluation from the professor. Replicates the negotiation process in the sports industry.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 514 or LAW 598 (Contracts in the Sports Industry)
SLB	515	Sports Bus Strat&Exec Decision	Sports can involve a jog around campus or big business. Sports are interesting, important and a vivid context to learn about consumers, organizations, diverse stakeholders, media and entertainment, partnerships and sponsorship, highly competitive strategies in finance and marketing, managing community venues, big events, and other relevant business topics. Maintains a pragmatic, experiential, yet well-grounded focus, studying the role, nature and dynamics of sports business both in and around "sports industries" and in and around "conventional businesses." Builds and "tests" knowledge and exercise skills related to sports business analysis, decision making, communication and both strategy development and execution. Intellectually rigorous, yet fun. Develops a sophisticated, yet practical understanding of the nature, contexts and dynamics of sports business.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 515 or MKT 591 (Sports Business Strategy and Industry Dynamics)
SLB	516	Revenue Generation in Sports	Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance. Gives broad exposure to the major revenue generating domains in the sports industry. Explores the fundamentals of marketing and applies those fundamentals to the domains of sponsorship, endorsement, media, ticketing, merchandising and fundraising as means to create and maintain revenue streams.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 516 or MKT 591 (Sports Business Development)
SLB	517	Sports Marketing	Studies the role, nature and dynamics of sports business and builds knowledge and skills related to sports marketing analysis, decision making and strategy development and execution. Intellectually challenging and demanding, yet fun.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 517 or MKT 598 (Sports Marketing)

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SLB	518	Sports Analytics	Develops and applies analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 518 or MKT 591 (Sports Analytics)
SLB	519	Pro Sport Team Ops/Legal:MSLB	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 670 or SLB 519 or SLB 598 (Pro Team Sports:Legal Issues in Business Operation)
SLB	520	Sports Venue Construction:MSLB	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 671 or SLB 520
SLB	521	Risk Mgt for Venues - MSLB	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 673 or SLB 521
SLB	522	NCAA Compliance: MSLB	Provides a real-world view of a Division I Power 5 Conference Compliance Office and the manner in which such an office directs its institution's efforts to maintain compliance with National Collegiate Athletic Association and member conference legislation governing intercollegiate athletics.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 674 or SLB 522 or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
SLB	523	MLB Impact on Law/Society-MSLB	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 672 or SLB 523
SLB	524	Law of Sports Branding-MSLB	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 677 or SLB 524
SLB	525	Sports Big Events:MSLB	Teaches the business, legal and operational issues of major sporting events. Examines bid preparation, marketing, sales, ticketing, operational, security, volunteer, sponsorship, legal and other issues related to these events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only SLB 525 or SLB 598 (Sports Big Events:Law/Biz/Ops-MSLB)
SLB	581	US Law/Legal Analysis in Sport	The U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete written legal analysis exercises, draft case briefs and participate meaningfully in class by critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student
SLB	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student

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SLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	REC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student
SLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLC	103	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
SLC	104	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
SLC	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
SLC	123	Gods & Monsters: Comparat Myth	Guides students in comparing mythologies of a number of different cultures, including ancient Greek, Asian, Middle Eastern, European and American aboriginal traditions. Roots readings and assessments in the relevant literature from each tradition. Introduces students to (short selections from) texts from a variety of cultures, including ancient Greek epic and tragedy, the Ramayana, Norse eddas, the various flood stories from Mesopotamian cultures, African creation and Mesoamerican creation myths, and the legend of King Arthur. In addition, students encounter oral tradition and folklore from the Brothers Grimm, African-American trickster stories, American folklore, vampire legends, and Native American oral tradition. These types of texts invite discussion of cultural appropriation and the modern uses of such traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Credit is allowed for only SLC 123 or SLC 194 (Gods and Monsters: Comparative Mythology)
SLC	140	Grk&Lat Roots Biosctfc Trmngy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
SLC	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only RUS 141 or RUS 441 or SLC 141 OR Visiting University Student
SLC	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142

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SLC	143	Roman Civilization	Introduces ancient Roman civilization from the earliest times (ca. 1200 BCE) through the fall of the Western Empire (CE 476) and the reign of the Byzantine Emperor Justinian (6th c. CE). Examines ancient Roman society, history, art, architecture, literature, mythology and legends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only LAT 143 or LAT 194 (Roman Civilization) or SLC 143 or SLC 194 (Roman Civilization)
SLC	144	The Ancient Mediterranean	Provides a comprehensive introduction to the Mediterranean world, focusing on (but not limited to) the period of the classical Greeks and Romans. Provides some history of the area, but focuses on the classical world and its interaction with the cultures that surrounded it, including Semitic, Near Eastern, and North African cultures, as well as some of the lost cultures of the area such as the Minoans and Etruscans. Introduces the sources that provide information about these cultures (literary, art historical and archaeological sources), and teaches students to think critically and write persuasively about these sources.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 144 or SLC 194 (The Ancient Mediterranean)
SLC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		Pre-requisites: maximum 25 hours
SLC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	201	Introduction to Linguistics	Examines the nature and diversity of world languages, linguistic structures and functions of language, language variation, pragmatics, and language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU or SB	
SLC	202	Expl Culture: Words/Image/Stor	Introduces the fundamentals of cultural analysis to help students understand the ways in which the languages and literatures they are learning are embedded in a broader cultural context. With an emphasis on comparative perspectives and theoretical discussion, teaches methods of inquiry that enable students to formulate their own research questions and draw on their individual backgrounds as School of International Letters and Cultures majors, no matter the language, country, period or artistic medium they focus on. All course materials and instruction are in English. Interested students are encouraged to bring in and address primary and secondary sources in the target language of their focus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
SLC	203	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
SLC	204	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
SLC	212	Language and Culture Clash	Not limited to language majors and does not require any previous knowledge of a foreign language or culture. Students complete course projects using the material of their cultures of interest (the language they are taking interest in, including English). Focuses on the following topics in linguistics and cross-cultural communication: cultural norms, cultural conceptualizations, cultural scripts (as linguistic concepts), equivalence, communication failures. Emphasizes hands-on analysis, and also familiarizes participants with the basic concepts in the fields of cross-cultural linguistics and cross-cultural psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 212 or SLC 294 (Language&Culture Clash/Communcn&Miscommunication)
SLC	214	World's Game:Hst & Ctr Soccer	Provides a survey of the cultural significance and global reach of soccer, both historically and in contemporary culture. Students study materials from around the world in several mediums; they view films that explore the cultural impact of the game; read literary works that focus on soccer; and engage with scholarly articles and contemporary news media dedicated to the game. Provides a comprehensive sense of the history, personalities, rivalries, fandom, and even the finances and scandals related to the world's game.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): Credit is allowed for only HST 214 or HST 294 (The Beautiful Game: History & Culture of Soccer) or SLC 214 or SLC 294 (The Beautiful Game: History & Culture of Soccer)
SLC	221	Survey of Ancient Greek Lit	Introductory survey of ancient Greek literature. Familiarizes students with the important literary genres, texts, and authors of the ancient Greeks from Homer to the Hellenistic period. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 221 or SLC 221

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SLC	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)
SLC	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
SLC	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
SLC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N		LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLC	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
SLC	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321
SLC	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student
SLC	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
SLC	334	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student
SLC	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336

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SLC	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
SLC	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
SLC	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
SLC	345	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
SLC	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
SLC	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
SLC	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
SLC	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student
SLC	351	Tales of Troy	Provides an in-depth exploration of the ancient Greek archaic primary source material, including literary, art historical and archaeological sources. Uses stories about the Trojan War as a theme for the course, but does not limit exploration of the literature, art, history and culture of archaic Greece.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 351 or GRK 394 (Tales of Troy) or LAT 394 (Tales of Troy) or SLC 351 or SLC 394 (Tales of Troy) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SLC	352	Rise & Fall of Ancient Athens	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the end of the Greco-Persian wars in 479 BCE through the rise and decline of Athens (including the Peloponnesian War with Sparta) to the final defeat of the Greek cities by Philip of Macedon in 338 BCE. This holistic study addresses not only the history of this period but also its literature, art and philosophy, with an emphasis on how these phenomena relate to one another. This period advanced to the state that was regarded by later civilizations as their peak, and which inspired Rome and Europe in the Renaissance. Athens, as the cultural center of Greece at this time, boasted the tragedies of Aeschylus, Sophocles, and Euripides, the comedies of Aristophanes, the history of Thucydides, the philosophy of Plato, and the artistic achievement of the Parthenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 352 or GRK 394 (Glory that was Greece) or LAT 394 (Glory that was Greece) or SLC 352 or SLC 394 (Glory that was Greece) OR Visiting University Student
SLC	353	Alexander and His Empires	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the ascent of Alexander the Great to the Macedonian throne in 338-336 BCE, through the existence of the kingdoms that followed his conquests, until their final subjugation by the Roman Empire in 31 BCE. This holistic study addresses not only the history of this period, but also its literature, art, religion, philosophy and science, with an emphasis on how these phenomena relate to one another. This was a period of massive economic and military expansion (including colonization), accompanied by social dislocation and cultural and scientific innovation. In these respects, this period has much to teach us today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 353 or GRK 394 (Alexander and His Empires) or SLC 353 or SLC 394 (Alexander and His Empires) OR Visiting University Student
SLC	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
SLC	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
SLC	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
SLC	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SLC	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
SLC	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
SLC	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)

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SLC	385	Cinema and Culture of Spain	Offers a historical and cultural survey of major films from Spain. Studies key works with a focus on their aesthetic, cultural, political and historical context. Trains students to develop the skills to critically view how films are constructed, how films create meanings and values, and how films are connected to the cultural and historical contexts in which they are created and watched.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only SLC 385 or SPA 385 or FMS 394 (Cinema and Culture of Spain) or SLC 394 (Cinema & Culture of Spain) or SPA 394 (Cinema & Culture of Spain) OR Visiting University Student
SLC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	401	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SLC	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
SLC	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 491 (Asian Popular Culture) or SLC 494 (Asian Popular Culture) OR Visiting University Student
SLC	421	Japanese Lit in Translation	Readings selected by theme or genre or period from various works of Japanese literature in English translation. May be repeated when topics vary. Graduate students by permission.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
SLC	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
SLC	425	Colonialism to Climate Change	Allows students to engage with the broader experience of globalization by examining cultural material in relation to the circumstances and conditions of the globalization process. Organized chronologically and divided into four units: the period before European hegemony, the era of European colonialism and imperialism, the period of decolonization and modernization, and the contemporary context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better

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SLC	428	Arab Women's Writing	Offers a survey of Middle Eastern women's literary work in English translation. Themes focus on a comprehensive view of women's writing through several lenses, including: gender, religion and socio-political systems to introduce women's writing in modern Arabic literature through the prisms of Arabic literary criticism and feminist theory within historical contexts. Explores different genres, including autobiographical, short stories and novels, and cinematic production. Selective literary texts include leading 20th-century female writers whose works in translation represent a wide range of geographical, ideological and cultural influence. Featured writers include Rajaa al Sania, Latifa Zayyat, Radwa Ashur, Hanan al-Shaykh, Nawal Al Sadawi and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 428 or ARB 494 (Arab Women Writing Across Generations/ in Eng) or SLC 428 or SLC 494 (Arab Women Writing Across Generations/ in Eng) OR Visiting University Student
SLC	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
SLC	439	Vladimír Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Priglasenie (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)
SLC	440	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student
SLC	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
SLC	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voivode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the World) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student

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SLC	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
SLC	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
SLC	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
SLC	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
SLC	450	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
SLC	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
SLC	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
SLC	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455
SLC	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student

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SLC	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SLC	460	Brazilian Society Thru Music	Surveys Brazilian popular music in the 20th and 21st centuries, focusing on one main question: What images of Brazil have been imagined by Brazilian popular music in various socio-political contexts? Working with various genres, discusses how issues pertaining to race, social class, and citizenship have contributed to shape the Brazilian popular music scene and its representations of Brazil both at home and abroad. Taught in English. However, students who have completed POR 202 or POR 321 have the option of completing the assignments in Portuguese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only POR 460 or POR 494 (Contemporary Brazilian Popular Music) or SLC 460 or SLC 494 (Contemporary Brazilian Popular Music) OR Visiting University Student
SLC	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)
SLC	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
SLC	479	Intro to Teaching Foreign Lang	Introduces teaching methodologies, language learning, and current best practice in teaching foreign languages in U.S. middle and high schools.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SLC	480	Methods Teaching Foreign Lang	Teaching foreign languages and literatures at secondary and college levels. Does not meet the The College of Liberal Arts and Sciences General Studies requirement for humanities and fine arts. Required for admission to SED 478.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SLC 479 with C or better
SLC	481	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441
SLC	482	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SLC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	485	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student

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SLC	486	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SLC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		Pre-requisite: minimum 56 hours
SLC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLC	510	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510
SLC	515	Second-Language Acquisition	Discusses and applies theories of second-language acquisition.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SLC 400
SLC	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545
SLC	546	Heritage Language Pedagogy	Sociolinguistic and pedagogical issues around the teaching and learning of heritage languages. Through a close examination of seminal articles in the field of heritage language pedagogy and research, students gain an understanding of the issues that concern these students and the teaching of this population. Defines the field, describes heritage language learners, and discusses the goals and sociolinguistic concerns of HL instruction. Also reviews the most appropriate teaching methodologies and principles for the heritage language classroom, especially in relation to literacy development. Contains a practical component that includes observations together with lesson plan and material development to prepare future teachers for effective classroom experiences and/or language program development. Course requirements include critical essays, online discussions, class observations, lesson plans and a research/applied paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 546 or SPA 546 or SPA 598 (Heritage Language Pedagogy)
SLC	547	Applied Linguist Online Learn	Technology has changed the way we teach and learn languages. Examines how online language learning is informed by research and theory; explores how different tools and environments can support online language learning. Familiarizes students with research methods and tools used to examine online language learning. Participants either design and develop the instructional materials for an online course of their choice or design and conduct a research project.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 547 or SPA 547 or SLC 598 (Topics in Applied Linguistics: Online Learning) or SPA 598 (Topics in Applied Linguistics: Online Learning)
SLC	551	Global Approaches to Trans	Familiarize students with various approaches to translation practice. Examines issues related to the cultural role of translation. Students [prepare a translation, justification of translation choices, and discussion of the complexities posed by the translation. Readings address a broad array of translation theories, with most focused on translation as a globally theorized phenomenon in the 20th and 21st centuries. Readings and discussions focus on how one translates, and on translation as a culture-making enterprise inextricably tied to the questions of who translates, in what context, for whom, and to what ends. Students understand translation theories from different eras and cultures; understand how translation is implicated in different forms of intercultural contact (colonialism, commerce, proselytization); gain experience translating texts from a source language into English; and can explain why they translated the way they did.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SLC	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
SLC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stndt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
SLC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	602	Comparative Cultural Theory	Trains SILC Ph.D. students in a range of theories and methods of cultural analysis and comparison, and explores some of the conceptual tools used in the production of comparative studies scholarship. Exposes students to texts by authors from diverse historical and geopolitical contexts and encourages them to reflect upon these various commentaries on the nature and interpretation of culture and cultural production. Discussion centers on the relationship between cultural production and material realities and on the interdependence of cultural production and social, economic and political issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SLC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		

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SLC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SLV	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLV	440	History of Slavic Languages	Comparative evolution of East Slavic, West Slavic, and South Slavic languages from the earliest record to the standardizing of national languages in the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SLV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SLV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
SLV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLV	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SMC	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
SOC	101	Introductory Sociology	Fundamentals of sociology, organization of human groups and society, processes of interaction, and social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Credit is allowed for only SOC 101 or SOC 301 OR Visiting University Student
SOC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshmen; maximum 25 earned hours
SOC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
SOC	220	Sport and Society	Examines sports in American society as a source of socialization and an institution where gender, race/ethnicity, and class interact.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	241	Modern Social Problems	Race relations, poverty, unemployment, and other current issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
SOC	270	Racial and Ethnic Relations	Problems of minorities in heterogeneous societies. Evaluates theories of prejudice and research dealing with discrimination, desegregation, and assimilation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	
SOC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		

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SOC	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student
SOC	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): Minimum 24 hours; SOC 101, PSY 101(PGS 101), FAS 101 or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
SOC	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & H & C	Prerequisite(s): ENG 101, 105 or 107 with a C or better; minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
SOC	315	Courtship and Marriage	In-depth study of courtship, marriage, and related processes, focusing on problematic aspects of these institutions from the sociological perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	320	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
SOC	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
SOC	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SOC	328	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours. Credit is allowed for only ASB 340 or SOC 328
SOC	331	Environmental Sociology	Analyzes human organizational responses to population growth, technological change, and environmental stressors on both a national and global scale.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): minimum 45 hours
SOC	332	The Modern City	In-depth analysis of the growth, characteristics, and problems of the modern city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	333	Population	Global trends in population growth, composition, and distribution; theories, policies, and impact of population trends on environmental quality and development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	334	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334 OR Visiting University Student
SOC	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic, and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339
SOC	340	The Sociology of Deviance	Sociological analysis of stigmatized behaviors and conditions, including the causes, effects, and management of stigma.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or SOC 301 OR Visiting University Student
SOC	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
SOC	343	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342

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SOC	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
SOC	352	Social Change	Patterns of social change, resistance to change, and change-producing agencies and processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G & H	
SOC	353	Death&Dying Cross-Culturl Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
SOC	354	Global Politics of HumanRights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
SOC	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
SOC	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well. May be repeated once for credit.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SOC	360	Sociological Psychology	Interaction patterns between the sociocultural order and individuals; socialization process; norms, roles, and statuses; collective behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101, PSY 101(PGS 101), FAS 101, or FAS 330 with C or better; Minimum 24 hours
SOC	363	Men and Masculinity	Sociological analysis of how masculine identity is defined, negotiated, and variously constructed depending upon class, ethnicity, age, and sexual orientation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101
SOC	364	Popular Culture and Society	Studies the social approaches to popular culture, focusing on the function of various forms (literature, film, theatre, and music).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): minimum 45 hours
SOC	365	Sociology Mass Communication	Sociological exploration of the major mass media as a communicative process in American society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	366	Film and Society	Studies the social approaches to film as an art form, mass medium, and ideological construct.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: Minimum 45 hours; Credit is allowed for only ASB or SOC 371
SOC	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
SOC	378	Migration and Society	Application of social scientific theories and principles in order to understand the social and ethnic consequences of international migration with a focus on the United States. Students will communicate views formulated from empirical evidence and reasoned analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ASB 102 or SOC 101 with C or better; 45 minimum hours
SOC	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SOC	390	Social Statistics I	Descriptive and inferential statistical methods for analysis of social data. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	CS	Prerequisite(s): MAT 142 or higher with C or better OR Visiting University Student

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SOC	391	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student
SOC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	400	Perspectives on Aging	Broad overview of gerontological issues; e.g., physical aging, retirement, living options, caregiving, theoretical background, death.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
SOC	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
SOC	415	The Family	Family considered from the institutional viewpoint; in-depth look at its historical development and its adaptation to a changing culture; analysis of the family system in many cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, 330, PSY 101(PGS 101) or SOC 101 with C or better; minimum 30 hours
SOC	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PSY 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
SOC	420	Sociology of Religion	Interrelationship of culture, society, and religion; religion and social stratification; religious, economic, and political institutions; social change and religion. Emphasizes American society and institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
SOC	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
SOC	424	Women and Health	Women as healthcare workers and an in-depth analysis of issues of health, illness, and healthcare for women	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 30 hours OR Visiting University Student
SOC	425	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
SOC	426	Social Inequality	Examines stability and change in social inequality based on class, race and gender, and in the context of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	427	Sociology of Health/Illness	Social aspects of illness and sociological analysis of the healthcare system and its practitioners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours. Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
SOC	435	Adv Marriage/Family Relationships	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
SOC	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437 OR Visiting University Student
SOC	443	Sociology of Corporations	Examines corporations as social institutions and the implications of their status as a legal person on politics, culture, and economy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	445	Globalization, Devel&Resistance	Explores the interconnections among globalization, development, and grassroots movements for social change in Africa, Asia, and Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	448	Epidemics and Society	How epidemics occur; how they are perceived in society; how epidemics affect society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	451	Comparative Sociology	Cross-cultural study of basic social institutions; the methodology of cross-cultural research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	

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SOC	455	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOC	456	Political Sociology	Social factors associated with voting; nature and structure of the electorate and political parties and the nature of national and international power structure.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	457	Global Social Movements	Examines how groups mobilize across borders to pursue social goals, including equality, justice, peace, and salvation in a global context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
SOC	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
SOC	483	History of Social Thought	Social thought in human culture. Background of modern sociology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	486	Contemporary Theory	Contemporary issues and crises in social theory with major focus on particular theorists. Ideological factors in theory, philosophical issues, the nature of theory and its relationship with methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or 301 OR Visiting University Student
SOC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SOC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
SOC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
SOC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)

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SOC	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 505; Graduate students only (degree and non-degree)
SOC	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 507; Graduate students only (degree and non-degree)
SOC	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 508; Graduate students only (degree and non-degree)
SOC	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 509; Graduate students only (degree and non-degree)
SOC	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
SOC	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
SOC	515	Studies of the Family	Current developments in the study of marriage and the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	516	Family Demography	Current developments in the study of family demography.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	523	Social Stratification	Overviews significant themes, issues, and bodies of work in the field of social stratification, a fundamental topic of sociological inquiry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	533	Demographic Methods	Emphasizes methods and techniques in demographic analyses such as life tables.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	585	Sociological Theory	Analyzes major sociological theories, from classical to contemporary.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
SOC	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587
SOC	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588
SOC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	603	Sociological Inquiry	Provides an overview of core theoretical frameworks and associated analytic approaches in sociology. Taught by faculty members from across the university with sociological training or research interests, providing students with foundational and advanced research tools as well as introducing them to ongoing research at ASU, the distinctive contributions of sociological perspectives to inter- and transdisciplinary projects, and potential opportunities for research residency.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	685	Applied Social Theory	Overviews main classical and contemporary theoretical paradigms and concepts in sociology and provides advanced training on using them to build empirical analytic models. Students identify theoretical perspectives appropriate for research questions, build corresponding conceptual frameworks, and formulates testable hypotheses. Seminar format and therefore students' active participation is expected.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	100	Introduction to Sustainability	Introduces basic concepts, global trends, and local responses, philosophical, ethical, and cultural dimensions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	G	Prerequisite(s): Non-Sustainability majors or non-Sustainability concentrations OR Visiting University Student
SOS	101	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): MAT 117 or higher with C or better or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
SOS	110	Sustainable World	Lays the groundwork for understanding the fundamental geological, biological, and social processes that gave rise to the world we live in and continue to maintain its viability for human life.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB	

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SOS	111	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student
SOS	117	Food System Sustainability	Food systems are particularly important for human societies to sustain and are also particularly vulnerable to multiple threats related to the interconnected sustainability challenges we face. Introduces the concepts and issues involved in food systems sustainability. Divided into four modules, the first three of which address the other systems with which food systems interact--socio-ecological, socio-cultural and socio-technical systems. The final module addresses the future of food systems. Teaches students about the main issues in food system sustainability and allows students to enhance their critical thinking skills by applying them to the many sustainability challenges associated food system activities via solutions-based learning including the social, ecological, economic and institutional dimensions.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3		
SOS	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
SOS	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3	HU	Credit is allowed for only SOS, FSE or CEE 181
SOS	182	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice, rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
SOS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y		SEM	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SOS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	201	Introduction to ASU and SOS	Introduces all ASU transfer students to the unique elements, culture, challenges and opportunities of the university.	N		LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS or Sustainable Food Systems BS major; minimum 24 hours OR Visiting University Student
SOS	210	Society and Environment	Examines the interaction among social processes, key environmental issues, and nature's role as a resource at global and regional scales.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3	G	Credit is allowed for only GPH 210 or SOS 210
SOS	211	Calculus and Probability	Introduces two of the most important and useful mathematical frameworks used to study natural and social phenomena: probability and calculus. Probability is used to describe an attitude of mind toward some proposition whose truth is not certain. Calculus is the branch of mathematics used to study the behavior and dynamics of functions: calculus is the mathematical study of change. Students gain the basic competence needed for applying probability and calculus when thinking about and research problems in sustainability. Focuses on and discusses applications, the meaning of important concepts, the origins of the rules of derivation and integration, and logic behind why the methods work.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): AML 100 or SOS 101 with C or better OR Visiting University Student

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SOS	212	Systems, Dynamics & Sustainability	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 211 OR Visiting University Student
SOS	215	Fundamentals US Food & Agricul	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SOS	216	Subsectors US Food & Agricul	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SOS	220	Systems Thinking	Introduces systems thinking and complexity science, with an emphasis on analytical relevance for thinking about a myriad of issues involved in sustainability. Hones students' abilities to read critically, articulate their views clearly, and think about the many systems that shape their lives.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	230	Professional Skills-Sustainabi	Builds interpersonal competence, which is a key competence in sustainability. Students work on a small hands-on sustainability project in order to practice professional skills in four domains: teamwork, project management, self-directed and continuous learning, and stakeholder engagement. Students learn how to effectively collaborate in teams, use project management tools to achieve quality products in time, innovate their ways of learning, and create productive dialogue with stakeholders.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better
SOS	231	Careers in Sustainability	Aids in career exploration and development for School of Sustainability majors. Explores values, motivations and career options. Students learn how to approach the job search and how to communicate sustainability to employers; also how to prepare a quality résumé, cover letter, and gain a better understanding of the benefits of networking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS major or Sustainable Food Systems BS major; PUP 190 or SOS 111 with C or better; SOS 110 with C or better; minimum 45 hours OR Visiting University Student
SOS	232	Prof Skills in Sustainability	Students learn how to effectively and compassionately communicate, engage in collaborative teamwork, use project management tools to achieve quality products on time, innovate their ways of self-directed and continuous learning, engage with stakeholders on solutions, and ensure mindful self-care. Students work on a sustainability project, practicing this set of professional skills in a real-world context.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB	Credit is allowed for only ASB 272 or SOS 272
SOS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	300	Adv Cncpts & Inlgtrd Apprches	Integrates disciplinary contributions to sustainability, teaches advanced concepts in sustainability, and explores methods for identifying sustainability challenges and generating solutions. Focuses on diversity of sustainability research, and integrates specialized approaches in sustainability. Advanced concepts in sustainability, including systems-thinking, complexity, nonlinearity, cascading effects, coupled natural-human systems, governance, future thinking, unintended consequences, normative concerns, transformation, power, participation, and equity.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 100, 110, 111 or PUP 190 with C or better; minimum 45 hours OR Civil Engineering (Sustainable Engineering) BSE major OR Visiting University Student
SOS	309	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
SOS	310	Equity, Justice & Sustainability	Introduces the "social justice" aspects of sustainability science and practice. Sustainability problems are a special class of problems arising from a complex set of issues spread across time, space and institutional scales. These problems can threaten underlying social, economic and ecological systems which are highly intertwined and interdependent. Explore these issues through study of both theory and practice.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student

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SOS	311	Future Thinking and Strategies	Offers a critical introduction to future-oriented theories and methods. Explores anticipation in contemporary society through a series of cases studies that probe real-world sustainability issues and how the future is created and contested. By characterizing and critiquing future-oriented practices across governmental, academic and private sectors, offers a critical perspective on different methodological approaches and the implications of their use.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	314	Basic Energy Science	Explains the concepts of the science of energy for those without a background in engineering. Allows non-engineering students to better grapple with the issues that surround sustainable energy issues. Covers the most common methods of electricity generation as well as renewable technologies and fuels.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SOS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SOS	320	Society and Sustainability	Establishes an understanding of the human, social, and cultural dimensions of sustainability from multi- and interdisciplinary perspectives and at a variety of spatial and temporal scales.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prereq(s) with C or better: Sust or Bus (Sust) mjr; ENG 101, 105 or 107; SOS 110; SOS 111 or PUP OR Non-Sust mjr with 2 of the following courses: SOS 100, SOS 110, SOS 111 or PUP 190, SOS 300; ENG 101, 105 or 107 OR Visiting University Student
SOS	321	Policy & Gov in Sustain Systms	Explores the wide array of political questions that are raised when we view the Earth's environment as an integrated, global system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	322	Intl Development&Sustainability	Historical roots of the idea of development; economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	323	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	324	Sustainable Energy Tech & Sys	Comprehensive survey of current and future energy systems; thermodynamics and energy analysis; environmental, economic and social impacts; resources, technologies and infrastructure for electricity and transportation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	325	Economics of Sustainability	Applies economic principles to the allocation of environmental goods and services, external environmental effects, and environmental public goods; decision-making under uncertainty, adaptation to and mitigation of environmental change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student

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SOS	326	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning, and the provisioning of ecosystem services; use of economic and other social science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	327	Sustainable Food and Farms	Food systems and sustainability. Theories of food security, rural livelihood sustainability, and food sovereignty. Critically examines the social, ecological, economic, and institutional dimensions of the many sustainability challenges associated food system activities (production, processing, distribution, consumption, waste). Students develop a food system framework and apply knowledge to an assessment of the sustainability of one aspect of the local food system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	328	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today. Delves into more specific case studies of attempts by current businesses to become greener and more sustainable, exploring challenges and opportunities that are commonly found as well as how decisions are often made in today's business settings and by whom. Explores alternative enterprise models and examples of businesses that are using the current context to redefine the sustainability and enterprise. Given the emergent nature of this effort, uses timely and real-world examples from current events where possible. Explores and applies an integrated approach to sustainability and enterprise. Readings include popular texts, original research articles and current events.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability or Business (Sustainability) major; SOS 110 and 111 (or PUP 190) with C or better; OR Non-Sustainability major with 2 courses: SOS 100, 110, 111 (PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	330	Sustaining the Commons	Equips students with tools to analyze the conditions in which communities can be successful in managing their common resources such as forest, water and clean air. Students learn the institutional analysis and development framework to evaluate such collective action problems. Applies this approach of analysis to various sustainability topics from irrigation systems and fisheries to climate change and energy systems in urban environments.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; SOS 110; SOS 111; Credit is allowed for only SOS 330 or SOS 394 (Sustaining the Commons) OR Visiting University Student
SOS	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
SOS	344	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
SOS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)

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SOS	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353
SOS	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370
SOS	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101,105 or 107 with C or better; minimum of 45 hours; Credit is allowed for ASB 371, ASB 394 (Inequality and Sustainability), SOS 371 or SOS 394 (Inequality and Sustainability)
SOS	372	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student
SOS	373	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102 or GLG 110 or GPH 111 or SES 121 or Junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373
SOS	374	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone-- in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Preq(s) w/ C or btter: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Creditfor only GLG 327 or SOS 374 OR Visiting University Student
SOS	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; min 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Env Connections in Anthropology) or ASB 494 (Ecological & Environmental Anthropology) OR Visiting University Student

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SOS	380	Entrepre for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N		LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
SOS	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM 385 or SOS 385 OR Visiting University Student
SOS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412
SOS	414	Urban and Environmental Health	Integrates theory and practice of social sciences (including anthropology, demography, and human geography) to understand environmental contexts of health, particularly urban.	N		SEM	Y	OPT	College of Global Futures	School of Sustainability	3	SB	Prerequisite(s): AML 100, ASB 100, 102, 222, 223, ASM 104, SOS 100, 110, 111 with C or better; minimum 45 hours
SOS	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student
SOS	424	Dynamic Modeling	Introduces the development and use of dynamic mathematical models to study social and ecological phenomena.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ASM 424 or BIO 424 or SOS 424 OR Visiting University Student
SOS	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	433	Sustainable Water Use	A clustered learning network on the problem of water scarce regions, includes insights from hydrology, engineering, biology, economics and public policy. May be repeated once for credit.	N		SEM	Y	OPT	College of Global Futures	School of Sustainability	3		
SOS	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3		Pre-requisites: MAT 117 or SOS 101; junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Servcs:People&Nature)

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SOS	435	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N		SEM	N	GNA	College of Global Futures	School of Sustainability	3		Credit is allowed for only SOS 435 or SOS 494 (Energy and Environmental Policy) or SOS 494 (US Energy: Pathways to Sustainability) or SOS 555 or SOS 594 (Energy & Environmental Policy)
SOS	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s) with C or better: AML 253, or SOS 210(or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)
SOS	442	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N		SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
SOS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOS	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
SOS	465	Sustainable Urbanism	History, theory, principles and practice of New Urbanism, including current critiques and counter-critiques of both movements.	N		LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s) with C or better: Sustainability major in a sustainability concentration: SOS 110 or 111 or PUP 190; minimum 45 hours; All other majors: PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student

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SOS	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
SOS	474	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
SOS	475	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
SOS	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)
SOS	480	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Challenges students to explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 110, SOS 111, PUP 190 with C or better if completed; Credit is allowed for only SOS 480 or SOS 494 (Achieving Career Success in Sustainability)
SOS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): School of Sustainability undergraduate student
SOS	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SOS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SOS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	College of Global Futures	School of Sustainability	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SOS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): Sustainability or Business Sustainability major; SOS 110 with C or better; SOS 111 or PUP 190 with C or better. OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111, PUP 190, SOS 300 with C or better OR Visiting University Student

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SOS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	Prerequisite(s): School of Sustainability undergraduate student; ENG 101, 105 or 107 with C or better; minimum 9 hours of SOS upper-division courses
SOS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	SEM	Y	Z1	College of Global Futures	School of Sustainability	1-3		
SOS	501	Foundations of Sustainability	Provides a knowledge base to help students to succeed in the online MSL program. Supports MSL students in the four learning threads of the program, which include communications and sustainability, global context, strategic sustainability and sustainability leadership.	N	LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	502	Tools & Techqs Sustainability	Forthcoming federal legislation and Executive Orders will set new standards for operational efficiencies, energy and water conservation, use of renewable energy sources, and waste minimization in the Army and Army National Guard. Tools and Techniques for Sustainability presents a systems approach to meet those standards by integrating principles of sustainability into existing Army policies, procedures, and reporting systems. The course features the Framework for Sustainable Strategic Development as an organizing framework to analyze systems and develop strategic plans to move toward sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Global Sustainability Leadership certificate student; Pre-or co-requisite: SOS 501
SOS	503	Operational Sustainability	Sustainability is a means to addressing the significant physical, statutory, and regulatory requirements that affect and can encumber the Army's ability to train Soldiers at ranges and maneuver areas across the United States. With hundreds of imperiled species proposed for federal protection in the next few years, threatened and endangered species and sensitive habitat will continue to be a concern. Participants in Operationalizing Sustainability will explore how innovative training practices, improved land and natural resource management practices, and enhanced community relationships can ensure continued access to the land and water assets needed to maintain readiness and can help to 'win hearts and minds.' Proactive approaches to promoting well-being for soldiers, families, civilians, neighbors, and communities, both at installations and downrange, are stressed.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	504	Energy & the Built Environment	Provides practical approaches to applying sustainability principles and practices to public works activities, housing, facilities operations and management, military construction, master planning, and energy management. Presents approaches to implement high-performance sustainable building design, construction, operation and management, maintenance, and deconstruction. Also covers cost-effective, innovative strategies, such as highly reflective and vegetated roofs, to minimize consumption of energy, water, and materials.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	505	Sustainable Military Acq & Log	Sustainable Military Acquisition and Logistics provides practical approaches to applying sustainability principles and practices to all areas of procurement, acquisition, and logistics. Through weapon systems acquisition or procurement of installation goods and services, the Army hopes to drive innovation and promote sustainability while reducing costs. The inclusions of energy and resource efficiency and other sustainability criteria in acquisition and procurement decisions can reduce long-term operation and maintenance costs, conserve resources, and continue to expand innovation throughout the supply chain. This course introduces the application of sustainability principles to procurement and acquisition, transportation, and materiel. The use of life cycle analysis and multicriteria assessment for all 10 classes of supply is also featured significantly in the course.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502

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SOS	508	Pathways to Sustainability	Covers fundamentals of sustainability and sustainability science. Gives beginning graduate students, or prospective graduate students, a broad look at sustainability that prepares them for future coursework in the field. As such, exposes students to concepts, tools and approaches for achieving sustainability outcomes. Explains, in detail, the essential competencies a student of sustainability must attain in order to be appropriately equipped for graduate coursework and/or working in the field. Finally, it examines sustainability leadership; that is, how to move from the what and the why of sustainability challenges to the how to use knowledge and skills to initiate sustainability solutions in various organizations.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	509	Leading Sust Transitions	The vast majority of organizations must significantly change their operational models in order to become sustainable. Leaders must determine how to champion this change, generate momentum, and align internal reward systems to facilitate these transitions. Exposes students to different change models that are applicable to private, public and nonprofit organizations. Introduces a variety of practical cases that serve as a foundation to apply different frameworks that help transition organizations toward being sustainable.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	510	Perspectives on Sustainability	University-wide course covering basic perspectives on sustainability. Uses case studies; faculty and students from engineering, architecture, social sciences, and natural sciences exchange ideas on the major challenges faced in forming a sustainable future at the local, national, and global levels.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student
SOS	511	Adv Sustainability Prob Solvng	Conveys advanced procedures of how to identify and analyze sustainability problems and how to develop solution visions and strategies that can solve and mitigate sustainability problems. Introduces and facilitates training in how to use an integrated framework for sustainability problem solving, which is applicable to all sustainability-related professions. Prepares students for their applied projects on sustainability solutions.	N	LEC	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student
SOS	512	Environmental & Resource Econ	Microeconomic theory applied to problems of the environment and natural resources, principles of nonmarket valuation of the environment, market failures in the provision of environmental goods and services, dynamic management of natural capital stocks, the economics of sustainable development.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	513	Science for Sustainability	Key ideas, concepts and principles of sustainability science that focuses on the dynamic relationship between society and nature. Examines the structure, functioning and dynamics of coupled human-environment systems (CHESs) on local, regional and global scales with a systems perspective. Covers major sustainability science issues including: fundamentals of ecology, energy, agro-food systems, renewable and non-renewable resource systems, economic development and human well-being.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU or SOS 514
SOS	515	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		
SOS	516	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516

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SOS	517	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 517 or SOS 591 (Sustainability and Enterprise)
SOS	518	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
SOS	519	Research Data Management	Provides foundations of sound research data management. Upon completion of the course, students are aware of tools and approaches to effectively manage research data from project inception through publication of both findings and data. Topics include sound data management principles, version control, database concepts, metadata generation, data management plans, research collaboration, and tools for data processing (e.g., spreadsheets, R). This is a hands-on course in which students perform exercises with sample data and/or their own research data.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 519 or SOS 494 (Research Data Management) or SOS 598 (Research Data Management)
SOS	520	Research Design	Provides skills and knowledge that help students design their own research and place it in the context of other disciplines or bodies of work. Not a "methods" class because no specific method is taught in depth. Instead, it is an initial introduction to the research design process and is intended as a platform through which students develop the skills to appreciate and contextualize the approaches taken (and methods used) by others, and during which they can identify the types of specific training they require as they define their own research.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 510; Credit is allowed for only SOS 520 or SOS 598 (Intro Design/Mthds)
SOS	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521
SOS	522	Qualitative Methods for Sustai	Theory and application of qualitative methods to sustainability research and practice. Students define and frame a sustainability problem and apply a range of qualitative methods to it, articulate the strengths and weaknesses of these methods, and have a framework for assessing the appropriate use and evaluation of qualitative methods.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 522 or SOS 591 (Qualitative Methods for Sustainability Problems)
SOS	525	SETS Domains and Interfaces	Guide students in developing an integrated approach and framework for thinking about complex systems in a sustainability context. Presents overviews of content, theories and methods from each of the SETS domains (Social, Ecological and Technical Systems); primarily focuses on how to bring these domains together. Explores the SETS interfaces (intersections) from an integrated perspective and equips students to make those linkages in their research and in subsequent elective courses. Each semester students use a sustainability problem or theme to explore the concepts presented in the course.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N		SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum & Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum & Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum & Env Sys)
SOS	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N		SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
SOS	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N		LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	529	Sem in Environ and Sust Econ	Runs in parallel with the ASU-wide biweekly seminar in Environmental and Resource Economics in that class sessions consist exclusively of these seminar sessions. Research presentations in the seminar are given by graduate students, faculty and visiting speakers.	N		SEM	Y	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	530	Intl Development&Sustainability	Historical roots of the idea of development; economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N		SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	531	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Students explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N		SEM	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 510; Credit is allowed for only SOS 531 or SOS 598 (Achieving Career Success in Sustainability)
SOS	532	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N		SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	533	Sustainable Water	Hydrological, legal, political, and ecological implications of alternative water management strategies; effect of institutional and regulatory frameworks; changes in water demand and supply due to human (population growth, economic changes) and natural (drought, climate change) factors	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	534	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
SOS	536	Food System Sustainability	Broad view of food systems and the sustainability of such systems. Concepts, theory, methods and empirical analyses from diverse disciplines, including agro-ecology, agronomy, political science, agricultural economics, geography, anthropology, and food and nutrition studies. Students choose a theme that is a core concern to food system sustainability and pursue that theme in diverse course activities and through engaging in the broader food system we are embedded in as residents in the Phoenix area. Culminates with a term paper/project that synthesizes experience and knowledge, providing a unique perspective on their role in food systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): degree- or non-degree-seeking graduate student; Credit allowed for only AML, ESS or SOS 540
SOS	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)
SOS	542	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545

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SOS	546	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventoring, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
SOS	547	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
SOS	548	Transformational Sust Entrepre	Familiarizes students with concepts and examples of sustainable entrepreneurship models that are radically different from conventional business models. With a focus on small- and medium-sized enterprises, students learn about structure and function of sustainability-oriented benefit corporations (B Corps), cooperatives, business incubators, impact investment companies and other models. Discusses each model in general and then illustrates through one or more business case studies from around the world. Guest speakers (sustainability entrepreneurs) from Arizona, interdisciplinary peer teaching and learning, online elements, a field visit, and review panels provide a diverse and active learning environment. Open to graduate students from across Arizona State University and has included in the past students from as many as 7 different graduate programs.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SOS 548 or SOS 598 (Transformational Sust Entrepreneurship)
SOS	552	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only CEE 581 or SOS 552
SOS	553	Chngng Human-Nature Relatnshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553

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SOS	555	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree-or nondegree-seeking graduate. Credit for only SOS 435, SOS 494 (Energy & Environ Policy) or SOS 494- US Energy: Pathways-to Sustain or SOS 555 or 594 (US Energy: Pathways to Sustainability) or SOS 594 (Energy & Environmnt Policy)
SOS	557	GSS Sust Research Prep	First part of the project track of the double-degree master's program Global Sustainability Science (GSS). The project track runs from semester 1 to semester 3/4. This course prepares GSS students to develop their research proposal as well as to conduct sustainability research in transnational teams.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	558	GSS Sust Research Project	Takes a solutions-oriented sustainability learning approach in which students work on real-world sustainability solutions and collaborate in small teams coached by instructors. Trains students in the use of an analytical-evaluative framework for sustainability solutions and applies it to different solution efforts.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 558 or SOS 594 (Global Sustainability Research)
SOS	559	GSS Perspectives Seminar	Seminar fulfills four functions: (1) students get familiar with sustainability research areas and faculty across ASU, based on the collective interest of the GSS cohort; (2) students receive training on scientific writing; (3) students have the opportunity to participate in a community of sustainability students that supports exchange, bonding and peer-teaching; and (4) students reflect on and provide feedback on the GSS program and their academic development, as well as receive feedback on their pathway through the program and beyond (career opportunities).	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 557
SOS	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)Pre-req for SOS 567
SOS	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
SOS	571	Sustainable Energy Tech & Sys	Provides a primer on the scientific, technological and social aspects of energy. Includes three core modules: (1) primer on physical, economic and environmental metrics used to measure energy; (2) a review of power systems and electricity generation technologies; and (3) a review of transportation systems and fuel/vehicle technologies. Focuses on energy technology and also incorporates discussions of the human dimensions of energy systems.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	572	Sustainable Energy Transitions	A sustainable future requires a transition away from fossil fuels. This process is far more complex than a simple substitution of fuels. Energy transitions are multifaceted and complex social phenomena, involving economic, technological and political processes that unfold across decades. Delves into these processes for past energy transitions, addressing how energy use evolved throughout history, how it influenced urbanization and socioeconomic development, and how technological change facilitates and constrains energy transitions. What do past energy transitions tell us about how easy or hard it will be to undergo another energy transition?	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	573	Sustainable Energy Policy	Provides a comprehensive survey of energy policies that are shaping the transition to sustainable energy. For context, begins with two views of energy transitions: interdisciplinary socio-technical perspectives and conventional environmental economic perspectives. Next, examines theory and case studies for numerous policies, including carbon pricing, regulatory standards, subsidies, utility regulation, community energy and innovation policies. Lastly, discusses the political drivers and energy system impacts of energy policies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	574	Data Analytics for Sust Energy	Examines the data sources, methodologies and metrics used to measure sustainable energy and explores how they are used to shape public policy and track progress toward sustainability goals. The metrics, which relate to cost, efficiency and environmental impacts, provide the foundation for assessing the relative merits of energy technologies and systems based on a variety of criteria. In addition to quantitatively evaluating a multiplicity of energy sources and systems, the course builds skills in research methods, data analytics and critical thinking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	575	Sust Energy Res Sem	Seminar-based course for sustainable energy Ph.D. students focusing on research skills for interdisciplinary energy research. Taken over two years. Second-year students are expected to take on more of a leadership role in the class and to contribute more developed research presentations in the spring semester. The seminar has a different focus in the fall and spring. In the fall, the course focuses on research methods. In the spring, the course focuses on the process of generating research ideas and writing effective research proposals.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)
SOS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
SOS	578	Writing Papers for Publication	Students produce a draft of a research paper for submission to a peer-reviewed journal. Analysis of exemplary published papers and narrative strategies, along with peer review, support the writing process.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 578 or SOS 598 (Writing Papers for Publication)
SOS	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		
SOS	581	Synthesis for Sustainability	Aimed at students who have already gained training in content areas and are writing their research or projects for publication in peer-reviewed journals or other outlets. Challenges students to link their own research to other disciplines and the broader field of sustainability research.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 510; SOS 520; SOS 525; Corequisite(s): SOS 596 or 599

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SOS	582	Project Management for Sustain	Provides exposure to the tasks and challenges facing project managers, i.e., those people responsible for the vital function of managing complex projects in sustainability in today's environment. Successful project managers have the abilities and skills to simultaneously manage people, schedules, risks, and resources while delivering successful outcomes. This course is a prerequisite for the MSUS culminating experience.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Graduate Sustainability major; SOS 510. Pre- or corequisite: SOS 511
SOS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	589	Community of Scholars	Provides the opportunity to develop new skills, to foster cohort building, to interact with other students and faculty, and to network and build support with the alumni network. Overseen by a faculty member but is primarily directed by the students. All MA or MS students take this course each semester. Although there is an overall structure as demonstrated in the course schedule, the specific content of the course varies each semester depending on the needs and interests of the students.	N	LEC	Y	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		
SOS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	STO	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	596	Capstone: Scientific Paper	MA/MS students are required to devote six hours to conducting research and writing a scientific paper of publishable quality based on the research. The paper topic, the research methodology, and the written format must be approved by the supervisory committee. Students must decide if they will complete the paper on their own or as a group.	N	RSC	Y	GNA	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Sustainability MA or MS student; SOS 510
SOS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		

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SOS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
SOS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		
SOS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		
SOS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		
SPA	101	Elementary Spanish I	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 101 if credit with C or better earned in SPA 102, 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	102	Elementary Spanish II	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): SPA 101 w/ C or better OR Spanish Placement Test score of 250-369; Students may not enroll in SPA 102 if credit w/ C or better earned in SPA 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	110	Intensive Spanish I	First-semester intensive course for students who (1) have never taken Spanish language courses before, or (2) have studied Spanish for one year at the high school level, or (3) have authorization from the Spanish section. This six-hour course meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course focuses on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prereq(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 110 if credit w/ C or better earned in SPA 101 or 102 or 111 or 201 or 202 or 203 or 204 or 210 or 313 or 314 or 315 or 316 or 325 or 412 OR Visiting University Student
SPA	111	Fundamentals of Spanish	Primarily for students with two years of high school Spanish who need review to enter second-year study.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in SPA 111 if credit earned in SPA101, 102, 201, 202, 203, 204, 311, 312, 313, 314, 315, 316, 325, or 412

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SPA	118	Basic Spanish for Health Care	Focuses on helping students develop basic oral Spanish skills that allow them to interact with patients in health care settings. Health care-related vocabulary, simple medical scenarios and basic grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week. Requires no prior knowledge of Spanish.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Placement Test score of 0-369 OR Visiting University Student
SPA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	201	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prereq(s): SPA 102, 110, or 111 with C or better OR Spanish Placement Test score of 370-420; Students may not enroll in SPA 201 if credit with C or better earned in SPA 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	202	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): SPA 201 or 203 with C or better OR Spanish Placement Test with a score of 421-520; Students may not enroll in SPA 202 if credit with C or better earned in SPA 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	203	Intermed Spanish I Bilinguals	In lieu of SPA 201. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a basic conversation in the language. Builds on the skills students already have in order to expand their written and oral proficiency for real communication in a confidence-building environment. Students also explore their cultural heritage and learn about Hispanic cultures in the United States and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	C & G	Prerequisite(s): SPA 102, 110 or 111 w/ C or better OR Espanol Placement test score of 0-369; Students may not enroll in SPA 203 if credit w/ C or better earned in SPA 201, 202, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	204	Intermed Spanish II Bilinguals	For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a conversation in the language. Builds on the Spanish language skills students already have in order to expand their written and oral proficiency in a nurturing environment. Students also learn about Hispanic cultures, traditions and customs in the United States and Latin America and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	C & G	Prerequisite(s): SPA 201 or 203 w/ C or better OR Espanol Placement Test score of 370-520; Students may not enroll in SPA 204 if credit w/ C or better earned in SPA 202, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	210	Intensive Spanish II	Second-semester intensive course for students who have authorization from the Spanish section. This six-hour course that meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course is focused on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): SPA 102 or SPA 111 with B or better OR SPA 110 with C or better; Credit is allowed for only SPA 201 and SPA 202, or SPA 203 and SPA 204, or SPA 210
SPA	218	Inter Spanish for Health Care	Intermediate Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and intermediate grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 118 OR Visiting University Student
SPA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	313	Spanish Conversation and Comp	Designed to develop skill and accuracy in spoken and written Spanish. Required of majors; SPA 313 and 314 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Spanish placement test score of 521+; Students may not enroll in SPA 313 if credit with C or better earned in SPA 314 or SPA 315 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student
SPA	314	Spanish Conversation and Comp	See SPA 313.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 313 or 315 with C or better; Students may not enroll in SPA 314 if they have received a C or better in SPA 412 OR Visiting University Student

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SPA	315	Advanced Spanish I Bilinguals	In lieu of SPA 313. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can speak and understand the language. Students strengthen their written and oral language to use them fluently in professional and academic contexts. Provides a rich cultural context to critically examine issues related to language and Spanish speakers in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Espanol placement test with score of 521+; Student may not enroll in SPA 315 if credit with C or better earned in SPA 313 or SPA 314 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student
SPA	316	Advanced Spanish II Bilinguals	In lieu of SPA 314. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can read and write in the language. Students continue to strengthen their written and oral language to develop advanced skills for use in professional, educational and academic contexts. Provides a dynamic cultural context to critically examine issues related to Hispanic communities, bilingualism and education in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 313 or 315 with C or better; Students may not enroll in SPA 316 if credit with C or better earned in SPA 314 or SPA 412 OR Visiting University Student
SPA	317	Spanish for the Professions	Advanced-level course that serves as an introduction to the Spanish for the Professions minor or certificate. Develops oral and written skills that prepares students to use their Spanish in their careers and/or professional fields of interest. Also covers several cultural points that facilitate effective interaction with Spanish speakers in the professional world and global community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	318	Adv SPA for Health Care Prof	Advanced Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and advanced grammatical structures form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Language Placement Score of 521+ or any upper-division Spanish course OR Visiting University Student
SPA	319	Business Correspondence/Comm	Organization and presentation of clear, effective business communications; vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	325	Intro to Hispanic Literature	Critical approach to and analysis of literary types, including poetry, drama, short story, and novel. Required of all majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 313, 314, 315, 316, 412 or 413 with C or better OR R Visiting University Student
SPA	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SPA	385	Cinema and Culture of Spain	Offers a historical and cultural survey of major films from Spain. Studies key works with a focus on their aesthetic, cultural, political and historical context. Trains students to develop the skills to critically view how films are constructed, how films create meanings and values, and how films are connected to the cultural and historical contexts in which they are created and watched.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only SLC 385 or SPA 385 or FMS 394 (Cinema and Culture of Spain) or SLC 394 (Cinema & Culture of Spain) or SPA 394 (Cinema & Culture of Spain) OR Visiting University Student
SPA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	400	Fundamentals/Span Linguistics	Introduces the discipline and methods of linguistics through the study of Spanish data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Pre- or corequisite(s): SPA 412 or 413; Students who have credit for SPA 400 may not enroll in SPA 539 OR Visiting University Student
SPA	401	SPA Oral Comm. for the Prof	Explores the process of creating and delivering effective public communication in the Spanish language in the context of serving U.S. Latinx community (e.g., government, nonprofit organizations, schools, media). Topics include the cultural conventions of public speaking in Spanish, perceptions of others, the articulation of verbal and nonverbal messages, and techniques of oral presentation and persuasion. This course is practice-oriented and aims at reducing students' anxiety in public presentations, emphasizing research, design and delivery, and trains students on how to evaluate their performance and that of others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SPA	402	Written Comm. for the Prof	Students hone their Spanish literacy (reading and writing) skills in the context of serving U.S. Latino clients in the community (e.g., schools, government agencies, social work settings, medical settings) or reporting on issues of interest to the Hispanic community. Students read and understand documents in Spanish that they would come across in the process of assisting monolingual Spanish-speakers in the public sector or doing research on the Hispanic community (e.g., birth certificates, academic transcripts, medical reports, criminology documents, newspaper or magazine articles). Students gain practice in creating written documents in Spanish that would assist their communication with Latino clients in formal (professional) and informal contexts or that would allow them to report intelligently on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): SPA 314 or 316; Credit is allowed only for SPA 494 (Spanish Written Communication) or SPA 402 OR Visiting University Student
SPA	403	SPA Gram and Stylistics for Pr	Students raise their level of awareness of appropriate grammatical, lexical and stylistic forms to use in their oral and written communication with U.S. Latino clients in formal (professional) and informal contexts in the community (e.g., schools, government agencies, social work settings, medical settings) or for reporting on issues of interest to the Hispanic community. Students enhance their analytical skills by analyzing and comparing Spanish oral and written discourse for genre-appropriate features (stylistics), grammaticality, mechanics, coherence and for a logical flow of ideas in public documents and oral discourses meant for a U.S. Latino audience.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316; Credit is allowed for only SPA 494 (Span Gram & Stylistics for Pro) or SPA 403 OR Visiting University Student
SPA	404	SPA in U.S. Prof. Communities	Students investigate linguistic issues that impact the U.S. Latino community's interaction with professionals (e.g., interaction with service providers in schools, government agencies, social work settings, medical settings; language planning at state and local levels; Spanish spoken in different regions in the U.S.; Spanish language assessment of public sector employees; creation of Spanish for Professional Purposes courses). Students also learn to report on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316; Students who have credit for SPA 494 (Spanish in the Community) may not enroll in SPA 404 OR Visiting University Student
SPA	405	Latino Cult. Persp. for the Pr	Requires students to investigate the Latino cultural perspectives that underlie and affect communication in the professional world. Students come to understand the historical context that has affected the lives of Latino community in the U.S. and take a critical look at values traditionally associated with Latino culture (e.g., the importance of family ties, fatalism, honor, respecting elders, machismo or marianismo), which provide background information for professionals in the public sector who need to serve the needs of the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; SPA 314 or 316; Credit is only for SPA 405 or SPA 494 (Latino/a Cultural Perspect Pro) OR Visiting University Student
SPA	406	Intro. to SPA/ENG Med. Interpr	Provides an introduction to interpretation theory and practice with a specific focus on interpretation for medical fields. Constitutes an academic introduction to the field and does not certify students to be medical interpreters. Students who enroll in this course should have an advanced level of conversational Spanish.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314, SPA 316, or SPA 394 (Introduction to Spanish for the Professions); Credit is allowed for only SPA 406 or SPA 494 (Interpretation for Medical/Law Enforcement Personnel) or SPA 494 (Intro to Spanish/English Medical & Legal Interp) OR Visiting University Student
SPA	412	Adv Conversation/Composition	Oral and written Spanish communication skills, with particular attention given to developing fluency and facility. Required of majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 413 with C or better OR Visiting University Student
SPA	413	Spanish Grammar in Context	Intensive analysis of the Spanish language. Required of teaching majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 412 with C or better OR Visiting University Student
SPA	414	Spanish for Sustainability	Provides language skills to engage in meaningful communication and official transactions in sustainability and environmental studies with an intermediate to high level of Spanish speaking, reading and writing competence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 314 or 316 with C or better; Credit is allowed for only SPA 394 (Spanish for Sustainability) or SPA 414
SPA	417	The Sounds of Spanish	Analyzes the speech sounds of the Spanish language, including articulatory and acoustic phonetics as well as phonology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS or SB	Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student
SPA	418	Architecture of Spanish	Introduces the syntax of the Spanish language by analyzing different word categories, their groupings in phrases, and the structure of both simple and complex sentences. Advanced course that requires some previous knowledge of basic structures of the language and their internal structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student

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SPA	419	Spanish Around the World	Spanish dialectology and variationist/quantitative sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS & C	Prerequisite(s): SPA 400 with C or better OR Visiting University Student
SPA	420	Applied Spanish Linguistics	Applies linguistic principles to the teaching of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; SLC 201 or SPA 400 with C or better OR Visiting University Student
SPA	421	Spanish in the Southwest	Discussion and linguistic analysis of Southwest Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 412 with C or better
SPA	425	Understanding Spain: Lit&Cultr	Surveys Spanish literature from its beginning to 1700.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; SPA 325 OR Visiting University Student
SPA	426	Lit & Society in Modern Spain	Surveys Spanish literature from 1700 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	427	Colonial&Postcol Latin Am Lit	Surveys major works, figures, and movements from Colonial period to 1880.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	428	Found Texts Latin Am Lit Mod	Surveys major works, figures, and movements from 1880 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	429	Writing Mexico: Major Texts	Selected readings from pre-Columbian writers/poets (e.g., Macuilxochitl) through the novel of the Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	434	Drama of the Golden Age	Dramatic works of Lope de Vega, Calderon de la Barca, and their contemporaries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325
SPA	440	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SPA	441	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441
SPA	442	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SPA	443	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student
SPA	444	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SPA	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
SPA	456	20th-Cen Spanish Amer Fiction	Major works and movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325

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SPA	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SPA	464	Jaitón Works in Chicano/a Lit	Representative literature in Spanish and English by Mexican Americans, emphasizing sociocultural as well as literary values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & C	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	470	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
SPA	471	Indohispanomexicano Civilizatn	Political, intellectual, social, economic, and artistic development of the Spanish-speaking people of the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316 OR Visiting University Student
SPA	472	Latin Am Society:5 CaseStudies	Growth of the institutions and cultures of Spanish American people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): SPA 314 or 316
SPA	473	Old&New Spaniard:Cul&Civ Spain	Political, intellectual, social, economic, and artistic development of the Spanish nation from its origin to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	474	Revolutr Mexico&Postmdrn Revs	Examines diverse aspects of Mexican culture since the 1910 Revolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316 OR Visiting University Student
SPA	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
SPA	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
SPA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	485	Chicano/a Short Story:Espnglsh	Critical study of contemporary short stories by Mexican American authors, with emphasis on their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	486	Chicano/a Novel:Ultima,Rafa	Social and literary contexts of representative novelists, emphasizing their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325 OR Visiting University Student
SPA	487	Chicano/a Drama: Pachucos	Representative dramatic works, with emphasis on the history and development of this genre from its regional origins to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 325
SPA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SPA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SPA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		

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SPA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SPA	520	Preparing Professional Careers	Professional training of graduate students who pursue an academic job. Guides these students through their career and provides the tools they need to navigate their new and demanding academic life, not only as current students but also as future faculty. Among other topics, covers the following: research, publishing, surfing the Internet and the library for articles and books, bibliographical matters, conferences and presentations, professional ethics, choosing a dissertation director, writing and publishing the dissertation, first job search, differences among institutions, cover letters, CVs, tenure issues, and balance of personal and professional life. Explores all the practicalities of the academic profession to direct students to the right track from the first day of graduate school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	536	Generation of 1898	Works of Unamuno, Baroja, Azorín, and their contemporaries, studied against the ideological background of the turn of century in Spain.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	537	Women in Spanish Literature	Major female writers and their texts from Spanish literature (María de Zayas, Ángela Grassi, Concepción Arenal, Emilia Pardo Bazán, Carmen Laforet, Paloma Pedrero) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	538	Chicana Writers	Major female figures and works in Spanish or translation by contemporary writers (Zamora, Castillo, Corpi, Anzaldúa, L.D. Cervantes, D. Chávez, Duarte, Cisneros) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	540	Hist of the Spanish Language	Analyzes and discusses the development of Spanish from Vulgar Latin to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	541	Spanish Language in America	Discusses and analyzes various regional and social varieties of Spanish in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	542	Studies in the Spanish/SW	Examines bilingualism and the social and regional dialects of Spanish in the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	543	Structure of Spanish	Analyzes and discusses data on selected topics in Spanish morphology, semantics, and syntax.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	544	Spanish Phonology	Surveys problems of Spanish phonology within the context of recent phonological theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545
SPA	546	Heritage Language Pedagogy	Sociolinguistic and pedagogical issues around the teaching and learning of heritage languages. Through a close examination of seminal articles in the field of heritage language pedagogy and research, students gain an understanding of the issues that concern these students and the teaching of this population. Defines the field, describes heritage language learners, and discusses the goals and sociolinguistic concerns of HL instruction. Also reviews the most appropriate teaching methodologies and principles for the heritage language classroom, especially in relation to literacy development. Contains a practical component that includes observations together with lesson plan and material development to prepare future teachers for effective classroom experiences and/or language program development. Course requirements include critical essays, online discussions, class observations, lesson plans and a research/applied paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 546 or SPA 546 or SPA 598 (Heritage Language Pedagogy)
SPA	547	Applied Linguist Online Learn	Technology has changed the way we teach and learn languages. Examines how online language learning is informed by research and theory; explores how different tools and environments can support online language learning. Familiarizes students with research methods and tools used to examine online language learning. Participants either design and develop the instructional materials for an online course of their choice or design and conduct a research project.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 547 or SPA 547 or SLC 598 (Topics in Applied Linguistics: Online Learning) or SPA 598 (Topics in Applied Linguistics: Online Learning)

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SPA	550	Spanish for Reading Knowledge	Teaches nonspeakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Emphasizes developing reading and translation skills through exposure to a variety of texts (journalistic, historical, literary and scientific). Requires no previous knowledge of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPA 550 or SPA 598 (Spanish for Reading Knowledge)
SPA	552	Chicano/a Film	Major figures and films by contemporary filmmakers (Sylvia Morales, Cheech Marin, Gregory Nava, Lourdes Portillo, Roberto Rodríguez, Evelina Fernández) interpreted via critical film theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	553	Latin Am Fem Film	Examines Latin American feminist films in the context of contemporary Latin American culture; films viewed analyzed as casework examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only SPA 553 or 583 (Feminist Filmmaking)
SPA	566	Generation of 1927	Major poets of the Generation of 1927, with emphasis on works of Lorca, Guillen, Salinas, and Aleixandre.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	567	Contemporary Spanish Novel	Major works of post-Civil War Spanish fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	568	Cervantes	Extensive analysis of the prose and theater of Cervantes as a key figure of the Spanish Golden Age.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	569	Studies in Spanish Film	Examines major figures and films in Spanish cinema. Critically interprets films through current film theory, history, and critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	572	Spanish American Drama	Major contributions of Spanish American drama, with emphasis on contemporary dramatists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	573	Spanish American Essay	Major works of the essay, within the framework of intellectual history and literary movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	576	Contemp Span Amer Short Story	Principal short stories of the <i>Nueva Narrativa Hispanoamericana</i> within the context of contemporary theories of the narrative.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	577	Regional Spanish American Lit	Figures and works of major national (Peru, Argentina, Chile, and Mexico) and regional (Caribbean) literatures. Topics offered on a rotating basis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	582	Studies in Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	586	Chicano/a Novel	Major novels and figures in Spanish or translation by contemporary Chicano novelists (Hinojosa-S., Méndez, Morales, Cota-Cárdenas, Cisneros) interpreted via current narrative theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	587	Chicano/a Drama	Major works of Chicano/a drama, with emphasis on contemporary playwrights (Valdez, Portillo-T., Morton, Moraga, Gómez-Peña) interpreted via current critical drama theory and other methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	588	Chicano/a Essay	Major figures and essays in Spanish or translation by contemporary essayists (Rendón, Anzaldúa, Villanueva, Rodríguez, Mora, Stavans) interpreted via current critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SPA	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stndt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
SPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SPA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPE	222	Orient to Ed Exceptional Child	Introduces legal aspects of special education and community services to support students with disabilities. Also examines the nature and characteristics of students with disabilities as defined by federal law. Introduces high-leverage practices (HLPs) in special education to promote effective, inclusive practices for K-12 students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB & C	
SPE	317	Spec Educ for Cultural/Linguist	General issues and practical applications regarding the education of culturally and linguistically diverse students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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SPE	321	Classroom and SPE Assessment	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs and monitor progress of students with disabilities. Includes academic, language disorders and transition assessments. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
SPE	323	Behavioral Strategies	Focuses on behavior analysis and classroom management intervention and consultation strategies in general education and special education settings.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
SPE	325	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
SPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): minimum 45 hours
SPE	396	Clinical Experience I	Provides opportunities for students to engage as a teacher and learner in a variety of classroom settings that serve students with visual impairments. Fulfills two (2) of six (6) required semester hours of practicum in Special Education: Visual Impairments. Develops knowledge and skills for effective implementation of strategies for teaching skills and adaptations specific to visual impairments. Introduces the TAP instructional rubric, the college professionalism rubric, backwards design of a direct instruction lesson plan, and strategies for co-teaching.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
SPE	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
SPE	400	Language Dev & Disorders	Language development course for the general education or special education teacher candidate. Covers how language develops and disorders from infancy through adulthood. Topics include the receptive and expressive language (prelinguistic communication, phonology, morphology, syntax, semantics, pragmatics) in speaking, listening, reading and writing for infants through adults with and without related disabilities. Students also understand the principles of prevention, assessment and intervention within the school environment and across multiple ecologies through transdisciplinary practices.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
SPE	410	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
SPE	411	Family Involvemnt & Reg Issues	Emphasizes family and school relations through effective communication and state and federal regulations impacting services for students with disabilities.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR enrolled in Early Childhood minor OR Visiting University Student

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SPE	416	Quality Prac/Collaborative CIs	Develops skills, strategies, and a knowledge base for preservice teachers in building collaborative partnerships with special educators.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): admission to the Professional Program
SPE	417	Inclusion Practices/Second Lvl	Applies curricular practice and how preservice teachers work with students with special needs in middle and secondary levels.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	423	Cross-Categorical Spec Ed I	Focuses on implementing research-based strategies in reading, language arts, math and language for students with mild/moderate special needs. Includes using data from all stakeholders in the development of the IEP, making instructional decisions using assessment data, monitoring student progress and developing lesson plans.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	424	Cross-Categorical Spec Ed II	Emphasizing pedagogy, content knowledge and evidence-based strategies, focuses on assessment, curriculum development and instruction across content areas (e.g., reading, language, writing, mathematics, science, social studies) for students with low-incidence disabilities or intensive support needs (e.g., significant intellectual disabilities, multiple disabilities, orthopedic impairments [OI], and other health impairments [OHI]). Particular focus includes access to the general curriculum, inclusion, instructional and assistive technologies, communication and language development and disorders, and transition for this population.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	430	Collaborative Teaching	Methods and issues in cooperative teaching for students with disabilities in the general education classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105 or 107 with C or better
SPE	431	Collaborative Teaching Methods	Methods and issues in cooperative teaching for special education students in general education classrooms.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	441	Reading and Writing Braille	Provides future teachers of students with visual impairments with the knowledge and skills for reading and writing braille that enable mastery of the literacy braille code. Students produce braille using a variety of methods, research resources for braille materials and electronic devices that support the braille teacher and student, and explore methods for teaching braille to readers of all ages.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	442	Teaching Methods Students w/VI	Provides a foundation for understanding the education of students with visual impairments (VI) with past and current practices and philosophies situated in the context of special education. Begins with a brief history of VI education, legislation and educational philosophies, including the prevalence of visual impairment in society and an overview of the visual system. Prospective teachers of students with VI learn to assess, plan and implement strategies that support students in accessing academic content, career objectives and activities of everyday living across the lifespan.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	443	Foundn Instructn Students w/VI	Principles of curricular and instructional design for children with visual impairments with respect to licensure (pre-K-12). Emphasizes selecting, developing and adapting curricular and instructional units/themes/lessons so that they are appropriate for children within the licensure range. Students demonstrate knowledge of basic terminology related to the function of the human vision system and the implications for teaching and learning. Also discusses adaptations and modifications, especially of the general education curriculum.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	444	Diag Assmt Pro fr Vis Impaired	Future teachers of the visually impaired learn to interpret medical records, conduct assessment, establish meaningful and measurable goals for an ISFP or IEP, and make recommendations for classroom accommodations, modifications and goals. Examines the impact of strategies with dual sensory loss and deaf-blindness for students in the classroom. Following an overview of the senses of hearing, touch, taste, smell as well as the vestibular and proprioceptive senses, the course examines how each sensory system supports access to information.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours

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SPE	445	Orientation & Mobility for TVIs	Leads future teachers of the visually impaired (TVIs) to become familiar with the philosophy and history of orientation and mobility. Explores the skills taught in orientation and mobility and experiences techniques taught to demonstrate those skills including concepts, protective techniques, sighted guide, pre-cane techniques, guide dogs and electronic aids in order to be a confident and efficient traveler. Emphasizes early concept development and mobility for students with visual impairment and multiple disabilities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	446	Modes of Communication	Explores multimodal teaching methods (i.e., braille, typing, script, note-taking, sound reproduction systems, listening skills, electronic reading devices and calculation) to support students who are blind or have visual impairments with communication. Students participate in laboratory experiences, so students can develop and demonstrate competencies in the skill of reading, producing and teaching braille as well as the skill of identifying and using assistive technology.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): SPE 441
SPE	447	Std Tch Teachers Vis Impaired	Student teaching in preK-12 school classrooms is a synthesized experience in curriculum, instruction and classroom management. Successful completion fulfills six (6) required semester hours of education courses, including practicum in grades prekindergarten-12, which teach knowledge and skills such as learning theory, classroom management, methods and assessment, as required by the Standard Visually Impaired Special Education Certificate.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): minimum 45 hours
SPE	478	Student Teaching: SPE K-12	Student teaching in special education classrooms grades K-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	8		Prerequisite(s): admission to the Professional Program
SPE	496	Clinical Experience III	Applies course content in an instructional setting serving students with visual impairments. Emphasizes observation, pupil management, assessment, planning and delivering instruction to students with visual impairments. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
SPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
SPE	502	LangCommunication MethodAssess	Theory and practice of language and communication development from infancy through adolescence. Explores language and communication disorders in children with and without disabilities and children who are culturally linguistically diverse speakers. Includes phonological processing, syntactical rules and pragmatics/social communication embedded in culture; and how to use formal and informal assessment data for intervention and differentiation of instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	503	Collaboration & Consultation	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. Explores connections in depth with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 503 or SPE 540 or SPE 541
SPE	504	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
SPE	505	Collaborating Effective Planning	Provides an introduction to transition planning for students with disabilities, focusing on person-centered planning and collaborative practices with families and service providers. Emphasizes understanding employment, self-determination, community participation, collaborative practices, family systems and person-centered planning. Introduces and applies a family systems perspective to understanding of families of all children, including infants and toddlers, adolescents and adults with disabilities. Emphasizes understanding diversity in values, belief and traditions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	506	Assessmnt Planning Instrc Strat	Prepares teachers with the skills to effectively work with children and young adults with moderate to severe/profound disabilities (i.e., intensive support needs). Topics focus on assessment, curriculum planning and instructional strategies using evidence-based practices. Activities include direct observation and assessment techniques in inclusive environments; designing curriculum within multiple contexts with a focus on access to the general education in inclusive environments; selecting and implementing behavioral, communicative and instructional strategies; collaborative practices; and supporting across the educational lifespan of students. Students participate in class sessions two hours per week and engage in field experiences 6 to 8 hours per week in educational environments with students with intensive support needs. Emphasizes current research-based evidence to support students with intensive support needs.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	507	Augmentative&Alternative Comm	Focuses on issues and strategies for teaching communication to individuals with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Discusses specific assessment and intervention strategies as they relate to augmentative and alternative communication systems.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	508	Educational Foundations Severe	Provides an overview of the etiological nature of individuals with moderate to severe disabilities (intellectual disabilities, multiple disabilities, sensory impairment and physical disabilities); characteristics of this population; and the associated support needs across the lifespan. Topics focus on the historical and legal contexts that influence services for this population; supports-based assessment and instruction; and key issues related to self-determination, person-centered planning in school contexts for children, youth and adults with moderate to severe disabilities.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	509	Positive Behavior Supports	Knowledge and skills to assess, implement and evaluate positive behavior supports for students with intensive support needs (moderate to severe/profound intellectual disability, autism spectrum disorder, multiple disabilities), terminology reflective of a support-based model of disability rather than a deficits-based model. Students learn and apply the foundations of positive behavior supports, understanding the function of behavior and developing replacement behaviors, and implementing plans from a person-centered perspective that reflects the cultural needs of individuals and their families while drawing on interdisciplinary team members' expertise.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	510	Assistive Technology Supports	Focuses on specialized health care needs, policies and procedures for working with students with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Provides an overview of methods for accommodating students including task or environmental modifications, assistive technology and adaptive equipment options.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	512	Indiv/Intellectual Disability	Etiology, diagnosis and management of individuals with intellectual disability. Current trends in prevention, programming and teacher preparation.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only SPE 312 or SPE 512
SPE	513	Instr Learn Exceptionalities 1	Focuses on methods, instruction and assessment in special education for K-12 students with mild and moderate disabilities, emphasizing assessment terminology, procedures and ethical principles, reading, writing, behavior and social-emotional learning. Also focuses on collaboration, co-teaching and partnering with families. Builds a foundation for methods and assessment in special education to build toward the subsequent course work.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	520	Verbal Behavior	Based on the theories of B. F. Skinner, this course increases student knowledge and understanding of the role of verbal behavior in learning and communication. Students gain experience recognizing the function of communication, applying standardized assessment measures to assess and develop targeted interventions to address communication challenges.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	521	Found Autism Spectrum Disrdrs	Increases the understanding of characteristics of individuals with autism.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	522	Instr Learn Exceptionalities 2	Focuses on methods, instruction and assessment in special education for K-12 students with mild and moderate disabilities, emphasizing mathematics, writing, content area learning, social skills, transition, strategy instruction, and self-determination. Extends and builds upon the methods and assessment concepts in previous course work.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): SPE 513
SPE	524	Effective Classroom Behav Mgmt	Addresses behavioral management techniques for children with special needs, including the organization and delivery of instruction and functional behavioral analysis.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	525	Measurement and Exp Design	Examines data collection techniques, design methodologies, visual analysis and interpretation approaches. Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	526	Concepts and Principles of ABA	Provides an overview of and introduction to the basic concepts and principles of applied behavior analysis. Students gain understanding of behavior analytic process and terminology, defining and providing examples of concepts and principles and applying to a range of situations. Applied behavior analysis is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree, and to demonstrate that the interventions employed are responsible for the improvement in behavior.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	527	Behavior Analytic Assessment	Focuses on assessment procedures of applied behavior analysis. Students learn to determine the need for behavior-analytic services; identify, design and prioritize socially significant behavior change goals; conduct assessments of relevant skill strengths and deficits; conduct preference assessments; describe the common functions of problem behavior; conduct a descriptive assessment of problem behavior; conduct a functional analysis of problem behavior and interpret functional assessment data. Critically evaluates environmental variables in order to make informed recommendations for behavior change.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	531	Meth App Beh Analy for Ex Pop	Methods based on the principles and concepts of applied behavior analysis. Students learn to operationally define problem behavior, conduct functional behavior assessment and generate recommendations for the development of behavior analytic interventions. Students gain knowledge and understanding of specific scientifically valid behavior change procedures. Discusses and applies their corresponding literature base.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	534	Assessment and Evaluation	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs, and monitor progress of students with disabilities. Includes assessments in academic areas, language disorders and transition. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	535	Curricula, Methods, Tech/Adapt	Develops strategies for effective adaptation of special education and general education curriculum through use of technology. Includes methods for addressing special needs in reading, math and language disorders.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	536	Characteristics/Chldrn/Behavrl	Variables contributing to behavior patterns of behaviorally disordered children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	538	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538
SPE	540	Family-Centered Practices	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. In-depth exploration of connections with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	541	Consultation Frameworks/Issues	Models, activities, and roles of educational consultants working with families, professionals, and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	548	Cross-Categorical Foundations	Foundations course compares cognitive, motor, and affective developmental and educational issues across LD, ED, MR, and PI/OHI.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	555	Inclusive Pract Diverse Learn	Adapting instruction and assessment to meet the needs of all learners in inclusive settings. Includes the creation of plans to address challenging classroom behaviors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	556	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556
SPE	558	EPS Found Law Assess Ethical	Provides special education professionals with knowledge and skills to improve the academic achievement and functional performance of children with disabilities, including the use of scientifically based instructional practices, to the maximum extent possible.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	559	Methods for Tching Dvrse Lrn	Apprentice teachers select a specific population, based on placement (mild to moderate or moderate to severe), for individualized investigation. Utilizes practical strategies for curriculum development and IEP implementation. Gains a deeper understanding of their practice by analyzing and reflecting for the purposes of monitoring and adjusting instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: MEd Special Education (Teacher Certification) major
SPE	560	Behavior Change Procedures	Examines scientifically validated behavior change procedures. Students gain experience critically analyzing and selecting interventions informed by measurement, data display and interpretation. Students gain experience in application of knowledge by conducting a behavior change project, analyzing, interpreting and presenting results.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	561	Characteristics/Diagnosis/Lrn	Theories related to learning disabilities, including identification and characteristics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	562	Personnel Sprvns OBM in Ed	Focuses on the use of data informed procedures for training, management, supervision and support of behavior health practitioners in educational settings. Students gain experience and develop expertise with organizational behavior management (OBM) techniques.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	563	Phil Foundation ABA in Ed	Reviews the history and foundations of the field of applied behavior analysis in educational settings. Interprets the impact and utility of radical behaviorism and experimental analysis of behavior in classrooms, clinics, homes and community settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	564	Cntrvrsl Therapies Sci in Ed	Investigates the role and impact of fads, pseudoscience, false beliefs, dubious assumptions and spurious reasoning on treatment decisions of professionals, politicians, educators, parents and clients in educational settings. Interprets philosophical positions and traditions that influence and inform consumers in selection of treatments. Examines and designs responsible evaluation and strategies for effective communication.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	565	Behavior Change Systems	Focuses on applied behavior analysis-based behavior change systems and procedures. Students learn to identify, implement, manage and supervise interventions based on fundamental elements of behavior change. Addresses behavior change considerations, including ethical use of behavior change systems and ongoing data collection for fidelity and progress monitoring.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate
SPE	566	Appl Beh Analysis Inklus Set	Examines definitions, characteristics, assumptions and basic principles of applied behavior analysis. Describes and applies fundamental elements of behavior change, including reinforcement schedules, modeling, shaping, chaining and other behavior change procedures. Activities center on the design and delivery of social skill interventions with individuals with special needs in inclusive settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	567	Ethics Applied Behav Analysis	Addresses knowledge and application of the Behavior Analyst Certification Board Guidelines for Responsible Conduct for Behavior Analysts. Examines and resolves ethical dilemmas which may be encountered by behavior analysts. Addresses roles and responsibilities of members of a multidisciplinary treatment team comprised of educators, behavior analysts, parents, learners and other professionals. Students conduct risk-benefit analysis of evidence-based treatment approaches and develop declarations of professional practices and procedures for behavior analysts.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	568	Behavior Assessment	Focuses on critical aspects of applied behavior analysis, experimental design and the identification and implementation of effective assessment methodologies. Addresses client-centered responsibilities of the behavior analyst including problem identification, measurement, assessment, data collection and analysis. Students gain experience conducting functional behavior assessment and stimulus preference assessment to inform intervention design. Emphasizes measuring and ensuring treatment integrity.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate. Credit is allowed for only SPE 568 or SPE 598 (Behavioral Assessment)
SPE	569	Res Meth Applied Behv Analysis	Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); SPE 531; SPE 566; Credit is allowed for only SPE 569 or SPE 598 (Research Methods Applied Behavioral Analysis)
SPE	570	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
SPE	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
SPE	572	Testing&Measurement Gifted Ed	Covers current and historical aspects of testing and measurement in the field of gifted education. Topics include: the history and purposes of IQ testing, definitions of various types of tests, purposes of testing for gifted education services, ability tests and achievement measures, how tests are used in Arizona in programs for gifted learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 572 or SPE 591 (Testing&Measurement Gifted Ed)

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SPE	573	Diff Instruction Gifted Child	Explores the design of differentiated curriculum and instruction for gifted learners in elementary and secondary education	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only SPE 573 or 591 (Diff Curriculum Gifted Child)
SPE	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
SPE	575	Survey, Issues, & Foundations	Explores the foundations of special education through characteristics and eligibility of exceptional students. Analyzes historical, political, social, and legal factors impacting special education services for exceptional students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	576	Professional Experience III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
SPE	578	Student Teaching SPE Dual Cert	This 8-week capstone residency experience meets the SPE requirement for dual certification in SPE and EED. Synthesized experience in curriculum, instruction and classroom management. Builds upon previous professional experiences to extend learning in a classroom setting and to obtain practice and feedback to continuously improve educator knowledge and skills.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
SPE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	585	Creativity: R&D in Gifted Ed	Explores nature of creativity in terms of philosophical underpinnings, empirical evidence, human development, self-actualization, and the ecology surrounding the creative event.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	586	Advising the Gifted Learner	Focuses on educational planning and guidance, social and emotional development, and family problem solving regarding needs of gifted children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	587	Special Populations/Gifted Ed	In-depth analysis of major controversies in educating the gifted, including nature/nurture, the role of mental tests, and sex differences.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	588	The Gifted Learner	Gifted children's characteristics, identification, needs, school and home environments, definitions, and misunderstandings. Research by Pressey, Stanley, Terman, and others.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	589	Gifted Education Programming	Approaches for designing and implementing optimal and comprehensive gifted education services in a broad range of educational settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
SPE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	597	Capstone	Applies theoretical and practical information presented through coursework in a real-world setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Special Education Doctoral student
SPF	301	Culture and Schooling	For the professional teacher preparation program. Overview of the cultural, social, and political milieus in which formal schooling takes place in the United States.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SPF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
SPF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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SPF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SPF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Pre-requisite: ENG 101, 105, 107, or ENG 111; Credit is allowed for only ASB or SSH 300
SSH	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
SSH	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student
SSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	402	Commnty Partnrshps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student
SSH	403	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): ASB 100 or SSH 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 443 or SSH 403 OR Visiting University Student
SSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
SSP	242	Res Trng Foundation Performanc	Provides knowledge and hands-on skills in executing and teaching the foundational resistance training movements required to be successful in performance training programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
SSP	275	Exper Seminar Sports Science	Experiential course designed to introduce students to the various career opportunities in the field of sports performance training or sports science. Students meet on a weekly basis to gain further insight into different ways to get involved in the field and gain the valuable experience that is required for their future success. Guest speakers introduce new ideas, training concepts and new ways students can get involved. Includes discussion groups and presentations from students to further explain the various positions and experiences they have had allowing the class to open their minds to different areas. This course meets the requirements of early experiential experience required to receive certification from the National Strength and Conditioning Association as a Certified Strength and Conditioning Specialist.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101; Pre- or corequisite(s): SSP 242 OR Visiting University Student
SSP	315	Exercise and Sport Physiology	Develops an understanding of the body's abilities to perform various types and intensities of exercise and sport, to adapt to stressful situations, and to improve its physiological capacities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; Corequisite(s): SSP 316 (EXW 316) OR Visiting University Student
SSP	316	Exercise and Sport Phys Lab	Allows for exploration and application of exercise physiology theories in controlled experiments measuring performance capacities.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): BIO 160 with C or better or both BIO 201 and 202 with C or better; Pre- or corequisite(s): SSP 315 (EXW 315) OR Visiting University Student

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SSP	320	Coach Lead, Perf Team and Mgt	Discusses leadership skill development and team building related to performance staff and athletes. Details specific concerns related to management of training facilities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is only allowed for EXW 320 or SSP 320 OR Visiting University Student
SSP	325	Appl Anat & Biomech Sport Mvmt	Provides a detailed introduction into the mechanics of motion and the underlying anatomy that provides the structure for that motion. Students learn to appreciate the consequences of external forces, how the body generates internal forces to maintain position, the consequences on the structure of handling the forces and an applied knowledge of how the result of these forces is motion. Emphasizes applying biomechanical principles to analysis of human performance and understanding the background for movement optimization science and the reduction of injury potential through movement correction.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): BIO 201 with C or better; KIN 101 with C or better OR Visiting University Student
SSP	423	Performance Test & Technology	A detailed presentation of laboratory and field-based methods used to evaluate athletic performance and measure effectiveness and progress of sports performance training routines. Students are shown the skills to evaluate the most effective tools, techniques and technologies available to carry out individual and team based assessments. Students are exposed to the best practices of performance testing and the wide range of available methods to determine different performance measures, allowing them to make the most effective and cost-efficient choice when asked to make those decisions in the field.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 315 (EXW 315); SSP 316 (EXW 316); SSP 325 OR Visiting University Student
SSP	434	Plyometrics Movement&Condition	Applied course providing students with experience and knowledge in plyometric exercise, sprint technique, sports movement skills and sport conditioning program design. Information applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced speed, agility and conditioning exercises and programs for varying individuals and teams.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 325; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 534 or SSP 434 (or EXW 434) OR Visiting University Student
SSP	460	Resistance Training App/Theory	Covers advanced resistance training and performance programming methodologies. Applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced resistance training exercises and programs for varying individuals and teams. Addresses a significant number of core competencies identified for the NSCA Certified Strength and Conditioning Specialist (CSCS) examination.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 215, 216, or SSP 242; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 530 or EXW 598 (Resistance Training Application and Theory) or SSP 460 (or EXW 460) OR Visiting University Student
SSP	461	Perform Prog Comp & Periodiztn	Culminating course allows students to construct complete performance training programs using all of the performance activity components (power, conditioning and strength) learned throughout the degree program. Students select how to apply correct periodization models to their program designs based on athlete or client needs and experience.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 434; SSP 460; Credit is allowed for only SSP 461 or EXW 494 (Plyometrics & Power Transfer Exercise) or EXW 598 (Plyometrics and Power Training) or EXW 598 (Plyometrics and Power Transfer Exercise) OR Visiting University
SSP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): SSP 242; SSP 275; SSP 434
SSP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SSP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		

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SSP	501	Data Collection and Analysis	Discusses the use of evidence-based practice and scientific principles to assess athletes, analyze the results and interpret the data for application. Provides a comprehensive understanding of the theories and methods which provide the framework for implementing strength and conditioning programs. Explores research methods and examines ethical and cross-cultural considerations when collecting testing data.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	530	Adv Performance Programming	Covers the application of periodization principles to the design of a comprehensive performance-based training program including appropriate assessment and recovery strategies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 530; KIN 540
SSP	534	Measurement in Sport & Fitness	Students perform different laboratory and clinical techniques to analyze human movement utilizing various measurement tools in a biomechanical or physiological assessment. Delivered as two components: lecture and laboratory. The lecture component serves to discuss the theory behind quantitative analysis techniques, proper equipment usage, data processing techniques and the connection to exercise science principles. Laboratories allow students to gain hands-on experience with advanced equipment and technologies common in the sports performance field. Additionally, students make recommendations and assign exercises to correct impaired movement when appropriate.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 540
SSP	560	Performance Sports Coaching	Discusses the use of evidence-based practice and scientific principles to design the optimal training session for athletes. Application of lessons learned from motor learning, skill acquisition and sport psychology shift the focus of training sessions to learning rather than performance outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Strength and Conditioning MS student
SSP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
SST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
SST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		

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SST	301	Research Methods-American Comm	Provides a foundation in the concepts and tools of community-based participatory research for studying American cultures, including how to identify and utilize appropriate quantitative and qualitative research methods for working with diverse American communities. Students learn to take part in participant observation, conduct surveys, interviews and focus groups as well as explore existing data sets to conduct secondary data analysis and utilize visual and narrative means of data collection and presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170 or completion of MA General Studies course; minimum 2.00 GPA; minimum 24 hours
SST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
SST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
SST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	501	Fnds of SocialTransformation	Introduces the foundations of social transformation and social change. Looks at social transformation through an interdisciplinary lens and explores the connections between the objective and subjective factors that enable or inhibit social transformation in different contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	510	Social and Cultural Pedagogy	Engages students with the academic literature and scholarly debates on social and cultural pedagogy, reviews practical lessons from the field, and provides an overview of different areas of intervention and professional practice. Considers the historical, local, and international dimensions of social and cultural pedagogy, illustrating them with selected case studies. Encourages the study of social and cultural pedagogy using a critical and interdisciplinary perspective.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	520	Learning Tech-Native Education	As the Internet and digital devices become more accessible in Indian country, educators are increasingly developing digital systems for formal and informal learning environments. From distance learning systems to digital language learning and apps for informal learning, this course reviews types of educational technologies in different American Indian and Indigenous educational settings, highlighting the relationship among technical affordances, pedagogical approaches, and social impacts. Students (1) understand how technical affordances shape learning in face-to-face and online environments; (2) describe the relationship between digital learning tools and curricular and programmatic objectives; and (3) describe and propose the basic limitations and possibilities of types of educational technologies for specific American Indian and Indigenous educational settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	530	Culture and Education	Examines the relationship between local cultures, local knowledge and education. Drawing from comparative and international education and paying particular attention to the world's most marginalized populations—Indigenous peoples. Additionally, explores historical trajectories of education, the global expansion of schooling, state and international education and language policies, as well as notions of local/Indigenous resistance, agency, response and educational innovation. Three major sections comprise the course: (1) patterns in education and language policy for historically underrepresented and underserved populations; (2) the role of families, communities and local and place-based pedagogies; and (3) alternative models of education toward social transformation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SST 530 or SST 591 (Culture and Education)
SST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		

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SST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
SST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	604	Sexuality Studies	Examines the social construction of sexuality, sexual identities and cultures, including LGBT people and other non-normative gender and sexual formations not captured by modern LGBTQ categories. Studies genders and sexualities that both pre-date current LGBT subjectivities and community formations, as well as develops theoretical and analytic tools to examine future gender and sexual possibilities. Interrogates forms of heterosexuality, heteronormativity and homonormativity, from an intersectional perspective. Examines issues and institutions that impact and are impacted by sexuality as a vector of power, such as sexual stratification, carceral genders and sexualities, reproductive rights/justice, sexual health and justice, HIV/AIDS and disease, sex work, the state and legal system, and transnational and diasporic sexualities, just to name a few.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
STC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	501	Theories of Data & Society	Surveys the development of social theory with regard to structures of knowledge and data exchange. Prepares students to engage in theory building and deploy theoretical frameworks that inform and support their social research.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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STC	505	Theories of Social Technology	Examines key theories of social technologies from social and behavioral perspectives. Examines the political dimensions of technologies; technology's role in constructing social structures; and how mobile technologies encourage, structure and delimit social interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	510	Data Wrangling	Provides a technical grounding in the processes of extracting, processing and combining data for the purposes of understanding social and institutional changes. Introduces structures of the Web, programming for the extraction of data, storing data effectively, and basic tools for manipulating, visualizing, summarizing and transforming collected data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	512	Data, Places, People & Things	While the Web continues to be our front door to networked data, the fastest growing segment of internet traffic is produced and consumed by sensors and embedded systems. Examines the ways in which these data may be acquired and used, and how new locative technologies may be prototyped to help understand their social impact.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510; Credit is allowed for only STC 512 or STC 598 (Mobile & IoT Systems)
STC	520	Advocacy and Social Technology	Examines the potential for social technology in advocating for social change.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	525	Politics and Social Technology	Concerns the political implications of social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	527	Ethics&Policies of Social Data	Explores the applied ethics of data, and how this relates to public policy, both from a social and an institutional perspective.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	528	Communicating Data Science	Making use of data means more than just designing algorithms that work consistently. Big data is useless if it cannot be effectively communicated to those who need it, whether that is policy makers, managers or the public at large. Participants acquire techniques that allow them to effectively communicate complex data in writing, verbally, visually and through interfaces.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 551
STC	530	Algorithmic Society	Examines perspectives on the algorithmic turn, including the emergence of software studies, big data, platformed sociability and automation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	535	Networked Social Technology	Surveys human and social behaviors from the perspective of networks, with an emphasis on social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	536	Networked Publics	Traces the move from mass society to networked society and the changes this has led to in the public sphere, political participation and systems of governance.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 501
STC	537	Technologies of Community	Examines the ways in which communities form, manage themselves, and improve through the use of networked technologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	539	Social Search and Filtering	Traces the role of search (and search engines) in the development of networked knowledge; how this biases social access to information; and the technologies of filtering, ranking and sorting that increasingly affect social access to information.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STC 539 or STC 598 (Search, Algorithms, and Society)
STC	540	Critical/Cultural Approaches	Examines critical and cultural studies approaches to social technologies. Explains a critical/cultural studies approach to social issues and the cultural and social dimensions of technologies. Explores how social technologies both shape and are shaped by power and how cultural understandings of technology contribute to the shaping of everyday life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	545	Games as Social Technology	Explores how games as networked and collaborative technologies facilitate community formation, interaction and development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	547	Political Econ of Social Tech	Examines the economic, political and material structures of contemporary social and participatory media. Considers patterns of ownership, regulatory policy, corporate ideology and practice, intellectual property, the nature of labor in the information economy, and more, all with an eye toward understanding how social technologies are developed, distributed and deployed.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	550	Computational Social Methods I	Provides a foundation in the structure of scholarly inquiry and research design in the context of data and society.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510
STC	551	Computational Social Meth II	Extends exposure to advanced computational methods in the practice of social science.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 550

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STC	570	Social Data Projects	Participants collaborate on a substantial project relating to social use of data. In the process they bring to bear their theoretical and technical skills and demonstrate professional interaction and communication skills. Participants also produce a public portfolio of their work during their graduate program.	N	PRA	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1		Prerequisite(s): Social Technologies MA student
STC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		
STP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	226	Elements of Statistics	Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or other course meeting General Studies MA requirement with C or better or ALEKS score of 61 or higher OR Visiting University Student
STP	231	Statistics for Biosciences	Concepts and methods of statistics; display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or higher with C or better or ALEKS score of 61 or higher OR Visiting University Student
STP	280	Probability Statistics Research	Methods for data summary, numerical summary measures, probability concepts, discrete and continuous probability distributions, expected values, statistics, sampling distributions, point estimation, and introduction to statistical inference for a single parameter.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): MAT 251, 265, or 270 OR Visiting University Student
STP	281	Stat Analysis for Researchers	Confidence intervals, hypothesis testing, one- and two-factor analysis of variance, simple linear regression, multiple regression, chi-square tests, and introduction to statistical quality control.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 266 or 271; STP 280
STP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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STP	310	Design/Analysis of Experiments	Factorial and nested designs, randomized designs, randomized complete block designs, Latin squares, fixed and random effects, expected mean squares, multiple comparisons, and analysis of covariance.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	311	Regression & Time Series Anal	Simple linear regression, multiple linear regression, indicator variables, influence diagnostics, stepwise selection, logistic regression, introduction to time series models, autocorrelation, and some ARIMA models.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	315	Statistical Computing	Statistical techniques using a professional statistical programming language (e.g., SAS, R). Emphasizes correct methods, writing and presentation of results	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 310 or STP 311 OR ACO 320 and STP 226
STP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
STP	420	Introductory Applied Statistic	Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, regression analysis, analysis of variance, and nonparametric tests.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
STP	421	Probability	Laws of probability, combinatorial analysis, random variables, probability distributions, expectations, moment-generating functions, transformations of random variables, and central limit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 or Visiting University Student
STP	425	Stochastic Processes	Markov chains, stationary distributions, pure jump processes, 2-D order processes, and other topics in stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 371 with C or better; STP 421 with C or better OR Visiting University Student
STP	427	Mathematical Statistics	Limiting distributions, interval estimation, point estimation, sufficient statistics, and tests of hypotheses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 or STP 421 with C or better; STP 281 or 420 with C or better OR Visiting University Student
STP	429	Applied Regression	Statistical inference for controlled experimentation. Multiple regression, correlation, analysis of variance, multiple comparisons, and nonparametric procedures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): STP 420 with C or better OR Visiting University Student
STP	450	Nonparametric Statistics	Rank- and order-based tests and estimation procedures for 1 sample and 2 or more related or independent samples, measures of correlation, and introduction to resampling methods, including bootstrap and randomization tests.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 310
STP	451	Quality Improvement	In-depth concentration on statistical process control for attribute and variables data, process capability analysis and measurement systems analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 311
STP	452	Multivariate Statistics	Statistical analysis of multivariate data including methods for preparation and presentation of multivariate data, MANOVA, discriminant analysis, principal component analysis, factor analysis, cluster analysis, random forests and classification trees.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 311; MAT 343
STP	460	Categorical Data Analysis	Statistical methods for the analysis of categorical (discrete, count) data. Topics include exact and approximate tests and confidence intervals for one- and two-binomial proportions, contingency tables, generalized linear models, logistic regression and loglinear models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 310, 311; MAT 272
STP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
STP	485	Statistics Capstone	Students work in a team and partner with a client to solve a real-world problem requiring statistical analyses. Emphasizes problem development, integration of technical skills, teamwork and communication among the students and with the client. Requires regular meetings and presentations with team, client and faculty advisor.	N	LEL	N	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: Senior standing; STP 310, 311, 6 additional hours of upper-division STP excluding STP 492, 493, 498, 499
STP	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
STP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
STP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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STP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	495	Undergraduate Research	Supervised research in statistical or probability studies.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours. Credit is allowed for only MAT 494 (UG Research in Math) or STP 495
STP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-7		
STP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
STP	501	Theory of Statis I: Dist Thry	Introduces rigorous probability theory, including distributions and expectations of random variables, transformations of random variables and order statistics, generating functions and basic limit concepts. Supplements the understanding of applied statistics with a firm grasp of the probabilistic underpinnings of theoretical statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking); Credit is allowed for only STP 501 or STP 598, Theory of Statistics I
STP	502	Theory of Stats II: Inference	Pesents techniques and basic results of mathematical statistics at a rigorous level. Develops the structure of statistical inference procedures, including the principles of data reduction, theory of estimation, confidence sets, hypothesis testing, and prediction for common parametric models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 501 with B- or better; Credit is allowed for only STP 502 or STP 598, Theory of Statistics II
STP	505	Bayesian Statistics	Provides knowledge of Bayesian statistical methods. Covers the essential conceptual ideas for Bayesian analysis and discusses a variety of computational ideas that facilitate a Bayesian analysis in real-world applications. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including exposure to mathematical proof, linear algebra, multiple semesters of calculus, exposure to coding and a basic course in statistical concepts and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 505 or STP 598 (Bayesian Statistics)
STP	526	Theory/Statistic Linear Models	Multinomial distribution, distribution of quadratic forms, full and nonfull rank models, generalized inverses, unbalanced data, variance components, and the large sample theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	527	Statistical Large Sample Thry	Types of convergence, central limit theorems, theory of maximum likelihood estimation, efficiency, robustness, influence functions, theory of bootstrap methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	530	Applied Regression Analysis	Method of least squares, simple and multiple linear regression, polynomial regression, analysis of residuals, dummy variables, and model building.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	531	Applied Analysis of Variance	Factorial designs, balanced and unbalanced data, fixed and random effects, randomized blocks, Latin squares, analysis of covariance, and multiple comparisons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	532	Applied Nonparametric Stats	One-sample test, tests of 2 or more related or independent samples, measures of correlation, and tests of trend and dependence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	533	Applied Multivariate Analysis	Discriminant analysis, principal components, factor analysis, cluster analysis, and canonical correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	535	Applied Sampling Methodology	Simple random, stratified, cluster sampling; variance estimation in complex surveys; nonparametric superpopulation approaches; nonresponse models; computational methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	540	Computational Statistics	Presents computational tools for statistical inference and data analysis. Uses R software (the lingua franca of statistics) in a wide variety of examples. Emphasizes simulation of random variables, Monte Carlo experiments, evaluation of statistical models via cross-validation, construction of confidence intervals via bootstrap and hypothesis testing via permutations. Focuses on the numerical solution of least squares problems, on stepwise methods for model building and on estimation of regression models for high-dimensional data. Presents computational tools for maximum likelihood estimation with an emphasis on estimation of logistic regression models. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including mathematical proofs, linear algebra, multiple semesters of calculus, coding and statistical concepts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 540 or STP 598 (Computational Statistics)

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STP	560	Experimental Statis in Biology	Principles of experimental design, hypothesis testing and advanced data analysis in the biological sciences using statistical software (R and/or SAS). Applies statistical topics to biological data and emphasizes the identification of the appropriate statistical methodology. Topics include exploratory data analysis with visualization, experimental design, categorical data analysis, generalized linear modelling, survival analysis, CART methods and power analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BIO 614
STP	581	Statistical Consulting Clinic	Provides practical experience in the application of statistical theory and methods to problems from a wide variety of disciplines, exposing students to a diverse range of data types and clients. Develops nontechnical consulting skills, for example explaining statistical concepts to non-statisticians, writing reports, and making oral presentations.	N	PRA	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 530 with B or better; STP 531 with B or better; Credit is allowed for only STP 581 or STP 598 (Statistical Consulting)
STP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
STP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
STP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
STP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
STS	101	Intro Science, Tech & Society	Overview of the basic issues, definitions and literature involved in the study of science, technology and human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only STS 101 or STS 304 OR Visiting University Student

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STS	110	Global Technology&Development	Introduces awareness and understanding of how technology, processes of globalization, and society influence one another. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317
STS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	235	Technology and Urban Systems	Focuses on the relationship between technology and urbanization, especially on how technological innovation and change impact all aspects of urban systems, including urban social and economic development, sustainability, governance, environmental, and community change.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
STS	260	Politics of Sci and Technology	Explores the relationship among government, politics, science, and technology, especially the interdependence of public policy and science and technological pursuits.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	301	Research in Sci & Tech Studies	Examines methods of inquiry in the social sciences with emphasis on STS, including both qualitative and quantitative approaches, philosophy of science, and scientific revolutions.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	302	Philosophy of Science & Tech	Focuses on the nature and implications of science as a body of knowledge, set of practices, specific methods, and how these differ from other human enterprises and activities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	303	History of Science&Technology	Examines the history of technology within social, cultural, political, and economic contexts and the critical relationship between society and technology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): minimum 45 hours
STS	304	Science, Technology & Society	Overview of the major issues associated with the study of science, technology, and human systems, including theoretical approaches. Credit is given for only STS 304 or 101.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only STS 101 or STS 304 OR Visiting University Student
STS	305	Science and Social Theory	Explores the different theoretical traditions that inform social interpretations of science, including awareness of the historical traditions that define these interpretations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	306	Social Effects of Science Tech	Examines the effects of science and technology on social life and the contexts in which those effects manifest.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	317	Sci, Tech, & Global Engagement	Overview of international issues associated with both the development and deployment of technologies, including matters concerning international relations. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317
STS	318	Science, Tech, & Government	Examines the foundations of the interrelationship of science, technology, and democratic governance, with emphasis on the American political system.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	325	Science, Tech, & Public Policy	Examines the interaction of science and technology with American domestic policy.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	328	Science, Technology, & Culture	Overview of technology and international cultures, including cultural definitions of science and technology. May intersect issues of culture and religion.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	329	Tech in Developing Countries	Covers specific issues relating to building technological capability in newly industrializing countries.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	330	Info Tech and Globalization	Examines the intersection of advances in information technology and globalization and the impact of these processes on human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	
STS	331	Ethical Issues in Sci and Tech	Examines the interconnections between values and science and technology by examining such topics as computers and privacy, medical malpractice, reproductive technologies, patents, and hazardous facilities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	332	Global Issues in Science &Tech	Examines contemporary international debates in science and technology and how those issues impact globalization.	N	SEM	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	364	Science, Tech,& Nat'l Security	Examines how changing technologies impact all aspects of national security policy in the United States.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	401	Statistics in Sci&Tech Studies	Introduces statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures, and inferential statistics.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): MA general studies requirement satisfied OR Visiting University Student
STS	425	Law, Values, Sci,& Technology	Examines the interconnections of law, values, and science and technology with a view to establishing their reciprocal relationships.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
STS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student

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STS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
STS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
STS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
SWG	501	Micro Human Behav Soc Environ	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	502	Macro Human Behav Soc Environ	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspective in a macro context.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	510	Foundation Practice I	Basic social work methods with emphasis on the problem-solving process as it pertains to individuals, families, and small groups.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW student; Pre- or corequisite(s): SWG 501 with C or better if completed
SWG	511	Foundation Practice II	Theory and methods of direct practice with groups and selected practice models.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Master or Doctor Social Work student; SWG 510 with C or better
SWG	514	Bridge Seminar I	Professional social work practice at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist or Social Work - Advanced Standing - Direct Practice or Social Work - Advanced Standing (Planning, Administration and Community Practice) MSW student
SWG	515	Bridge Seminar II	Generalist practice problem-solving skills with diverse individuals, groups, families and systems at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre- or corequisite(s): SWG 514
SWG	516	Social Work Skills Seminar	Focuses on the acquisition of practice skills for advanced interaction with individuals, families, groups and communities.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Corequisite(s): SWG 514; SWG 515
SWG	519	Research Methods/Social Work	Conceptual foundations and methods of nomothetic research in social work. Includes problem identification, hypothesis formulation, measurement, sampling, and experimental design.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	526	Mental Health/Sentencing	Helps justice system professionals understand existing mental health diagnoses, the DSM-5, and how specific DSM-5 categories are associated with specific types of crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	527	Mitigation Death/Life Cases	Issues and skills for practicing as a mitigation specialist in cases of death and life without parole.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	528	Presentence Investigations	Examines the functions and objectives of presentence investigation reports and prepares students to perform different types of investigations for limited and general jurisdiction courts for local, state and federal courts.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	529	Alternatives Penal Sanctions	Prepares individuals to practice as sentencing advocates on defense teams, as consultants to problem-solving courts, or as private presentence investigators hired by the defense to advocate for alternatives to incarceration.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	531	Social Policy and Services	Conceptual, analytical, and historical perspectives on the social welfare institution. Emphasizes poverty and inequality. Principles of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	533	Diversity/Oppression/Soc Work	Explores issues of social inequality related to disability, ethnicity, gender, race, and sexual orientation. Emphasizes populations of the Southwest.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	540	Professional Experience I	Explains the historical origins of the social work profession, discusses the values and ethics unique to the profession, and familiarizes students with resources available at the school and the university for students enrolled in the MSW online program.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Standard Program MSW student; Credit is allowed for only SWG 540 or SWG 598 (Professional Seminar I)
SWG	541	Field Practicum I	With SWG 542, two consecutive semesters (480 hours) of supervised social work practice in an approved placement.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; Pre- or corequisite(s): SWG 510 with C or better if completed
SWG	542	Field Practicum II	See SWG 541	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; SWG 510 with C or better; SWG 541 with a Y grade; Pre- or corequisite(s): SWG 511 with C or better if completed

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SWG	545	Domestic Violence & Nat AmCorp	Provides students with basic domestic violence education and training in preparation for working with domestic violence survivors in the community, as well as support throughout their first semester of internship placement. Provides training in evidence-based interventions, including the implementation of an evidence-based safety decision aid, a tool to enhance risk assessment, safety planning, and referral to additional community resources. Also emphasizes the unique mission of AmeriCorps members through the Corporation for National & Community Service.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545
SWG	546	Teen Dating Violence Prevent	Covers theoretical and practice frameworks for understanding and preventing teen dating violence. Specifically, provides an overview of intimate partner violence in the adolescent developmental context, considers risk factors and impacts of victimizations and investigates methods of assessing and preventing dating violence in multiple contexts. Students critically engage with how practitioners and researchers might engage in dating violence risk reduction and prevention throughout the course, building up to a final project in which they develop their own prevention program. Focuses on issues of gender throughout the semester, and highlights the importance of community-based and culturally-responsive prevention and intervention. Students have the opportunity to think critically about the current understanding of dating violence, explore their own attitudes, and develop ideas for effective intervention and prevention	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	554	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 554 or SWG 591 (Overview of Addictions) or SWU 454 or SWU 498 (Overview of Addictions)
SWG	556	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 456 or SWG 556 or SWG 591 (Immigrants and Refugees)
SWG	557	SW Borderland Immigratn Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Credit is allowed for only SWG 557 or SWU 457
SWG	558	Intro Behavioral Hlth Services	Explores mental health. Develops a basic understanding of mental health and co-occurring conditions. Gains an understanding of public- and employer-financed contemporary behavioral health services with a focus on Arizona models.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 458 or SWG 558 or SWG 591 (Introduction to Behavioral Health Services)
SWG	559	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 459 or SWG 559 or SWG 591 (Spirituality & Helping Profession) or SWG 598 (Spirituality and the Helping Professions)
SWG	560	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 460 or SWG 560 or SWG 591 (Legal Issues in Social Work)
SWG	561	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 461 or SWG 561 or SWG 591 (Lesbian and Gay Issues)
SWG	562	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 562 or SWG 591 (International Social Work) or SWU 462 or SWU 498 (International Social Work)

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SWG	563	Multicul Persptv Comm Devepmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWG	570	Aging in Perspective	Biopsychosocial/spiritual perspectives on aging, including intergenerational matters, international trends, policies, programs, services and issues unique to populations of the Southwest.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 570 or SWG 591 (Aging Soc Wk Perspective)
SWG	571	Mental Health Aspects of Aging	Older adult mental health assessment, treatment, planning, policy and service delivery from a cross-cultural, interprofessional, intergenerational, international and continuum-of-care perspective.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 571 or SWG 591 (Mental Health & Aging)
SWG	572	Interprofessional Hlthy Aging	In-depth examination of healthy aging, interprofessional practice and interprofessional practice approaches designed to foster healthy aging for older adults.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	573	Policies: Promote Hlthy Aging	Age-based policy process and various social policies/programs that address financial, medical and psychosocial needs of older Americans.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	576	War and Disaster	Covers traumatic and stressful aspects of natural and mass disaster and war for individuals, families and communities and implications for working with those affected.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 576 or SWG 591 (War and Disaster)
SWG	577	Traumatic Death	Explores the various experiences of grief, trauma and bereavement through a phenomenological perspective and using creativity, art, literature, poetry, indigenous wisdom and evidence-based research. Practice techniques and psychosocial care to the traumatically bereaved. Examines the micro, mezzo and macro aspects of death and grief in contemporary society. Theory, philosophy and direct practice with individuals, families and groups experiencing traumatic death and grief.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only SWG 577, 591 (Trauma & Death Counseling) or 598 (Trauma&Death: Counseling, Theory, &Practice Issues)
SWG	579	Critical Incident Stress Mgt	Theory and research behind coping strategies and mechanisms commonly experienced by Emergency Management Teams (EMT) and DHS. Explores topics of stress, trauma, vicarious trauma and mass trauma as experienced by the individual and large populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	585	Macro Social Work Practice	Examines communities and human service organizations as social systems. Introduces strategies for initiating planned change.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): SWG 606, 610, 623, or 645 with C or better; Pre- or corequisite(s): SWG 614 with C or better if completed; SWG 632 with C or better if completed; SWG 646 with C or better if completed
SWG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		Pre-requisites: Master Social Work student
SWG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Social Work	1-12		

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SWG	603	Soc Work Prac-Health Settings	Advanced social work practice in health and behavioral health settings, focusing on enhancement of client functioning and quality of life.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	604	Adv Soc Wrk Practice in Health	Addresses the crucial social work practice issues of health and healthcare in the new millennium.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 603 with C or better
SWG	606	Assessment of Mental Disorders	Theories and concepts of mental health and illness. Attention to classification systems and nomenclature used in assessing mental disorders.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) MSW student; SWG 511 with C or better; SWG 542 with Y grade
SWG	608	Ecol Appr Pract Child,Yth Fam	Provides a theoretical and practical orientation to working with children, youth, and families from an ecological strengths perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	609	Adv Prac Child Welfare Fam	Focuses on substance abuse, family violence, and serious mental illness in practice with families and children in the child welfare system.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	610	Adv Social Work Practice III	Knowledge and skills for advanced practice with individual and families.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW student OR SWG 542 with Y grade; Pre- or corequisite(s): SWG 640 with C or better if completed
SWG	611	Social Work with Families	Theory, concepts, and skills for working with diverse family populations. Emphasizes a systems and integrative approach.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	612	Social Work with Groups	Practices applications of knowledge and skill to social work with groups.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	613	Adv Soc Wk Prac/Behav Hlth	Treatment of prevalent disorders encountered by social workers, selected from the following: anxiety disorders, personality disorders, depression, and schizophrenia.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	614	Adv Generalist Soc Wk Prac IV	Knowledge and skills for advanced practice with groups and communities.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 640 with C or better
SWG	617	Adv Soc Wk Prac/Children	Theory, research, and intervention that focus on children and adolescents.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	618	Adv Pract in Domestic Violenc	Theory, research, intervention, and prevention strategies relevant to child maltreatment, partner abuse, and elder abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	619	Practice-Oriented Research	Accelerated course in application of scholarly and scientific principles to field practice, problem formulation, interventional procedures, and impact assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 519 with C or better or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major

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SWG	621	Integrative Seminar	Explores the fit between theoretical frameworks and practice with clients. Requires presentation of empirical studies with clients.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 606 with C or better; SWG 619 with C or better; SWG 641 with Y; Pre- or coreq(s): SWG 613 with C or better if completed OR SWG 617 with C or better if completed OR SWG 661 with C or better if completed; SWG 642 with Y if completed
SWG	623	Program Evaluation	Research design techniques and data collection in human service agencies and communities. Analysis for program evaluation and needs assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) or Social Work (Advanced Generalist) MSW major OR SWG 519 with C or better; SWG 542 with Y grade
SWG	626	Crisis Intervention/Short-Term	Comprehensive analysis of crisis and solution-focused brief intervention strategies and approaches used in advanced social work practice.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	630	Brief Social Work Intervention	Concepts and techniques of solution-focused, systematic, and strategic approaches to therapy in the context of brief therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major
SWG	632	Policy Practice	Develops advanced knowledge and skills in social welfare policy analysis, policy formulation, and advocacy and intervention for policy change.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW, Social Work (Advanced Generalist) MSW, Social Work (Planning, Administration and Community Practice) MSW student OR SWG 531 with C or better; SWG 542 with Y grade
SWG	633	Child Welfare Services	Examines, using ecological and system theories, services that supplement, support, and substitute for parental care of children.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	640	Professional Seminar II	Applies social work's knowledge base to advanced generalist social work.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW major OR SWG 542; Credit is allowed for only SWG 640 or SWG 598 (Professional Seminar II)
SWG	641	Adv Practicum: Direct Prac I	With SWG 642, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student OR SWG 542 with Y grade; minimum 3.00 GPA
SWG	642	Adv Practicum: Direct Prac II	With SWG 641, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 641 with Y grade; minimum 3.00 GPA
SWG	643	Adv Practicum: Plan,Soc Wk Adm	With SWG 644, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prereq(s): Social Work Adv Standing (Policy, Admin & Community Prac) MSW student OR SWG 542 with Y grade; min 3.00 GPA; Pre- or coreq(s): SWG 681 with C or better if completed; SWG 682 with C or better if completed; SWG 685 with C or better if completed
SWG	644	Adv Pract: Plan,Soc Wk Prac II	With SWG 643, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 681 with C or better; SWG 682 with C or better; SWG 685 with C or better; SWG 643 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 623 with C or better if completed; SWG 632 with C or better if completed
SWG	645	The Professionl Experience III	With SWG 646, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW student OR SWG 542 with Y grade; SWG 640 with C or better; Pre- or corequisite(s): SWG 610

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SWG	646	Professional Experience IV	With SWG 645, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWG 610 with C or better; SWG 645 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 614
SWG	647	The Domestic Violence Movement	Provides training and education in preparation for political and community advocacy to address domestic violence and sexual assault from a macro social work perspective. Provides education in the history of the domestic violence movement, including its roots in the feminist perspective and the rape crisis movement. Furthermore, students critically analyze the domestic violence movement, examining the role of marginalized populations within the movement as well as unintended consequences of the movement. Concludes by planning for the future of the domestic violence movement, including next steps in policy advocacy, programming and community engagement.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	648	Intimate Partner Violence	Examines the use of intimate partner violence (IPV, aka, domestic violence) risk assessment in social work practice with survivors of IPV. Examines theories and research that explain, define and describe IPV risk assessment; the intended uses and predictive value of the various available IPV risk assessment instruments; and the use of IPV risk assessment instruments in social work practice interventions, including within risk informed collaborative interventions (e.g., the Lethality Assessment Program). Presents an evidence-based practice framework for the use of risk assessment in social work practice. Encourages students to think critically about the use of risk assessment across social work practice settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	654	Introduction to Sexual Abuse	Develops general knowledge and skills for working with persons who have been impacted by sexual abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	655	Qual Life Master Mindfulness	Addresses key elements of a healthy life style contributing to wellness and disease through experiential learning and evidenced-based research.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	656	Treating the Whole Person	Addresses treating the "whole person's" physical and behavioral health through interviewing, intervention, and treatment within the context of an interdisciplinary model.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	657	Holistic Therapies Modern Time	Historical development and research of the ancient healing teachings of traditional Chinese medicine, Aryurvedic medicine, homeopathic, naturopathic, and indigenous medicine and how they are used in today's health systems.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	661	Cognitive Behavior Therapy	Knowledge and skills to understand and apply cognitive-behavioral approaches to treatment (CBT), including diagnostic information and empirically supported interventions targeted to individuals, families and groups across the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student OR Pre- or corequisite(s): SWG 542 with Y grade
SWG	662	Soc Wk Practice w/Adolescents	Advanced elective focuses on working with adolescents in a variety of intervention settings (e.g., mental health agencies and schools).	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Social Work Practice With Adolescents) or 662
SWG	663	Clinical Trauma Treatment	Explores the assessment and treatment of PTSD in people throughout the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Clinical Trauma Treatment) or 663
SWG	664	Treatment Substance Disorders	Knowledge and skills to understand substance abuse disorders, including diagnostic information and evidence-based interventions targeted to individuals, families and groups.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Treatment Substance Use Disorders) or 664

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SWG	681	Social Work Administration	Administrative skill building and theory application within human service nonprofit social work settings.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work Advanced Standing (Advanced Direct Practice) MSW or Social Work Advanced Standing (Policy, Administration and Community Practice) MSW student OR SWG 542 with Y grade
SWG	682	Community Participation Strats	Reviews strategies to involve citizens and the consumers of social and human services in community decision-making systems. Participation is viewed as a means to facilitate the empowerment of oppressed peoples.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work Advanced Standing (Advanced Direct Practice) MSW or Social Work Advanced Standing (Policy, Administration and Community Practice) MSW student OR SWG 542 with Y grade
SWG	685	Program Planning Soc Services	Social services planning process; includes needs assessment, goals and objectives, program design, budgeting, management information systems, and program evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) MSW student OR SWG 542 with Y grade; SWG 585 with C or better
SWG	686	Dev Grants & Fund Raising	Identifies potential funding sources, technical and interpersonal/political aspects of proposal development and fund raising.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	687	Public Policy and Advocacy	Covers public policy at the federal level, including administrative, legislative and judicial policy. Students understand how to develop congressional policy and methods to engage in advocacy at the federal level to impact macro social work practice.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 687 or SWG 591 (Advocacy and Public Policy)
SWG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisites: MSW or MSW Advanced Standing student
SWG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Prereq(s): SWG 606 w/ C or better; SWG 610 w/ C or better; SWG 623 w/ C or better; SWG 640 w/ C or better; SWG 645 w/ Y grade; Pre- or coreq(s): SWG 614 w/ C or better if completed; SWG 632 w/ C or better if completed; SWG 646 w/ Y grade if completed
SWG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solutions	School of Social Work	1		Pre-requisites: MSW, MSW Adv Standing, or PhD student
SWG	718	Qualitative Research Methods	Provides comprehensive qualitative research methods training for doctoral students to complement their quantitative survey research methods knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 718 or 791 (Qualitative Research Methods)
SWG	719	Quantitative Research Methods	Provides the tools for independently designing and conducting methodologically sound, ethical, quantitative research that advances social work and social welfare knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student
SWG	720	Phil of Sci Issues in Soc Wk	Critical examination of social science, social work practice, and policy in terms of philosophical assumptions and varying frames of reference.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Master or Doctor Social Work student.
SWG	721	Statistics	Logic and application of statistical methods for analyzing social welfare-based data pertaining to social work. Includes ethical issues concerning the appropriate application, interpretation and use of social research, as well as the potential limitations and biases of applications that fail to adequately consider issues of population diversity. Students learn to independently design a research project from start to finish employing statistical analysis of primary data.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: doctoral major

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SWG	722	Pedagogy in Social Work	Prepares doctoral students to teach for the profession of social work. Provides an opportunity for students to develop or enhance their philosophy of teaching, their attitudes toward learning, teaching and students, and the knowledge and skills necessary to teach effectively. Explores teaching to the diverse students present in social work programs, the challenges that teaching presents and the responsibilities that come with social work education.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Doctoral student; Credit is allowed for only SWG 722 or SWG 791 (Pedagogy in Social Work)
SWG	723	Proposal Development	Provides an opportunity for doctoral students to formulate a dissertation proposal or a research plan for a three-paper option. Provides a forum for presenting ideas, receiving feedback and defending one's proposal.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 723 or 791 (Proposal Development)
SWG	731	Welfare State	Examines the evolution of the welfare state as a problem of political economy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 731 or 791 (Welfare State)
SWG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solutions	School of Social Work	1		
SWG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solutions	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWU	171	Introduction to Social Work	Descriptive and historical perspectives of social problems, social justice issues and society's response to them.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & H	
SWU	180	Intro to LGBT Studies	A historical, socio-cultural introduction to lesbian, gay, bisexual, transgender, transsexual, and intersexed communities and their resilience to challenges and barriers.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & C	Credit is allowed for only SWU 180 or SWU 194 (Introduction to LGBT Studies) OR Visiting University Student
SWU	181	Econ: Social Issue Perspective	Introduces economic principles through the lens of contemporary social issues for social work and related fields.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Credit is allowed for only SWU 181 or SWU 194 (Economic and Social Issues in Perspective) OR Visiting University Student
SWU	182	Soc Serv Perspective Gov't	Explores levels of government and policy practice in advancing social and economic justice and effective social services within the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Credit is allowed for only SWU 182 or SWU 194 (AZ/National Government: Social Work Perspective) OR Visiting University Student
SWU	183	Intro Ethics:Soc Issue Perspec	Introductory exploration of ethics from a historical and multicultural perspective viewed through the lens of contemporary social issues.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	HU	Credit is allowed for only SWU 183 or SWU 194 (Intro Ethics: Social Issues Perspective) OR Visiting University Student
SWU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		
SWU	250	Stress Management Tools I	Helps students develop an understanding and behaviors to create a healthy balance in their lives by studying the bio/psycho/social aspects of wellness.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	
SWU	291	Social Service Delivery Syst	Federal, state, private not-for-profit and for-profit social service delivery system's purpose, structure, and professional roles. Includes 40 volunteer hours.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		

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SWU	295	Found of Social Wk Practice	Theoretical foundation and skill base for effective culturally competent communication and interviewing with individuals, families, small groups, and larger systems.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	SB & C	Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	302	Human Biology for Soc Workers	Overview of human anatomy and physiology, and the reciprocal relationship between physical and social environments. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		
SWU	303	Micro Human Behav Social Envir	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	L or SB	Prerequisite(s): Comm Advoc & Soc Pol BA major; ENG 101, 105 or 107 with C or better OR ENG 101, 105 or 107 with C or better; PSY 101 or SOC 101; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better OR Visiting University Student
SWU	306	Ethics in Social Services	Focuses on following the NASW Code of Ethics in making ethical decisions in social service settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; PHI 101, PHI 105, or SWU 183; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	310	Social Work Practice I	Introduces social work methods, emphasizing the following skills: relationship development, cross-cultural interviewing, communication patterns, and case-recording.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 or SWU 271 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 303 with C or better if completed
SWU	311	Integrative Soc Wk Practice	Social work practice skills emphasizing cross-cultural interviewing, assessment and professional recording.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 312 OR Visiting University Student
SWU	312	Integrative Soc Wk Prac Skills	Applies social work content from SWU 311 focusing on practice skills and professional behavior.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 311 OR Visiting University Student
SWU	320	Research Methods in Social Wk	Applies scientific principles to field practice, problem formulation, intervention procedures, and impact assessment in social work.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Pre- or corequisite(s): SWU 311 with C or better if completed; SWU 312 with C or better if completed OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	321	Statistics for Social Workers	Teaches social work students how to use and interpret descriptive and inferential statistics in social work practice. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	CS	Prerequisite(s): MAT 142 or an MA general studies course OR Visiting University Student
SWU	332	Social Policy and Advocacy	Contemporary social, political and economic issues. Special emphasis on advocating for oppressed populations. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Community Advocacy and Social Policy major or Public Service and Public Policy major; POS 110 or POS 310 or SWU 182 OR Visiting University Student
SWU	340	Macro Human Behav Social Envir	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspectives in a macro context	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Pre- corequisite(s) with C or better if completed: SWU 303; SWU 310 OR SWU 303; SWU 311; SWU 312 OR Comm Advocacy & Soc Poly BA major OR Visiting University Student
SWU	349	Stress Management Tools II	Developing mindful strategies toward managing stress, developing instinct awareness; healthy decisions in nutrition, relationship with self, others and creating a personal carbon footprint.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Credit is allowed for only SWU 349 or SWU 294 (Stress Management Tools II) OR Visiting University Student
SWU	350	Whole Person Health	Development of mindful strategies toward managing stress and identification, implementation and integration of skills and knowledge for well-being across the lifespan.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	351	Sustainable Living-Mindful Eating	Addresses issues related to foods we eat, how we eat, and impacts of choices on health, the environment, locally and globally.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	374	Diversity/Oppression/Soc Wk	Issues of social inequality related to race, ethnicity, gender, sexual orientation, and disability. Emphasizes populations of the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Prerequisite(s): Community Advocacy and Social Policy BA major or Social Work BSW major OR Visiting University Student

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SWU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
SWU	410	Social Work Practice II	Knowledge and skills in social work practice with individuals and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; PHI 101 or PHI 105 or PHI 306 or SWU 183; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 412; SWU 413 OR Visiting University Student
SWU	411	Social Work Practice III	Knowledge and skills in social work practice with groups, communities, and organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410, 412, or 413 with C or better; Corequisite(s): SWU 414; SWU 415 OR Visiting University Student
SWU	412	Field Instruction I	16 hours a week of supervised practice in an approved placement. "Y/E" grade only.	N	PRA	N	YGB	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 410; SWU 413 OR Visiting University Student
SWU	413	Field Instruction Seminar	Field-focused seminar, including practice evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412 OR Visiting University Student
SWU	414	Field Instruction II	16 hours a week of supervised practice in an approved placement. Y/E grade only.	N	PRA	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with Y grade; SWU 413 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 411; SWU 415 OR Visiting University Student
SWU	415	Integrative Field Seminar	Field-focused seminar to help students integrate practice and theory.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with C or better; SWU 413 with C or better; Corequisite(s): SWU 411; SWU 414 OR Visiting University Student
SWU	416	Domestic Viol &Natl AmeriCorps	Prepares students for working with domestic violence survivors in the community and to implement evidence-based practices in domestic violence services.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545 OR Visiting University Student
SWU	417	Tech, Interpersonal Relationships	Examines the influence, impact and role of information communication technologies within interpersonal relationships. Draws from theoretical concepts, current events and student experiences to understand the risks and benefits to incorporating mediated communications into personal relationships. Also examines ways that technology can further abuse and mistreatment of marginalized groups by reviewing research about online harassment, cyberbullying, cyberstalking, monitoring, surveillance, and other forms of online exploitation. Students use readings, lectures and assignments to understand ethical implications when incorporating technology into our social lives.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours
SWU	418	Global Violence Against Women	Examines experiences of and responses to violence against women (VAW) from global perspectives. Throughout the semester students explore drivers and consequences of violence against women across geographic and practice contexts. Examines critical approaches and evidence-based practice modalities. While the focus of the course is on women's experiences of violence, students have opportunities to explore a wide range of identities related to gender, sexual orientation, race, social status and differing abilities. Draws from local expertise in the practice community and offers integration of classroom content with contemporary issues related to both policy and practice at the local, state, national and international levels.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum 45 hours

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SWU	432	Social Policy and Services	Contemporary social, political, and economic issues. Special emphasis on poverty and inequality in the Southwest. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; ECN 211 or SWU 181; POS 110, POS 310, or SWU 182; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412; SWU 413 OR Visiting University Student
SWU	442	Child Welfare Practice	Focuses on the characteristics, strengths, and service needs of families and children in the Child Welfare System.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with C or better; SWU 413 with C or better OR Visiting University Student
SWU	450	Mastering Mindfulness	Facilitates mastering mindfulness practice. Students teach a lesson and develop a training proposal that will be implemented and evaluated.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 250; SWU 349
SWU	454	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 454 or SWU 498 (Overview of Addictions) or SWG 554
SWU	456	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 456 or SWU 498 (Immigrants & Refugees) or SWG 556 OR Visiting University Student
SWU	457	SW Borderland Immigratn Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Credit is allowed for only SWU 457 or SWG 557 OR Visiting University Student
SWU	458	Behavioral Health Services	Behavioral health conditions; their impact on the individual, family and community; and historical and contemporary service models.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 458 or SWU 498 (Behavioral Health Services) or SWG 558 OR Visiting University Student
SWU	459	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 459 or SWU 494 (Spirituality and the Helping Professions) or SWU 498 (Spirituality & Helping Profession) or SWG 559
SWU	460	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 460 or SWU 498 (Legal Issues in Social Work) or SWG 560 OR Visiting University Student
SWU	461	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 461 or SWU 498 (Lesbian/Gay Issues) or SWG 561 OR Visiting University Student
SWU	462	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3	G	Prerequisite(s): minimum junior standing; Credit is allowed for only SWG 562 or SWU 498 (International Social Work) or SWU 462
SWU	463	Multicul Persptv Comm Developmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): junior standing; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-12		
SWU	488	Advocacy Strategies	Comprehensive advocacy approach that spans administrative, legislative and community strategies.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Social Work	3		Prerequisite(s): SWU 303; SWU 306; SWU 320; SWU 340; SWU 350; SWU 374; senior standing OR Visiting University Student
SWU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-6		Prerequisite(s): Barrett Honors student

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SWU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SWU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-4		
SWU	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Social Work	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SWU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solutions	School of Social Work	1-3		Pre-requisite: Bachelor of Social Work student
TAM	505	Navigating Gbl & RBEs	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. Develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. Deals with the regional business environment. Begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the Latin American business environment. While the emphasis is Latin America, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	511	Global Accounting	Covers the fundamentals of financial accounting and managerial accounting in a global environment. Financial accounting focuses on providing useful information to users for external decision making. By understanding the structure and process of preparing a balance sheet, income statement and statement of cash flows, students learn how to interpret, analyze and evaluate domestic and international companies. Managerial accounting focuses on providing useful information for internal decision making. By identifying and understanding different types of cost information, students learn how to utilize and prepare cost-volume profit analysis, relevant cost analysis, activity-based costing and performance evaluation within global organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	521	Finan Value Creation for Ldrs	Covers fundamental concepts and practices of modern financial management within a market-oriented framework. Develops analytical skills for sound financial decision making and management. Emphasizes practical applications and equips learners with tools necessary to make investment and financing decisions in a global setting. Achieves learning via problem solving, video lectures, case analysis and discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	530	Leading Digital&Data Decision	Includes global examples across industries and how leaders make managerially relevant decisions based on data. Explores how companies benefit from a digital ecosystem including sensors (IoT), Blockchain, artificial intelligence (AI), and augmented reality (AR) that move data-driven insights from the data scientist to the boardroom. Examines implications for customer relationship management, privacy, security and global government regulation that are shaping and are shaped by the democratization of data. Examines the importance of data visualizations and dashboarding for decision making that transform mere data into information and insight. Identifies how to be a more effective diagnostic leader in a data-rich world, identifying opportunities to improve business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	531	Project and Ops Leadership	Strategies and challenges associated with leading projects and designing and improving service and manufacturing processes. Topics include project management, value-chain structures, supplier partnerships, logistics, risk management and value-stream mapping.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TAM	534	Global Venture Creation	Covers the most essential topics for first-timer startup founders. Teaches how to quickly identify and test new business ideas, and how to launch a new venture when an idea worth pursuing is found. Provides a good understanding of the entrepreneurial journey and what is involved when launching a new business. Students develop a new business idea, build and test business model and deliver a professional business pitch at the end of the course. Highly experiential and involves a great deal of customer interactions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TAM 511; TAM 541
TAM	541	Strat in a Competitive World	Focuses on choices that have an impact on the performance of the entire organization or business start up. Includes the problems faced by, and the decisions made by, executive leaders who have to balance the needs and expectations of stakeholders including customers, shareholders and employees with the requirements of local country practices and government regulations. Analyzes problems and decisions from the point of view of the founder, general manager or chief executive who has responsibility for the welfare of the entire organization. By focusing on policy decisions, concerns the choice of goals as well as the organization; management and deployment of scarce resources to pursue these goals within the context of an imperfect, changing and competitive world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	542	Global Ldrshp & Personal Devlp	Personal leadership development is optimized by grounded reflection, self knowledge and continuous learning as we interact with others. Therefore, the personal development part of this course cultivates introspective and skill-building competencies that include conceptual grounding that is based in an experiential learning focus. Discusses self- and other-awareness and engages in group/team interaction, as well as conducts individual self-assessments and individual feedback. In addition to developing ourselves at the personal level, developing ourselves as leaders at the organizational level is imperative to sustainability of the company.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird graduate student
TAM	557	Glbl Mktg Strat & Mgmt	Focuses on macro issues such as market orientation, segmentation, targeting and positioning and their strategic implications within the context of customer, competitor and context analysis. Emphasizes analytical and managerial decision tools for creating competitive advantage, and the similarities and differences in domestic and global marketing. Also examines how digital transformation has influenced the role of analytics in today's hyper competitive organization. Also focuses on the micro topics used to execute and implement strategies learned in the first part of the course. Covers the marketing mix (4Ps), namely pricing, product, promotion and place, and examines how these tools could be used to add value to firms in an international setting, and how they could be effectively applied to create, price, communicate and deliver value to customers and important stakeholders using quantitative and qualitative analyses.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	582	Comm & Neg in Dyn Glbl Wrld	Improves global mindset and negotiation skills by focusing on cross-cultural issues, communication issues and negotiation in cross-cultural environments. Provides an in-depth examination of culture, its managerial implications and negotiation. Explores various methodologies to understand and measure national cultures. Embarks on a rigorous and practical journey to examine the impact of national culture, no matter how it is measured, on communication dynamics in a cross-cultural environment and focuses on specific skill sets to help students succeed in such situations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TAM	589	Global Field Seminar	Businesses confront significant differences among countries in regard to industry structures as well as economic, political, societal and cultural forces, especially in the new era of Industry 4.0. These differences create new challenges and opportunities for businesses that extend their activities internationally. Given the tremendous diversity and rapidly changing business environment across the globe, it is important to address (1) the forces impacting a country's business environment, (2) the implications of these factors for business strategies. Provides a framework and an analytical approach to study the dynamics of business environment in a particular region. Conducted on the ground in country, focuses on-site visits to companies and/or government entities, and interactive discussions with speakers. Emphasizes contemporary issues relevant to understanding the business environment.	Y	SEM	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	597	Integrative Project	Integrates business subjects covered in the program online. Helps students fine tune their business plans and prepare presentations for potential fund raising. Provides tools for effective presentation, preparing pitch deck for fund raising and successful negotiation of the term sheets. Learning is achieved via lectures, discussions, presentations and role play as negotiators.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TAM 511; TAM 521; TAM 534; TAM 541; TGM 505; TGM 540; TGM 551; TGM 579
TCL	101	Latinas/os in the U.S.	Historical and contemporary issues in Latina/o communities in the U.S.; focuses on the diverse economic, sociological, cultural and political status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	111	Latinx Cultural Studies	Interdisciplinary analysis of customs, values, belief systems, and cultural symbols; special attention is given to cultural continuity and change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	201	Transborder Society&Culture I	Intensive overview of Mexican origin and Latina/o populations through various sociological, historical, anthropological, economic, political, cultural, literary, and analytical lenses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	202	Transborder Society&Culture II	Examines contemporary transborder culture; issues of health, gender, class, race, sexuality, family, colonialism, community development, migration and well being, within a transnational context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	
TCL	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
TCL	211	Latinx Poetics	Writing seminar on Latina, Latino and Latinx poetics; intensive creative writing workshop.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	220	Trnsbrdr Latina/o Exprsv Cltr	Examines media, literature, performance, and visual art grounded in the historical experiences of transborder Latina/o communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	230	Exprsv Cltr Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 220 or TCL 230 OR Visiting University Student
TCL	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
TCL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student

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TCL	304	Transborder Research Methods	Emphasizes critical skills: quantitative/qualitative, spatial, archival, and reflexive methodologies, including ethnographic, biographical, historical, and mapping.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours
TCL	305	Transborder Practicum	Field work with faculty incorporating practical experience while honing research skills and ability.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Pre- or corequisite(s): TCL 303 with C or better if completed; TCL 304 with C or better if completed
TCL	310	Folklore of the Southwest	Analyzes the folk beliefs, practices and expression of Mexican-origin and other Latinx populations. Focus includes art, music, performance and every day practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & H & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
TCL	315	Latinx Family Structures	Traditional and changing family relationships of Mexican-origin and Latinx populations; emphasizes gender and intergenerational relations and impact of modern society on traditional family values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	321	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
TCL	323	Latina/o Health Issues	Health issues among U.S. Latina/o populations; interplay among political economy, health, family, culture and community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	326	Health of Chicanas and Latinas	Examines gender, ethnicity, and health; critical issues affecting health status of Chicanas and Latinas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better
TCL	327	Health and Migration	Focuses on health status among various immigrants; health trajectories following migrations, adaptive behaviors, health practices, and the role of policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better or minimum 24 hours
TCL	328	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 earned hours; Credit allowed for only REL 326 or TCL 328
TCL	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
TCL	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student
TCL	335	Hstrol Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
TCL	340	Chicano and Latino Politics	Historical/contemporary analysis of Chicana and Chicano political ideologies, attitudes, strategies, and movements; relations with governmental agencies; and public policy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
TCL	341	Latinas/os and the City	Examines major contemporary issues affecting Latina/o communities in U.S. cities. Explores elements and trends in the urban social fabric and landscape associated with a growing Latino presence and its connection with ethnic diversity, transnationalism, cultural resistance and resilience. Pays particular attention to the political economy and planning of Latino communities in the Southwest with selected comparison drawn from other U.S. cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR minimum 24 hours OR Visiting University Student
TCL	342	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342

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TCL	343	Latinas/os and the Environmen	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
TCL	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
TCL	350	Chicana/o Artistic Production	Overview of Mexican and Chicana/o artistic production from colonial times to present; emphasizes religious and folk art.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C & G	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	351	Chicana/o and Latina/o Art	Intensive analysis of contemporary Chicana/o and Latina/o art movement as appraised within the context of contemporary American art and the art of Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only FMS 352 or TCL 352
TCL	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)
TCL	360	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
TCL	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
TCL	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU	Credit is allowed for only FMS 370 or TCL 370
TCL	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
TCL	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours; Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student
TCL	377	AZ Immigration,Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student

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TCL	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378
TCL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
TCL	422	U.S.-Mexico Border Health	Focuses on identifying health issues affecting Latino/Mexican families in the U.S.-Mexico borderlands using basic epidemiological techniques to analyze regional data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): TCL 321 with C or better
TCL	424	Theory & Pract of Comm Health	Foundations of methodology of community mapping and establishment of community diagnosis, media literacy and advocacy applications for community-based public health.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): TCL 321 with C or better
TCL	443	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
TCL	444	Ethnography Mexico & Borderlands	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
TCL	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
TCL	448	Tchng Chicana/o Studies in Sch	Approaches/techniques for infusion of transborder studies content into elementary and secondary curriculum; designed for teachers who work with Mexican and Latino origin students.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours
TCL	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
TCL	471	Latinos in Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
TCL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		
TCL	485	Chicana and Latina Writers	Critical reading of Mexican American women authors; emphasis on contemporary (post-1970) poetry, novels, short stories, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TCL	490	Trnsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latina/o artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL or WST 490
TCL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6		Prerequisite(s): Barrett Honors student

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TCL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TCL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-7		Prerequisite(s): Transborder Chicana/o and Latina/o Studies (Media and Expressive Culture or Transborder Community Development and Health or U.S. and Mexican Regional Immigration Policy and Economy) major; minimum 56 hours
TCL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	205	Intro to Travel and Tourism	Provides an overview of tourism and its impacts on communities, cultures, economies and environmental systems.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	G	
TDM	225	Intro to Resort & Hotel Mgmt	Introduces local, national and international lodging and food service industries.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
TDM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	345	Meeting & Convention Planning	Basic aspects and skills in planning meetings and conventions. Industry and market overview of certified meeting planners.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better OR Visiting University Student
TDM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
TDM	372	Tourism Planning	Applies economic and regional development concepts and theories to destination product development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 142 or higher with C or better; TDM 205 with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
TDM	386	Convention Sales & Management	The role of convention and visitors bureaus or resort managers, including economic impacts of markets, structure, governance, membership, and advertising.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		
TDM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	401	Tourism Management	Basic principles of administration and their application in successful administrative situations. Analyzes administrative function, structure, and policies.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210 or TDM 210 with C or better; CRD 301 or PRM 301 or TDM 301 with C or better; PRM 303 or TDM 372 with C or better OR Visiting University Student
TDM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
TDM	415	Tourism Transportation Systems	Examines the role of various modes of transportation in domestic and international tourism development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better
TDM	448	Heritage and Cultural Tourism	Provides a solid conceptual understanding of the issues, problems, and management implications associated with heritage and cultural tourism.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 205 with C or better; Credit is allowed for only TDM 448 or CRD 598 (Heritage and Cultural Tourism) OR Visiting University Student
TDM	458	International Tourism	Global examination of international tourism and its significance as a vehicle for social and economic development.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3	G	

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TDM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	6-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; CSM 402 or NLM 402 or PRM 402 or TDM 402 with C or better; Credit is allowed for only CSM 463 or NLM 463 or PRM 463 or TDM 463
TDM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student
TDM	480	Sustainable Tourism	Tourism has a multitude of impacts, both positive and negative, on people's lives and on the environment. Critically analyzes the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): PRM 120 or TDM 205 or minimum 60 hours OR Visiting University Student
TDM	481	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Defines sustainable development, explains the importance of sustainable food systems, recognizes the relationship between local food systems and global food challenges. Connects the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; defines leakage in reference to tourism and food. Creates and applies sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisite: Junior standing; Minimum 60 hours
TDM	482	Sustainable Revenue Management	Introduces the fundamental economic principles that underlie revenue management and the practical application of new analytical technological services in the hotel and resort industry. Uses experienced revenue managers from local resorts and hotels as regular guest speakers and IdeaS system (a revenue management analytics subsidiary of SAS).	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Pre-requisites: MAT 142 or higher; Minimum 72 hours
TDM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR visiting University Student
TDM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		
TDM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
TDM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-6	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TDM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		
TDM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TDM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-3		
TDM	520	Sustainable Thinking in TDM I	First in a series of two courses introducing students to the basic concepts of sustainability and their application and implications for tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	521	Sustainable Thinking in TDM II	Second in a series of two courses focusing on how to measure, assess, and plan for sustainability in the tourism industry.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 520 with C or better
TDM	530	Destination Planning I	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TDM	531	Destination Planning II	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): TDM 530
TDM	540	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Students learn to define sustainable development; explain the importance of sustainable food systems, recognize the relationship between local food systems and global food challenges; connect the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; define leakage in reference to tourism and food; and create and apply sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	550	Sustainable Tourism Bus Mgmt	Through case study analysis, students learn how sustainability impacts business operations, how successful sustainable businesses identify and assess alternative resource management techniques, and evaluate operational models for embedding sustainability practices into their business models.	N	LEC	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	561	Best Practices Preparation	First in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A destination or business is identified to be used as a case study.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Pre- or corequisite(s): TDM 521 with C or better
TDM	562	Best Practices Presentation	Second in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A presentation of a best practices case study is conducted for the class.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): TDM 561 with C or better
TDM	570	Sustainable Tourism	Critically examines the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	SEM	N	GNA	Watts College of Public Service & Community Solutions	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	101	Prof Ed: Student Experience	Introduces all new first-time Mary Lou Fulton Teachers College students to the unique elements, culture, challenges and opportunities of their university. Introduces future educators to the professional educator series and the themes that underpin the series, to include design-thinking, principled innovation, professional identity and legacy-minded thinking and actions.	N	SEM	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College freshmen OR Visiting University Student
TEL	102	Prof Ed: Community Contexts	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Includes a service-learning component addressing a community-identified concern.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College student
TEL	111	Exploration of Education	Education as an instrument in the development of the individual and society and its significance as an American Institution.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	171	Prof Ed Series: Equity in Educ	Analyzes educational issues that are limiting equitable education experiences for children, youth and adults in educational systems birth-college and proposes solutions to meet those needs.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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TEL	200	Social Embeddedness	Serves as a pathway toward self discovery and professional identity. Course readings, reflections and self assessments help students develop personal and professional goals and goal-setting strategies. Course assignments provide students with a greater level of understanding regarding the reciprocal influences among community and culture and the student's life experiences. Students have an opportunity to clearly define themselves and share topics they are passionate about, as well as locate how they might fit into and contribute to their community.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	201	Pro Ed: My Community Footprint	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Future educators enhance their knowledge, skills and attitudes of the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	202	Pro Ed: My Impact	Advances future educators' knowledge and skills as they apply the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions to become master learners and change agents for civic engagement and toward their personal and professional growth and fulfillment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	203	Planning/Implementing Instr	Prepares future educators to work with participants in a variety of learning environments and diverse contexts. Emphasizes innovative outcome-based and learner-centered approaches to planning and implementing instructional activities constructed using collaborative design-thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	208	Literacy in a Changing World	Examines literacy in the social context and the changing nature of literacy in the 21st century. Areas of inquiry include how students' cultural backgrounds and identities can serve as resources for literacy learning, linguistic diversity, media literacies, multi-modal literacies, and critical literacies. Explores issues of equity and social justice including the role of literacy to empower people into making positive changes in their lives and society.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
TEL	212	Understand/Culturally Diverse	Surveys cultural and linguistic diversity in American education, including education equity, pluralism, learning styles, and roles of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU & C	Credit is allowed for only MCE 230 or TEL 212 OR Visiting University Student
TEL	215	Intro to Child&Adolescent Dev	Emphasizes the cognitive, social-emotional, and physical domains of child and adolescent development. From a knowledge base of theory, research, and current issues, students apply learning to developmentally appropriate principles and practices that guide relationships and learning experiences for all children. Uses available technologies; emphasizes the complex ecosystem of culture, ethnicity, family, and school.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	270	Prof Ed: Connect Rsrch to Prac	Assists students in shifting from a student perspective of education to a teacher perspective of education as they explore what it means to be a professional educator.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	271	Prof Ed: Inclusivity in Pract	Students continue shifting from a student perspective of education to a teacher perspective of education by connecting newly expanding knowledge with experiences in the field to assist them in preparing for a career as an educator with specific focus on inclusivity and supporting students with a range of learner assets, abilities and needs.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	300	Community, Family & Education	Addresses education in a community and family context. Analyzes education and identifies education-focused community challenges in a broad variety of settings and across multiple times and places.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200 OR Visiting University Student
TEL	310	Instructional Thought & Action	Compares and contrasts theories of learning as well as how to identify and apply instruction based on these theories to foster rich student learning. Addresses a diversity of learners and perspectives, in differentiated contexts, across all specific professional educator pathways. Teaches aspects of instructional design and planning as prospective educators design instruction to meet student needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	311	Instrctn/Mgmt in Inclusive Cls	Planning and delivering instruction, organizing and managing classrooms, and making adaptations for English language learners and students with special needs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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TEL	313	Technology Educational Setting	Focuses on using technology in an education setting and addresses the integration of technology in curricular areas for all students. Students receive a broad-based introduction to using and integrating technology into many different educational settings.	N		LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): General Studies CS course OR Visiting University Student
TEL	315	Child & Adolescent Development	Physical, cognitive, social, and emotional development during childhood and adolescence; developmentally appropriate principles and practices to facilitate development for all students.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
TEL	316	Teaching and Creativity	Engages students in critical thinking and the complex terrain of aesthetic theory and intellectual, academic work and teaching practice. Students apply aesthetic consciousness teaching by teachers developing imagination, creativity, and intuition as tools to use every day in their classrooms. Emphasis on how teachers can integrate the arts into the curriculum, use the arts to support academic content, and develop aesthetic consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. The arts will also be studied as multi-cultural and socio-cultural phenomena, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society. consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. Also studies the arts as multicultural and sociocultural phenomena in support of these ends, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society.	N		LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Education majors; Minimum junior standing
TEL	317	Inst Thgt Act: Learn Envl Mgmt	Develops and implements strategies and intervention for effective management of the classroom to promote the learning of students with and without disabilities. Creates plans for maintaining a positive, productive and culturally relevant classroom environment. Incorporates age-appropriate techniques addressing individual, social and academic competence.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
TEL	318	Instr Thght & Actn: Assess Lrn	Prospective educators examine theories of assessments exploring why we assess, how we assess, and the ways assessments are interpreted in classroom settings. Emphasizes designing, selecting, implementing, and/or evaluating appropriate assessments specific to pathways and for students with diverse educational needs across all grade levels.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	320	Intro to Gifted Education	Overview of a variety of issues related to gifted students from preschool through high school. Provides background in order to create an optimal experience for students, parents and teachers when working with gifted students.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	331	Lang & Lit Methods K-8	Applies research-based strategies for delivering differentiated literacy instruction, assessment, intervention and remediation. Content focuses on autonomous (science of reading) and ideological (social practices of reading) models that incorporate culturally and linguistically responsive and sustaining practices for literacy. In addition, educators apply the elements of systematic phonics-based instruction and address the unique learning needs of students with dyslexia and other reading challenges.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	332	Disciplinary Literacy Methods	Prospective educators identify the specific literacy practices and challenges students face within their academic discipline and apply research-based instructional strategies for delivering differentiated instruction. Content focuses on instructional and assessment strategies in order to develop essential academic vocabulary, comprehension and critical thinking within each academic discipline.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	340	Families, Communities&Cultures	Helps prospective educators develop an understanding of the role that families and communities play in schooling practices and the skills to cultivate culturally responsive practices.	N		LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): minimum junior standing OR Visiting University Student
TEL	370	Prof Ed: Building Prof Network	Engages prospective educators in collaborative experiences to examine their profession in relation to educational systems. Students develop skills and practices needed to work effectively as a professional educator. Emphasizes the importance of a well-developed professional network and student advocacy.	N		SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student

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TEL	371	Prof Ed: Educational Policies	Engages prospective educators in collaborative experiences to examine their profession in relation to educational policies. Exposes students to pressing educational issues with an emphasis on the importance of understanding the influence of policies, procedures and regulations as they relate to the education system.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	400	Innovation in Ed Endeavors	Pursues innovative solutions to social problems with the courage and ability to impact change in individuals, communities and organizations. Reviews community problems, challenges or areas of improvement; learns underlying principles of social enterprise; and develops innovative methods that empower individuals and support educational initiatives.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300 OR Visiting University Student
TEL	404	Issues in Ed&Policy Reform US	Specialized topics related to current issues in education with a focus on education reform efforts from the late 20th century into the 21st century. Explores current reform efforts in education as part of the larger public policy agenda in the United States, analyzing how external influences shape present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-reqs for TEL 404
TEL	405	History of Ed&Policy Reform US	Specialized topics in education history with a focus on education reform efforts from pre-Revolutionary War time to the end of the 20th century. Explores the past reform efforts in education as part of what was happening historically in the United States, analyzing how those efforts have shaped the present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 405 or TEL 494 (History of Education & Policy Reform in the US)
TEL	410	Leadership and Advocacy in Ed	Educators who take an active stance through advocacy and leadership are well-equipped to create societal change. Students learn about styles of leadership that are fitting for this need, study advocacy techniques, then position themselves as advocates and leaders as they create a plan, with goals, to address an identified community problem, challenge or area of improvement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300; TEL 400 OR Visiting University Student
TEL	420	Curri Strat for Gifted Learner	Overview of a variety of ways in which to create and adapt curriculum for gifted students from preschool through high school. Provides a broad range of resources for classroom teachers to use in order to help gifted students work to their full potential in a heterogeneously grouped classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	430	Learning Outside of School	Studies and methods from a variety of nonschool environments for learning and development. Teaches knowledge and skills such as methods of identifying and evaluating free-choice learning that occurs through museum going, hobbies, family learning, media, community programs, sports, public health campaigns, and more. Covers career opportunities for educators in key creative environments besides classrooms.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 430 or TEL 494 (Learning Outside of School) OR Visiting University Student
TEL	431	Learning in Workplaces	School isn't the only place where people learn! Once you get a job, most of what you learn will occur as you do your job, and that kind of learning is crucial to the development of competence and expertise. Surprisingly, seventy to eighty percent of this important learning takes place outside of formal training. Studying learning in workplaces illuminates how learning happens universally, and helps teachers and trainers design effective educational programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 431 or TEL 494 (Learning in Workplaces) OR Visiting University Student
TEL	470	Prof Ed:Career Growth&Planning	Engages prospective educators in collaborative experiences to explore career paths within education, develop career plans, and consider routines for continuous professional growth. Exposes students to pressing educational issues with an emphasis on career planning, development and growth.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	471	Prof Ed: Principled Educator	Prepares prospective educators to examine their professional role as an advocate for themselves, their students and families, and their profession. Emphasizes the importance of understanding their professional influence as principled educators on educational practices and systems through advocacy efforts.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum junior standing OR Visiting University Student

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TEL	489	Undergrad Projects & Research	Topics include history of educational research, literature reviews, research methodology, resources, individual project ideas and the creation of a research prospectus. Students may also work in teams to complete theses or projects if their interests intersect. Open to all students; however, Honors and Scholar's Academy students will be planning and/or implementing theses or creative projects.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 489 or TEL 494 (Undergrad Projects & Research in ED)
TEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): Barrett Honors student
TEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		
TEL	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
TEL	502	Explr Ed: Child/Adolescent Dev	Provides a general pedagogical framework in the cognitive, social-emotional and physical domains of child and adolescent development and how to apply that knowledge to the learning programs for neurotypical and exceptional learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
TEL	505	American Educational Policy	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	510	Instr Design Plan & Assessment	Covers learning theories, instructional design, planning and assessment. Students plan a developmentally appropriate instruction that differentiates instruction and experiences for all learners. Explores formal and informal assessments and how they can be used to identify learners' strengths and needs and accordingly adjust instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): Elementary Education MEd or Secondary Education MEd or Special Education MEd student
TEL	511	Research & Evaluation in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research and foundation for future research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	517	EquLm Env: Decision &Action	Researches, develops and implements strategies and intervention for effective management of classroom behavior for students with and without disabilities. Creates plans for maintaining a positive, productive and culturally relevant classroom environment. Incorporates age-appropriate techniques addressing individual, social and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	531	Instr Mth Language & Literacy	Apprentice teachers apply research-based strategies for delivering differentiated literacy instruction, assessment, intervention and remediation. Content focuses on autonomous (science of reading) and ideological (social practices of reading) models that incorporate culturally and linguistically responsive and sustaining practices for literacy. Also addresses phonics, the unique learning needs of students with dyslexia and other reading challenges.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	532	Literacy Across Disciplines	Prospective educators identify the specific literacy practices and challenges students face within their academic discipline and apply research-based instructional strategies for delivering differentiated instruction. Content focuses on instructional and assessment strategies in order to develop essential academic vocabulary, comprehension and critical thinking within each academic discipline including face to face and digital learning environments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	540	Cultvat Network Cultral Respon	Helps educators develop an understanding of the role that families and communities play in schooling practices and the skills to cultivate culturally responsive practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): degree- or nondegree-seeking graduate student

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TEL	570	Educator Scholar Community 1	Pre-service and apprentice teachers examine a relevant challenge in an educational context and support a K-12 learner with navigating complex challenges in classroom contexts. This is the first course in a three-part series.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
TEL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	701	Advanced Quantitative Methods	Data collection, analysis, interpretation in studies using quantitative methods of inquiry situated in action research, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 701 or TEL 701
TEL	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 702 or TEL 702
TEL	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 703 or TEL 703
TEL	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 704 or TEL 704
TEL	705	Systems Change and Leadership	Focuses on theoretical foundations of systems literature with a focus on education. Examines literature and scholarship that builds knowledge of educational theory on systems, and applies important related concepts to real-world problems of practice as they appear in students' current work context.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	706	Intro to Doc Studies	Prepares doctoral students for success, focusing on balance and identity, communities of practice, leadership and innovation, action research, and organization systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Leadership and Innovation EdD major; Credit is allowed for only TEL 598 (Introduction to Doctoral Studies) or 706
TEL	707	Reading the Research	Interprets and analyzes qualitative and quantitative research literature, as well as how to integrate information in professional scientific writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	708	Collab Apprch Data-Inf Dcn Mkg	Examines data-informed decision making in educational learning communities, by focusing on data collection, analysis and interpretation, as well as the impact of collaborative learning communities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 708 or TEL 791 (Collab approaches data-informed decision-making)
TEL	709	Dir Field-Bsd Study	Under the supervision of a faculty member and with the assistance of a mentor, students understand and develop their leadership, innovation and research skills. Provides an opportunity to (1) work with and learn from a leader outside students' normal spheres; (2) develop students' capacity to learn independently --to study, reflect, assess and expand their abilities as leaders, innovators and agents of change; and (3) extend and enrich student knowledge through reading and writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 709 or TEL 792 (Directed Field Based Study)
TEL	710	Innov Disseminating Res	Provides graduate students with the opportunity to develop a post-degree impact plan related to the scholarship and innovations they developed through the EdD program. A post-degree impact plan enlists research and practices related to the idea of knowledge mobilization in order to optimize access to and engagement with scholarly insights and innovations. Enables students to develop strategies and resources to extend the reach and enhance the impact of their scholarship, innovations and resources among relevant stakeholder groups.	N	SEM	N	YGB	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 710 or TEL 791 (Innovations in Disseminating Research)

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TEL	711	Strategies for Inquiry	Develops knowledge and skills for research and program evaluation that foster innovation in education that leads to improved student learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	712	Mixed Methods of Inquiry	Methods for combining qualitative and quantitative inquiry in action research, evaluation, and data-based decision making.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	713	Advanced Qualitative Methods	Data collection, analysis, interpretation in studies using qualitative methods of inquiry, situated in action research, evaluation and data-informed decision making.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	100	Seminar in Entrepreneurship	Exposes students to careers in entrepreneurship by inviting diverse entrepreneurs to discuss their businesses and backgrounds and share their stories on starting and growing their ventures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		
TEM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	200	My Technology Venture	Introduces the concept of entrepreneurship through venture practice and self-reflection to help students understand their potential roles in a technology-driven marketplace.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 110 with C or better OR Visiting University Student
TEM	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 or TEM 230 OR Visiting University Student
TEM	250	Design Methodology	Outlines product design method and provides opportunity to apply it to a design project including identifying needs, setting target specifications, generating and selecting concepts, prototyping and testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
TEM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	300	Career Mgmt Entrepr & Innovtr	Career-focused seminar in preparation for students' post-graduation plans, including venture startup, job search or graduate school acceptance. Focuses on career relationship-building techniques, job-readiness skills and the development of a professional portfolio.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Prerequisite(s): minimum junior standing OR Visiting University Student
TEM	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
TEM	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
TEM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		

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TEM	400	Technology Entrepreneurship	Explores the fundamentals and principles of entrepreneurship suitable for both undergraduate business and technology students. Instructs students on the strategic path through entrepreneurship: ideation, validation, market selection, intellectual property, fundraising, launch and profitability. Also explores the impact and implications of technology. Through this course, students have the knowledge and skills to cultivate their ideas into businesses.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; ENT 305 or TEM 200 with C or better; Credit is allowed for only TEM 400 or TEM 598 (Technological Entrepreneurship) OR Visiting University Student
TEM	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431 OR Visiting University Student
TEM	450	Design for Developing World	Provides sustainable solutions to social problems that will improve the lives of residents in lower socio-economic communities through the integration of technology and social entrepreneurship.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): junior, senior, or graduate standing
TEM	455	Global Impact Entrepreneurship	Increases awareness and understanding of the complex nature of global poverty. Students think comprehensively about sustainable ways to address by focusing on business ventures and product design, which take advantage of local resources, networks and institutions. Students design and refine technologies and services that address the needs of communities in the developing world. Examines piloted technological innovations by ASU students in the west African nation of Ghana, India, and Latin American countries such as Mexico and Peru. Analyzes technological initiatives that have been piloted in Ghana and Peru, and attempts to create sustainable business ventures for them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; TMC 320 with C or better; minimum junior standing; Credit is allowed for only TEM 455 or TEM 598 (Global Impact Entrepreneurship) OR Visiting University Student
TEM	481	Consulting Project	Students learn about technology entrepreneurship through consulting with leaders and owners of businesses, not-for-profit organizations and government agencies. Requires both out-of-class consulting projects and in-class instructional sessions focused on technology entrepreneurship and business strategy, including financing, promoting, leading and growing the venture and consulting skills.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): senior standing; Pre- or corequisite(s): TMC 430 with C or better OR Applied Science (Operations Management) BAS major OR Visiting University Student
TEM	482	Startup Workshop	Students launch their own technology-related ventures with collaboration and mentorship from colleagues and faculty. This class centers on hands-on learning and is appropriate for beginning as well as maturing start-ups. Students build their entrepreneurial networks and engage with stakeholders related to their business (customers, industry partners and investors). Explores the tactical challenges that come with developing an enterprise and forms strategies and methodologies to advance the venture.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TEM 200 with C or better; senior standing OR Visiting University Student
TEM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		
TEM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6		Prerequisite(s): Barrett Honors student
TEM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TEM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-3		

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TEM	530	Stats Bootcamp for Industry	Provides foundational coverage of topics such as probability theory, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, and simple linear regression analysis, appropriate for first-year graduate students. Additionally, provides a fundamental understanding of probability theory and statistics as used in typical industrial applications. Presents and discusses illustrative problems from technology, entrepreneurship, aviation and psychology. Where possible, explores problems from the student's discipline to insure that the principles of statistics and probability are studied in the context of the student's chosen field.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only TEM 530 or 598 (Statistics Bootcamp for Industry)
TEM	531	Disruptive Innov & Tech Evol	Focuses on the processes of innovation management of various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams, with an emphasis on disruptive innovation and the evolution and forecasting of technology. Provides a survey of innovation management concepts and various technological forecasting and prediction approaches, both mathematical and nonmathematical, in conjunction with a study of the evolution of selected technologies and the management problems associated with emerging technologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	532	Advanced Analysis of Systems	Introductory course in systems analysis and modeling. Develops basic competence in formulating and solving models of systems to aid decision making. Topics include: introduction to systems and systems modeling; a simple what-if analysis; overview and review of linear algebra and matrices; problem formulation and model development in optimization; linear programming (LP), economic interpretation and sensitivity analysis; introduction to integer programming (IP); special linear programs; project schedule network development and computations; overview of heuristic algorithms. Uses selected software in examples, short problems and in a project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	101	Principles of Global Mgmt	Provides the basic concepts of management with particular emphasis on the functions of management in a global environment. Examines the antecedents of globalization; the role of global environments in shaping organization structure, strategy and processes, as well as the basic principles of managing in complex cross-cultural settings. Emphasizes global institutional arrangements and macroeconomic issues. Serves as an introductory course that provides a quick snapshot of key issues facing global corporations today with each of the major themes explored more fully in the set of advanced courses that follow. Applies global business concepts in understanding global political economics, legal systems and socio-cultural environments.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	
TGM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): maximum 25 hours OR Visiting University Student
TGM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	200	Prins of Acctng/Global Orgs	Focuses on financial and managerial accounting and examines how outsiders evaluate businesses, nonprofits and governmental operations and how economic events are reflected in a firm's financial statements, including balance sheets and cash flow statements. Examines key accounting methods that impact a company's financial statements and how they are used by shareholders, creditors, employees and customers to make credit decisions and/or value a firm's equity securities.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
TGM	204	Princip of Mktng/Global Orgs	Explores the ways in which global marketing strategies reflect a deep understanding of markets and create valuable offerings for customers globally. Broadly speaking, marketing strategy making is comprised of segmentation, targeting and positioning. Segmentation is the process by which we segregate a relatively heterogeneous mass market into relatively homogeneous market segments. Targeting is the process by which we analyze opportunities and identify those customers where our business has the greatest prospects for success. Positioning is the process of assembling the "total offering" (product, service, distribution and price) and communicating the benefits of this "total offering" to the members of our target market. Challenges students to think critically about global competition. As such, rote learning of terms and concepts is not sufficient to prepare students to manage a business in global markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	268	Intercultural Comm/Global Mgmt	In a dynamic and interactive format, this course presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Examines theories of communication (the basic concepts, principles and skills vital for understanding and improving communication across racial, ethnic and cultural differences). Places students in experiential situations in order to develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world. Explores in depth intercultural theories from the TGM three regional areas--China, Latin America and the Middle East.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student
TGM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	300	Princip of Finance/Global Orgs	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	310	Supply Chain Ops for Gbl Orgs	Studies the major elements of supply chain management. Students learn how to design an integrated supply chain and evaluate the fit with the business strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	312	Big Data in the Global Economy	Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important aspects of Big Data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereq(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student; Pre- or corequisite(s): ECN 221 or STP 226 with C or better if completed OR Visiting University Student
TGM	353	Regional Mgmt Environment	Provides future global managers with the analytical tools and frameworks for understanding the political, social, cultural and economic contexts within which business activities take place in various countries and regions throughout the world.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	391	Gibl. Bus. & Prof. Dev. Skills	Required for all continuing and transfer Thunderbird students that enhances critical thinking, communication, presentations and networking skills desired for success in upper-division TGM-specific classes as well as for international internships, study abroad and post-graduation work experiences.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student
TGM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		

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TGM	400	Advanced Topics/Global Mgmt	Focuses on advanced topics in global management designed to synthesize knowledge acquired from global business, language and cultural coursework.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student; minimum 60 hours
TGM	410	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N	LEC	N	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereqs w/min C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cult(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
TGM	430	Intl Trade Reg Econ Agreements	Explores recent trends in global finance and trade and in regional trade agreements (GFTAREAs), especially as they pertain to national business environments and the global political economy. Also explores how globalization and regionalism impact business decision making and policy making at the national level and in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	460	Global Risk Assess & Mgt	Covers concept of regional and country risk as it affects foreign businesses and investors, and develops participants' abilities to identify, analyze and design management strategies for mitigating such risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	468	States and Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of opportunities in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	SB & G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	478	Cross-Cultural Comm & Negotiat	This two-part course begins by focusing on cross-cultural communication with the ultimate purpose of helping improve global mindset. In the second part, focusing on cross-cultural negotiation helps students understand the theory and processes of global negotiation so that they can negotiate successfully in a variety of settings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	487	Global Entrepreneurship	Deals with entrepreneurship and new venture creation that takes place in international and global settings. As such, it integrates many of the ideas, concepts and frameworks of international business and global management with those of traditional entrepreneurship. Starts at the firm level, looking at basic ideas of how entrepreneurs start and launch new ventures. It then expands to the industry level, looking at the role of business models in new venture creation, industry analysis, and scaling promising ideas. Focuses on the international and global levels, on topics such as cross-national comparative entrepreneurship, born-global new ventures, entrepreneurship in emerging and developing countries, and the global venture capital market. Also includes a number of special topics in global entrepreneurship, such as social entrepreneurship and family business. Finally, students have the opportunity to apply theory.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	489	Mltntnl Organizational Ldrshp	Explores multinational organizational management strategies, organizational practices/systems, and related managerial skills which are an essential part of global competitiveness. Develops skills to understand the application of analytical tools and frameworks, executes complex strategy, and builds and leads competitive teams and people.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student

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TGM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): Barrett Honors student
TGM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TGM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TGM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		
TGM	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	501	Global Accounting	Focuses on two aspects of accounting: financial and managerial accounting. Financial accounting is about how outsiders view and evaluate an organization such as a business, a not-for-profit entity or a governmental operation. It focuses on how economic events are reflected in a firm's financial statements including a balance sheet, an income statement and a statement of cash flows. It also focuses on how financial statement information is used by various stakeholders such as shareholders, creditors, employees and customers in making decisions with regard to the firm, including credit decisions and/or valuing a firm's equity securities. Analysis and equity management accounting involves providing information, both financial and non-financial, to management and employees to aid in planning, organizing activities, and monitoring and controlling business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	502	Financl Mgt Gbl Value Creatn	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	503	Global Marketing	Provides a managerial orientation to the topic of global marketing in today's complex, rapidly changing international business environment. A key focus is developing competitive advantage by creating customer value. Course participants gain a fundamental understanding of marketing strategy and marketing analysis (i.e., customer, competitor and company analysis) as well as an appreciation of the basic strategic issues involved in market segmentation, market targeting and market positioning in the international arena. Also examines the major tactics/tools used by global marketers to facilitate the management of their international marketing plans (i.e., product development, pricing strategies, marketing communications, distribution management). Emphasizes developing skills for entering new markets and sustaining or growing current markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	504	Managing Org Gbl Perspective	Covers two key aspects of successfully managing an organization in a global environment. The first component covers the strategic direction of the organization, and the second component discusses how to harness the power of people in the organization to build teams and lead people to execute the strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	505	States & Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of the opportunities they will encounter in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	506	Communicating & Negotiating	This dynamic and interactive course provides managers with an effective framework for achieving their goals in global management settings. Assists students to prepare for and execute time-tested strategies for achieving communication competence with persons from different cultures. Also covers negotiating in the global context. Not only examines theories of culture and communications, but also places students in an experiential situation to gain valuable skills for overcoming obstacles in global management environments. Through use of cases, multicultural team exercises, student negotiation exercises and simulations, equips the global manager with tools to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	507	Gbl Organizational Consulting	Consulting course provides an overview of the field of consulting and the role of the management consultant. Familiarizes students with the tools and techniques used during a consulting engagement, including project entry, problem definition, intervention planning, data collection, problem solving, alternative generation, feedback, project exit, client relations skills and project management. Requires students to work in project teams to solve business problems in organizations through the application and expansion of technical skills acquired in other classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TAM 541 OR TGM 517; TGM 545; TGM 557
TGM	508	RBE I: Emerging Mkts	As an extension of states and markets in a global economy, provides an analysis of contextual factors that influence dynamic business environments by employing frameworks that integrate political, economic, geographic, and sociocultural factors in a specific regional area.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 505 or 515
TGM	509	RBE II: Developed Economies	Provides future global managers with the analytical tools and frameworks for understanding the developed markets business environment. Also provides a broad understanding of those economies in order to be successful therein. In order to succeed as managers in the environment, requires knowledge of political, social, cultural, economic, business and economic factors, both across the developed markets landscape and within individual countries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 505 or 515
TGM	510	Strat in Gbl Development	The nuances and challenges of development in the less-developed countries (LDCs) and in the transition economies of the world. Analyzes the economic, social, political, cultural and other challenges that LDCs and transition economies face, and the strategies they are employing in their quest for development.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	511	Global Financial Accounting	Accrual accounting concepts, teaching students how to prepare and understand the content of traditional financial statements. Topics include the recognition and measurement of accounting events; preparation and analysis of income statements, balance sheets and statements of cash flows; and the measurement of revenue, expenses, assets, liabilities and stockholders' equity, including both U.S. and international principles.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	512	Managerial DecisionMngGblEnv	Teach students how to use accounting information to help organizations succeed in a rapidly changing global environment. Introduce a variety of tools and techniques such as cost allocation, cost-volume-profit, relevant costing, performance evaluation, budgeting, transfer pricing, customer profitability analysis, nonfinancial performance evaluation, and/or sustainability reporting. By applying these tools and techniques to different types of global organizations, students learn how to use accounting information to make effective decisions. Throughout the course, emphasizes integrating other subject areas such as strategy, data analytics, entrepreneurship, corporate social responsibility, and/or behavioral economics into the decision analysis process.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 501, 511 or 517
TGM	515	Navigating Gbl & RBES	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. The first part of the course develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. The second part deals with the regional business environment. This part begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the business environment. While the emphasis is on a specific region, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	517	Gbl Acct & Fin Mgmt	Two-part course covering global accounting and global financial management. The first section covers financial accounting from a global perspective. Students have an opportunity to learn how to develop and use financial accounting information for external decision-making purposes. The second section equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	518	International Finance & Trade	Covers the two major areas of international economics: international trade and international finance. Offers a detailed look at the foreign exchange market, instruments and practices, as well as related theories and government policies. Also places a significant focus on the macroeconomy and its relationship to capital flows and economic relations with other countries. Also examines the flows of goods and services in international trade and the policies that relate to this trade.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	519	Global Financial Engineering	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	521	Mnging for Gbl Value Creation	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	522	Global Financial Decisions	Covers modern practices of financial decision-making and management in a market-oriented multinational framework. Topics include financial technology, cryptocurrencies, capital structure decisions, risk management involving financial derivatives and currency hedging, cross-border investment decisions, subsidiary management, and cross-border merger and acquisitions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 517 or 521
TGM	523	Global Investments	Surveys the investment management landscape and delivers the theory and technology attendant to intellectual and/or career pursuit in this domain. Topics explored include the domestic and international aspects of portfolio optimization; emerging markets and global asset allocation; security analysis and selection; stock sorting and screening algorithms; mutual fund performance decomposition and benchmarking; fixed income analytics and metrics; earnings quality; the franchise factor; distress prediction and credit scoring models; the behavioral finance salient; and financial derivatives from a portfolio management perspective, inter alia. A respectable floor of numeracy is advisable; a CFA® emphasis prevails.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	524	Valuation of the Private Firm	Provides a practical and theoretical understanding of the valuation of non-trading private enterprises. Basic theory, methodology and application of modern financial concepts as they relate to the valuation of these types of business organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	525	Gbl Fin/Forecast Pvt Firm	Focuses on finance concepts as applied in the real work by entrepreneurs. From the firm perspective, covers topics relevant to entrepreneurial finance, including financial statements, funding plans and venture capital. Prepares prospective general managers of entrepreneurial companies on how to make the financial decisions involved with building high-risk, high-growth new enterprises. Prepares business-minded students for careers focused on entrepreneurship and corporate entrepreneurship. Through the use of excel-based modeling, combined with lectures and readings from assigned sources, students understand aspects in finance that are critical to the entrepreneurial venture. Prepares students to deal with the various financing resources available to these same enterprises, including venture capitalists, angel investors, investment bankers and other financial stakeholders.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	526	Global Portfolio Management	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	527	Global Private Equity	Overview of the private equity industry globally, its role in economy, its participants, its operations and its recent development. Covers different phases of the private equity investment process and the players involved at each stage. Phases include: setting up a fund, selection and screening of investments, exploring valuation techniques, managing and exiting investments. Emphasizes the practical aspects of private equity transactions through case studies and interactions with private equity professionals. Recommended for students interested in private equity investing, investment management, investment banking, entrepreneurship and entrepreneurial finance. Does not require previous experience in private equity or financial skills beyond those taught in the finance core classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517

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TGM	528	Business Intelligence	Examines the role that business intelligence—the systematic collection, synthesis and analysis of information on the external operating environment—should play in strengthening corporate strategies and decision making. Through lectures and client-sponsored competitive assessment projects, the course has two goals: to help students understand this management tool and to train them to be able to utilize it for competitive advantage. Also addresses the related issues of corporate/industrial espionage and information security.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 545
TGM	529	Multinational Corp Fin (FORAD)	Applies the theories of managerial and international finance to the problems of multinational treasury management. Topics include issues and techniques in multinational funds transfers; identifying and measuring foreign exchange and interest rate risk; multinational tax planning; managing foreign exchange and interest rate risk; hedging instruments, including forward contracts, options and swaps; and financially engineered synthetics. Students also manage the financial functions of a computer-simulated multinational corporation, construct a biennial report summarizing their management results and present oral reports to a board of directors consisting of professors and invited business professionals.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	530	Big Data in the Gbl Econ	Creating a sustainable IT-dependent competitive advantage is a major goal for forward-thinking multinational organizations. Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important technological aspects of big data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 557
TGM	531	Multinational Value Chain	Exposes students to the strategies and challenges associated with moving goods, services, information and associated payments across complex, globally dispersed value chains to end customers. Topics include value-chain structures, supplier partnerships, cross-cultural issues, technology, data networks, global logistics, risk management and value-chain mapping. A field project provides students with an opportunity to work in teams applying the course concepts to increase customer value in a real value chain.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	532	Leading Global Projects	Provides an overview of the global context of project leadership. Global project leaders work at the intersection of project management, leadership in a project context and cross-cultural effectiveness. Exposes students to key project leadership approaches including stakeholder management, methods for increasing inclusion on global project teams and building high-performing global project teams. Uses case studies, a simulation, several exercises and interactive discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	536	Global Risk Assess&Mitigation	Firms of all kinds are attempting to improve their competitive positions by strategically managing the flow of services, raw materials, work-in-process inventories and finished goods on a global basis. Global managers must be concerned with the ever-increasing number of diverse risks to their businesses posed by political, social, physical and financial forces at work globally and in specific regions and countries. Centered on state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring, assessing and forecasting risk, and methods of mitigating risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	537	States, Business and Trade	Explores the political economy of trade and multinational trade agreements, especially as they pertain to national business environments and the global economy. Covers the domestic and international politics of trade, the formation and composition of multinational trade agreements, and the implications for national and multinational companies.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 505 or 515

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TGM	538	Corporate Partners	Experiential consulting practicum involving a highly visible, rapidly growing or start-up company or entity. Engages client in a specific activity such as strategic planning, opportunity assessment, policy or procedure redesign or competitive assessment. Requires the student team to integrate various skills encountered in Thunderbird's fundamental core courses to produce the desired deliverable. Students interact directly with the client during the semester to gain insights into the client's circumstances. The project results in complex deliverables and culminates in the presentation and recommendation to the client of suggested operational options or strategic directions.	N	PRA	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517; TGM 545; TGM 557
TGM	540	ManagingPeople:GlobalPerspctv	Explores the mix of organizational practices and people that can be the basis of sustainable competitive advantage in the contemporary global business environment. Topics covered include cross-cultural issues in managing people, traditional and emerging models of organizations, organizational culture, leadership, employee skills and motivation, reward systems and change management.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	541	CompettveStrategyGiblPerspecti	Focuses on choices that impact the performance of the entire organization. Examines central questions: Why are some industries and firms more profitable than others? How do firms create competitive advantage? How does the choice of strategy drive organizational performance? How do firms manage scarce resources in the pursuit of strategic objectives? How do firms create unique and sustainable industry positions?	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	545	Global Leadership & Strategy	Creating value in modern organizations comprises the strategy that the organization deploys and the way in which its leaders execute the strategy to achieve superior economic returns. Thus, this course covers two distinct but interconnected domains dealing with competitive strategy and leadership. The strategy segment focuses on how organizations choose their strategic position, build sources of competitive advantage, and design their value proposition and business models. The leadership segment illustrates the integral role that leaders play in helping an organization realize its strategic potential and focus on what it means to compete through people in a way that produces positive results for individuals, teams and organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	546	Regional Industrial Analysis	Builds on concepts introduced in competitive strategy, global strategy and regional business environment. Focuses on the analysis of the strategies adopted by competing players and their impact on the global strategies pursued by the parent organization in the context of regional industry dynamics. Covers a spectrum of topics ranging from industry cluster formation, country-specific advantage, industry versus industry ecosystem analysis, the government's role in industry and regional development including national innovation systems, demand and supply chains in regions, and emerging market challengers. Applies multiple decision-making tools and frameworks to understand the Information and Communications Technology (ICT) industry in Asia Pacific--the fastest growing region in the world. Tools and frameworks learned in this course are applicable to other regions and other industries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 545
TGM	547	LeadngChg&Transfrmtn GlobalEnv	Increases understanding of the nature of organizational change (through conceptual frameworks, readings and discussions). Specifies skills needed for managing change. Enhances sensitivity to the contribution and consequences of the human element as related to change. Helps student's own capacity to "thrive on change."	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545
TGM	548	Global Strategy	Focuses on how global firms create value. Covers topics ranging from country-specific competitive advantage and the notion of distance to alternative global strategy archetypes and sources of competitive advantage for emerging market multinationals. The approach applies multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545

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TGM	549	Global Leadership	Explores the concept of effective leadership within and across a variety of organizations and global contexts. Definitions of "leadership" and strategies for becoming an accomplished leader abound. Rather than attempt to narrowly focus our attention on definitions, leadership styles, and supposedly "definitive" theories of leadership, focuses on the demands of and competencies associated with excellent leadership. Most importantly, examines how leaders sense the need for and then manage organizational change. Given the increasingly complex world we live in and the ongoing and rapid rate of change, change management has become one of the most critical of leadership skills.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	551	Global Marketing Strategy	Covers the major concepts involved in creating and sustaining customer value, analyzing the firm's macro environment, choosing whether or not to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	552	Global Marketing Management	Covers the functional aspects of marketing including decisions relating to segmentation, targeting, branding, product development, pricing, distribution and advertising/promotion. Students integrate their knowledge of these topics through the creation of an international marketing plan based on a product or service and in a country approved by the instructor.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 557
TGM	553	Gbl Customer Decision Making	Both theoretical and applied, the backbone and foundation of the course draws heavily from behavioral economics, consumer psychology and consumer information processing. Equips students with a comprehensive understanding of how and why consumers make decisions the way they do in the market (B2C). Although consumers desire to make rational decisions that maximize their utility, in reality, more often than not, they tend to make irrational and suboptimal choices. Offers why such phenomena occur and how consumers can improve their quality of decision making. Offers a richer appreciation of the heuristics and decision-making rules that consumers use and biases that affect consumer decision making.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	554	Global Marketing Research	Focuses on the use of marketing research techniques for competitive advantage in a global business context. Develops the necessary skills to plan a research project, collect data, analyze the data and report findings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	555	Gbl Product and Pricing Dev	Combines global product development (GPD) and global pricing (GP). GPD examines how an organization can identify, develop and manage products for global markets. Pays special attention to issues such as the product development cycle, innovation charter, barriers to product development and effectively organizing for product development. GP provides in-depth knowledge of the field of global pricing, covering the psychology, economics and tactics of pricing for a business enterprise, product or service. Better pricing knowledge usually converts to better bottom-line results. Students learn pricing theory and tactics as well as develop hands-on pricing skills, all aimed at improving profitability. These skills can be applied across the full range of professional contexts--as entrepreneurs, brand managers, business unit managers, management and M&A consultants.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557

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TGM	556	Gbl Strat Services Mkt	Services have come to dominate our economy. Yet there remains a naive belief that services marketing and management is a simple adaptation of goods marketing and management. Unlike physical goods, services are co-produced with customers at a time, and in a place, of the customer's choosing. This co-production directly involves an organization's front-line employees. As a result, it is more difficult for services to be inventoried and checked for quality assurance. Provides a thorough understanding of the management and continuous improvement of service operations, including a thorough understanding of the role of customers in service operations such that service firms can design effective service experience so as to minimize service failure. Provides students with an end-to-end hands-on customer experience management (e.g., customer satisfaction and loyalty), project that involves survey design, customer experience model development, data collection, data analysis, and recommendations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	557	Globl Marketing&Data Analytics	Global companies are embracing digital technologies to better understand their customers' journey and subsequent word-of-mouth discussions consumers have about their product online. This course is about understanding how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. It delves into the understanding of global data, choosing whether to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	558	Gbl Data Analysis Strat Mkt	Provides an understanding of the key marketing issues through an examination of various marketing decisions. Course complements other marketing courses by adopting a more hands-on and practical approach to strategic market planning. A combination of lectures and discussions, analyses of cases, software demonstrations, and a simulation game facilitate understanding of the material. Requires a solid understanding of marketing planning, statistics and quantitative methods.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	559	GBL Brand Management	Provides a managerial orientation to the topic of global brand management. Prepares participants for a career either in the role of the "traditional brand manager" or in the role of a "manager with brand-related responsibilities." A major portion of the course is working on a global brand field project to develop a brand management/marketing plan for a brand and brand challenge of student (and team) choosing. Emphasizes the ethical dimension of global brand management; focuses on an individual brand ethics project.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	572	Gbl Import Export Mgt	Requires understanding theoretic, strategic, finance and practical business principles complicated by the differences in business practices, culture, laws and currency regulations of multiple countries and regions. Focuses on important pragmatic aspects of selling and acquiring goods and services to and from trading partners in foreign markets. Today's global marketplace, while dynamic with opportunity, contains rapidly changing physical, fiscal, technological and regulatory considerations for those who manage such activities. Important concepts to be learned include establishing strategic direction, identifying and managing a multitude of risks, protecting company assets, lowering the cost of finance, building winning business relationships and profitably expanding business into new markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	573	Country Risk Management	Global managers must be concerned with potential risks to their businesses posed by political, social and financial forces at work globally and in specific regions and countries. This course centers around state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring and forecasting risk and mitigating risk. Recommended for students interested in business risk forecasting as a function in and of itself, and in operations, marketing, and any arena in which business investors must be able to anticipate and manage risks.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	575	Global Affairs	Examines major theories and concepts in global affairs including different schools of international relations thought and levels-of-analysis determinants of foreign policy. These theories and concepts provide key insights on contemporary global affairs issues, and are applied to real-world events and case studies. Covers the role of political economy in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	576	Global Affairs Methods	Covers research methodologies and analytical techniques used to investigate global issues. Topics include research design, quantitative methods, qualitative methods, policy analysis and database resources. These tools are used in government, in intergovernmental organizations, in nongovernmental organizations, and in the private sector. They are applied to key issues in global affairs such as democratization and human rights, income inequality and development, political violence and international security, and political risks to foreign investors.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	577	International Organizations	Examines the role of international organizations in global affairs particularly in the areas of international peace, security, humanitarian and environmental issues. Focuses on intergovernmental organizations such as the United Nations and International Criminal Court as well as regional organizations such as the North Atlantic Treaty Organization and the African Union. Also focuses on international nongovernmental organizations such as Amnesty International and International Red Cross. Examines the impact of as well as the constraints on international organizations in real-world events and case studies. Covers major economic intergovernmental organizations in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	579	Communicating Global Context	In a dynamic and interactive format, presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Not only examines theories of communication, but places students in experiential situations in which they develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	581	Negotiating in Global Context	Provide students with knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 506
TGM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		

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TGM	585	Corp Social Resp Gbl Context	Provides knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability. Corporate Social Responsibility (CSR) has become essential for corporations seeking to succeed in an intensely competitive global economy. Provides an in-depth understanding of what CSR is, how to apply it effectively in an international context and how to manage it well. Using a case-based approach, focuses on actual experiences of corporations that have used CSR strategies successfully--and unsuccessfully--to draw practical lessons for international managers. Incorporates several guest lectures from executives who share their firsthand experiences with CSR in various regions of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 586
TGM	586	Gbl Entrepr & Sus Bus	Presents an overview of entrepreneurship and sustainable business. Involves acquiring a basic understanding of both the global entrepreneurship space and the sustainable business space. Students become familiar with the definitions applicable to these two topics, the basic place and role of these two domains in the global economy, and the significance of the two domains in the creation of jobs and sustainable economic activity.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	Thunderbird School of Global Management	Thunderbird School of Global Management	1		
TGM	596	Thunderbird Experiencial Pract	Capstone course offering students an opportunity to apply the full range of professional skills they have acquired during graduate business and management studies. Consists of participation in a consulting project for a client system in an emerging market country, including Central America, Latin America, the Middle East, Africa, central and eastern Europe, and the whole of Asia apart from Hong Kong, Japan, Singapore, Australia and New Zealand. Serves all sectors: public/governmental, private and NGO/nonprofit.	Y	PRA	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): TGM 506; TGM 517; TGM 545; TGM 557
TGM	597	Thunderbird PLD	Capstone course designed to equip students with the skills to transition from students to global managers in the 4th industrial revolution. Students create and continuously update their Career Development Plan. This plan requires them to research career options, commit to a career focus, devise a strategy, implement a networking plan, create career documents such as resumes and cover letter, prepare for interviews. Students also create their own Personal Leadership Development plan.	N	LEL	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	601	Megatrends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. The lead professor for this Phoenix-based course partners with faculty from ASU colleges including the Ira A. Fulton Schools of Engineering, the Walter Cronkite School of Journalism and Mass Communication, the School of Public Affairs, and the Sandra Day O'Connor College of Law (and possibly other ASU schools or units). Representative topics span from crisis management in an era of hypercompetition and mass communications to the global legal implications of digitalization (e.g., Industry 4.0) and the emerging role of NGOs in partnering with private companies to seek shared value and sustainability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	602	Sustainable Futures	Provides broad exposure to emerging and future transdisciplinary environmental drivers and their influences on business, nonprofit organizations and governments. Focuses on four interwoven themes. First, how do global firms create, experience and leverage shared value creation to drive innovation and growth. Second, exploration and application of contemporary models for mapping and understanding today's complex, dynamic systems, ecosystem development and cluster formation. Third, by delving into the function of multilateral agencies such as the WTO, WHO, UNHRC, UNCTAD and WBCSD in shaping and driving environmental influence on organizations, and understanding the public policy value chain. And, fourth, unbundling the impact of environment on innovation and growth success drivers in "next generation" manufacturing industries such as pharmaceuticals or precision engineering; on service industries such as banking or nonprofit organizations; on governments; and on NGOs.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	603	Shaping Markets	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. Integrative approach that seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	604	Capturing Digital Dividends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to innovation, technology and creativity. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from understanding technology trends and their drivers to structuring for innovation and creativity success, and the leader's role and relevant skillset therein. From input to process to output, this module provides access to leading-edge best practices for seeing what others miss (successfully finding and developing valuable innovation), effectively assessing, prototyping, and validating, and winning adoption for new ideas and insights (and fostering these skills in others).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	605	Delivering Results I	Provides broad exposure to emerging and future transdisciplinary drivers and their influences on strategy formation in global organizations. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. The approach will be integrative in that it seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	606	Delivering Results II	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to execution of strategy on global and local levels. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from implementing global strategy, evaluating and responding to regional dynamics in fast expanding markets, bridging potential headquarter and field chasms, and executing in peak dynamism. This module provides access to leading-edge best practices for implementing strategy in fast expanding, emerging markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
THE	100	Introduction to Theatre	Surveys theatre production from the Greeks to contemporary theatre.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): non-Theatre and non-Film students only
THE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	320	History of the Theatre I	Centers on the historiography of world theatre as art, as a medium of cultural expression and as a social institution. Involves, along with the reading of plays, advanced methodological approaches to studying the creation of theatre within cultural and political contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre or Performance and Movement BA major; THF 220 OR New College student; junior or senior standing OR Visiting University Student
THE	321	History of the Theatre II	Traces major developments in theatre production from the 17th century to modern times.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre BA major; THF 220 with C or better OR New College student; minimum junior standing
THE	322	Theatre History and Culture	Critically examines major developments in theatre history, historiography, and dramatic literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): non-Theatre majors OR Visiting University Student
THE	325	Play Reading/Education Theatre	Assigned independent readings in plays for secondary school play production.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theatre student OR Visiting University Student
THE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	406	American Multicultural Film	Examines Native, African, Asian, and Latina and Latino American films and film artists in cinema history and production.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
THE	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
THE	421	Shakespeare: Stage and Film	Examines Shakespeare's plays as written texts, stage performances, and film productions. Focuses on play reading, performance analysis, and film critique. Online course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
THE	422	Latinx Theatre and Film	Explores issues of cultural identity through critical analysis of theatre and film by Latinx artists in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Pre-requisites: ENG 102, 105 or 108 with C or better OR Theatre Masters students
THE	423	African American Theatre	Readings, discussion, video of the history and dramatic literature of African American playwrights and theatre companies in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters student
THE	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425
THE	426	Pre-Columbia Thtre of Americas	Selected studies in pre-Columbian theatre forms and texts of the Aztecs, Mayans, Caribbean islands, and North American Indians.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters Theatre student

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THE	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
THE	430	History of Fashion I	Fashion is rarely set but rather evolves with eras of upheaval between one generation and the next. Clothes express the personality and rank of the individual creating an instantaneous and lasting impression. Introduces over 400 years of Western fashion history drawing parallels between the fashion and the period in which it existed.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum sophomore standing OR Visiting University Student
THE	431	History of Fashion II	A century of fashion history, drawing parallels between the fashion and the period in which it existed.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only THE 431 or THE 494 (History of Fashion II)
THE	440	Experimental Theatre & Perform	An inquiry into avant-garde and experimental theatre/performance from the 19th century to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Theatre undergraduate student; ENG 101, 105, or 107 with C or better; THE 320 or 321 with C or better; THF 220 with C or better OR Visiting University Student
THE	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
THE	480	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum junior standing; Credit is allowed for only THE 480 or THE 581
THE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Theatre or Film student
THE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors Theatre or Film student; ENG 101, 105 or 107 with C or better
THE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THE	500	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): graduate School of Film, Dance and Theatre major
THE	504	Studies/DramaticThry/Criticism	Surveys dramatic theory, criticism, and aesthetics as they relate to contemporary performance.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THE	505	Critical Theory & Performance	Surveys contemporary theories of culture as they apply to theatre and performance studies.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre graduate student
THE	510	Studies in Literature	Assigned individual reading program in standard sources and masterpieces in theatre literature. May be repeated for credit.	N	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
THE	520	Theatre History and Literature	Surveys historiographical issues and dramatic literature related to key periods in theatre history.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THE	524	Adv Studies/Theatre for Youth	In-depth study of the history, literature, and contemporary practice of theatre for young audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Theatre Education or Theatre for Youth student
THE	525	Adv Studies/Theatre Youth II	Project-oriented explorations of theory and practice of contemporary theatre for youth audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THE 524 with B or better
THE	562	Literary Management Workshop	Advanced literary management for the contemporary theatre, including trends in new play development, festivals and productions throughout the United States. Participation in Arizona Playwriting Competition.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 560 with B or better
THE	581	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THE 480 or THE 581

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THE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
THE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Art Theatre student
THE	600	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THE	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Must be a Theatre Education or Theatre for Youth student or have instructor approval.
THE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THF	101	Acting Introduction	Introduces basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): non-Theatre student OR Visiting University Student
THF	125	Orientation Film/Dance/Theatre	Orientation to university and school resources and procedures. Academic success strategies, mentorship, goal setting. Community-building exercises.	N	REC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prereq(s): Film (Film & Media Prod) BA, Film (Filmmaking Practices) BA, Film and Media Prod BFA, Perform & Movement BA, Theatre (Acting) BA, Theatre (Design & Prod) BA, or Theatre (Theatre Expl) BA major; freshman standing OR Visiting University Student
THF	126	SoFDT First Year Seminar	Community building within the School of Film, Dance and Theatre; connections with faculty; foundations of creative process; attendance and written response to performance and media events.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Film (Film and Media Production or Filmmaking Practices) or Performance and Movement or Theatre (Acting or Design and Production or Theatre Exploratory) BA major OR Visiting University Student

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THF	160	Introduction to Storytelling	Introduces the nature, structure, and operations of story, as well as the functions of narrative in societies and cultures. Several modules introduce a different mode of storytelling. Students learn to create their own stories utilizing several of the approaches introduced in the modules.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Film BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major OR Visiting University Student
THF	215	Design and Composition	Introduces the aesthetic principles and practices employed by designers/artists of the stage and screen, including: basic knowledge of the elements and principles of design; conceptualization of design for theatre and film; director/designer collaboration models; methods and modes of visual communication for theatre and film (storyboards, renderings, models, etc.).	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Digital Culture (Theatre) BA, BA in The Arts (Entertainment Design), BA in The Arts (Fashion Design) major, Sidney Poitier New American Film School major, or School of Music, Dance and Theatre major OR Visiting University Student
THF	220	Principles/Dramatic Analysis	Analysis, evaluation and interpretation of dramatic literature for theatrical and cinematic production. Emphasizes the traditional canon of dramatic literature, the language of narrative film, and traditional structures and forms of drama for stages and screens.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): Sidney Poitier New American Film School major or School of Music, Dance and Theatre major; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): THF 126 with C or better if completed OR Visiting University Student
THF	370	Seminar: Acting Concentration	Designed for a student's continued growth as a preprofessional acting student. Provides a series of master workshops focused on craft. In addition, under the guidance of the faculty facilitator, students receive career guidance and information to strengthen connections to the institute, the school and the university.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): admitted to Theatre (Acting) BA concentration; Credit is allowed for only THF 370 or THP 394 (Acting Concentration Seminar) OR Visiting University Student
THF	397	Prof Development Seminar	Preparatory course for senior projects. Students research and create senior project proposals while formalizing faculty mentorships.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Film BA or Performance and Movement BA or Theatre BA major; minimum 56 hours OR Visiting University Student
THF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THF	497	Senior Project	Mentored practicum for culminating capstone projects.	Y	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Film BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major; FMP 385, FMP 398, or THF 397 with C or better; minimum 56 hours
THF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	102	Acting I: Fundamentals	Explores and applies basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance (Music Theatre) BM major or Performance and Movement BA major or Theatre BA major OR Visiting University Student
THP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	201	Theatre Production Crew	Participation in university mainstage theatre production backstage and board operations.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THP	202	Acting II: Meisner Technique	American theatre technique based on improvisation and emotional truth. Rehearsal techniques and application of action to dramatic text.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THP 272 with C or better; THP 277 with C or better; Pre- or corequisite(s): THF 220 with C or better if completed
THP	212	Puppetry with Children	Construction and manipulation of puppets; practice in performance skills. Emphasizes educational and recreational uses of puppetry by and with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
THP	213	Intro to Technical Theatre	Procedures of technical theatre production and demonstration. Topics include design and construction of scenery, lighting, and properties.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): BA in The Arts, Digital Culture (Theatre) BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major OR Visiting University Student
THP	214	Introduction to Costuming	Basic principles of costume design, construction, and survey of selected historical periods including makeup styles. Costume design project and production experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): BA in The Arts, Digital Culture (Theatre) BA, Film and Media Production BFA, Performance and Movement BA, Theatre BA, Theatre (Acting) BA, or Theatre (Design & Production) BA major OR Visiting University Student

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THP	218	Introduction to Directing	Overview of emergence and practice of the director's craft. Explores director's role and responsibilities, play selection, conceptualizing, ground plans, blocking.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Film and Media Production BFA, Theatre BA, Theatre (Acting) BA, or Theatre (Design & Production) BA, or Theatre (Exploratory) major; THF 220 with C or better; THP 102 with C or better OR Visiting University Student
THP	251	Student Production Board I	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for acting, directing, design and technology.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	260	Introduction to Playwriting	Basic skills of playwriting including exercises in monologues, scenes, and conflict and resolution, leading to completion of a one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
THP	272	Introduction to Stage Movement	Movement vocabulary and physical training in relaxation, alignment, conditioning, and stage presence. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	277	Acting: Intro to Voice	Exercises and techniques to free the voice and improve quality and projection. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	301	Theatre Production	Participation in university mainstage theatre productions (e.g., acting, construction, stage management).	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 213 or 214 with C or better OR Visiting University Student
THP	302	Acting III: Adv Techniques	Advanced practice in methods, skills, and research for rehearsal and performance.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THF 220 with C or better; THP 202 with C or better; THP 272 with C or better; THP 277 with C or better; minimum junior standing
THP	307	Acting: Ten-Minute Plays	Acting in theatre projects, productions, or collaborative performances in directing classes.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	311	Creative Drama with Youth	Theories, materials, and techniques for facilitating improvisational drama with children and youth in classroom and community settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 25 hours OR Visiting University Student
THP	317	Stage Management	Readings in stage management and participation as a stage manager in a university theatre production.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre undergraduate or The Arts BA major OR Visiting University Student
THP	318	Intermediate Directing	Explores approaches to staging and composition. Studio work culminates in presentation of a fully rehearsed ten-minute play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 218 with C or better; THP 213 or THP 214 with C or better
THP	330	Costume Design	Explores the elements of design, taking abstract ideas and formulating them into concrete forms. Encourages the student to experiment with different ideas and mediums. Emphasizes design basics, research, figure drawing, and beginning rendering techniques. Uses projects that involve complex script and character analysis to promote the student's ability to effectively communicate.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better
THP	331	Costume Construction	Uses of materials and techniques for stage costumes with actual construction of period apparel. May be repeated for credit.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 214 with C or better
THP	332	Makeup	Practical guide to the theory and practice of theatrical makeup. Basic principles of stage makeup design and application. Develops and increases skills in the application and design of the medium through a combination of reading assignments, lecture, demonstration and supervised practice sessions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre (Design and Production) major or minimum 45 hours; Credit is allowed for only THP 332 or 494 (Makeup/Advanced Makeup)
THP	335	Advanced Stagecraft	Advanced construction techniques through applicable projects in carpentry and steel fabrication for theatre production in scenery and properties.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with C or better or THP 301 with B or better; minimum sophomore standing
THP	340	Scene Design	Studio projects in designing scenery for contemporary stages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): BA in The Arts or Digital Culture (Theatre) BA or Film and Media Production BFA major or THP 213 OR Visiting University Student
THP	344	Drafting	Fundamentals of and practice in graphic techniques for the stage. Introduces computer-aided design for the stage.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Digital Culture (Theatre) BA major or THP 213 with C or better OR Visiting University Student
THP	345	Lighting Design	Principles and theories of stage lighting design, including design process and execution, advanced exploration of design implementation and equipment; course includes drafting and drawing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Minimum Junior standing or Design & Production student with minimum sophomore standing

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THP	350	Sound Design	Introduces the equipment, process, and recording techniques used in sound design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre or Film or Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better
THP	351	Arts Management	Management, organizational behavior, and human behavior in the arts; marketing, financing, and budgeting for the arts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts BA major or minimum 45 hours; Credit is allowed for only THP 351 or THP 394 (Management and the Arts) OR Visiting University Student
THP	355	Media Design for Performance	Introduces the fundamental skills, practices and theories for media and projection design for live performance, building on traditional areas of design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre, Film, Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better OR Visiting University Student
THP	360	Intermediate Playwriting	Continued development of skills in playwriting through specific exercises and completion of a full-length play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite: THP 260 with C or better or Prerequisite(s): ENG 210
THP	372	Acting: Advanced Movement	Movement techniques for the classical and nonrealistic theatre.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 272 with B or better; minimum junior standing OR Visiting University Student
THP	377	Acting: Voice and Speech	Introduces phonetic alphabet, exercises, and techniques for voice and speech improvement. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 277 with B or better; minimum junior standing OR Visiting University Student
THP	385	Acting: Shakespeare&Span Goldn	Rehearsal and performance of Shakespeare and other classical playwrights. Emphasizes understanding poetic language, vocal and physical skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with B- or better; THP 277 with B- or better
THP	387	Screen Acting	Professional film acting techniques, terminology and on-camera experience.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Filmmaking Practices BA major, Performance and Movement BA major, Theatre major or minor; THF 101 or THP 102 with C or better OR Film and Media Production major or minor OR Visiting University Student
THP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	401	Theatre Practicum	Production assignments for advanced students of technical production, stage and business management, and design.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 301 with C or better or Master of Arts or Master of Fine Arts student
THP	411	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 311 with A- or better or graduate student; Credit is allowed for only THP 411 or THP 511 OR Visiting University Student
THP	418	Advanced Directing	Studio work building on skills learned in intermediate directing, culminating in the presentation of a fully rehearsed one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 318 with C or better or Herberger Master of Art or Master of Fine Arts student OR Visiting University Student
THP	420	Acting:Solo/Collaborative Perf	Creation and development of original performance art works combining text, movement, multimedia, visual art; the actor as writer, designer, performer.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102; minimum junior standing
THP	428	Theatre Capstone/Sr Project	Senior projects course that includes a culminating creative synthesis of student's knowledge.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 397 with C or better
THP	431	Advanced Costume Construction	Specialized training in costume construction problems and crafts with projects in tailoring, millinery, and period accessories.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre Design & Production or Digital Culture (Theatre) or The Arts BA major; THP 214 with C or better; THP 331 with C or better
THP	435	Technical Direction	Seminar in fundamental principles and practices of technical directors as managers, engineers and artisans in theatre production.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with B or better; THP 301 (Theatrical Construction) with B or better OR THP 301 (Production) with B or better; minimum junior standing; Credit is allowed for only THP 435 or 494 (Technical Direction)
THP	440	Advanced Scene Design	Advanced studio projects in designing scenery for a variety of stage forms.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better, or must be a Theatre Scenography or Performance Design student
THP	441	Scene Painting	Studio projects in painting stage scenery.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better, or Theatre Scenography or Performance Design student

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THP	442	Rendering Design & Production	Techniques in drawing and rendering for scenic, costume, and lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prereq(s): BA in The Arts (Entertain Design or Fashion Design), Dig Cltre (Theatre) BA, Film (Film & Media Prod) BA, Film (Filmmaking Practices) BA, Film & Media Prod BFA, Film & Media Prod minor, Theatre BA, or Theatre minor OR Visiting University Student
THP	445	Advanced Lighting Design	Specialized techniques in stage lighting. Advanced application of design process, graphic techniques of design presentation, and use of qualities of light.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 345 with C or better or Theatre Scenography or Performance Design student; THP 444 with B or better
THP	448	AutoCAD for Live Entertainment	Comprehension and practice of two-dimensional drafting techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better or Theatre Design and Production major; Credit is allowed for only THP 448 or 494 (AUTOCAD)
THP	449	AutoCAD 3D	Comprehension and practice of 3D drafting and rendering techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 448 with C or better; Credit is allowed for only THP 449 or 494 (AutoCAD 3D)
THP	450	Theatre Organization and Mgmt	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Herberger Institute for Design and the Arts student
THP	451	Student Production Board II	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for the binary officers and administrators only.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite(s): THP 450 OR Visiting University Student
THP	452	Arts Entrepreneurship Seminar	Challenges students to learn how individuals have used their creative skills to create new arts business models. Case studies examine how creativity can spur new opportunities in the arts industry. Students complete their own project proposals.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 with B or better
THP	455	Advanced Media Design	Explores advanced skills, practices and theories for media and projection design for live performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance, Film, Theatre, or The Arts BA major; THP 355 with C or better; Credit is allowed for only THP 455 or THP 555 OR Visiting University Student
THP	457	Digital Portfolio	Cross-disciplinary exploration of methods, technologies and aesthetics of portfolio presentation for professional designers and artists.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts (Fashion Design) or Theatre (Design and Production) major; minimum 56 hours; Credit is allowed for only THP 457 or THP 494 (Digital Portfolio)
THP	482	Theatre for Social Change	Interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite: Minimum sophomore standing
THP	483	Acting: Viewpoints/Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal and performance, and creating new work.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 202 with C or better; minimum junior standing or Performance and Movement major or MFA major
THP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Theatre or Film student
THP	487	Advanced Screen Acting	Builds on basic principles of on-camera acting to develop a range of acting styles in different formats on movie, television, computer and mobile device screens. Practical production includes a web series and community-based public service announcements.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 387; Credit is allowed for only THP 487 or THP 494 (Acting: TV and Film II)
THP	489	Acting: Audition Tech/Career	Familiarization with the business of performance: preparation and techniques for auditioning; self-promotion and marketing strategies; grant resources, interviews, and unions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 102 or THF 101 with B or better; THF 220 with B or better; minimum junior standing OR Visiting University Student
THP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-7		Prerequisites: Theatre Design & Production student
THP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	501	Performance: Solo Performance	Students begin to define their mission in art. Emphasizes the actor as a solo storyteller, speaking as herself or himself.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-8		Prerequisites: Master of Arts or Master of Fine Arts Theatre student

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THP	505	Graduate Colloquium	Orientation to graduate study of theatrical practice; cohort development, introduction to the advanced literature and media in the art form.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Master of Fine Art Theatre student
THP	511	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THP 411 or THP 511
THP	512	Puppetry Workshop	Surveys puppetry in education, puppetry as an art form in design and performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student
THP	513	Touring Theatre	Provides an understanding of the theories and aesthetics of touring theatre and a practice in its conceptualization, creation, administration, and production. Examines a variety of styles and methods of creating "movable" theatrical material, focusing on forms that require minimal scenic and design support. Focuses on process and working toward a quality product.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Fine Arts Graduate student; Credit is allowed for only THP 513 or 598 (Touring Theatre)
THP	514	Prjcts/Community-Based Theatre	Theories and techniques of improvisational theatre with emphasis on youth. Stresses professional development through projects combining research, theory, and practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite: Master in Arts, Master in Fine Arts or PHD Theatre major
THP	517	Stage Management	Advanced study of the principles and practices of stage management in the professional theatre.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	518	Advanced Directing Lab	Active discovery of directing concepts through practical exercises and collaboration; deconstruction of contemporary/classic literature. Explores director as primary artist.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	519	Directing: Works in Progress	Advanced projects in directing concentrating on a collaborative process among director, playwright, actors, and designers. Focuses primarily on new scripts or adaptations of literature.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	520	Directing the New Play	Advanced methods and studies in directing, focusing on new play development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	521	Performance I: Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination; emphasizes physical diagnostics and development.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	522	Performance I: Acting & Voice	Advanced studio work in the performer's voice; emphasizes physical awareness, vocal anatomy, training, and interpretation of texts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	523	Performance II:Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	524	Performance II: Acting & Voice	Advanced studio work in the performer's voice.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	525	Design I: Concept & Collaborat	Conceptual structures of the design process in theatre; development of creativity, flexibility, and communication in the collaborative process.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	526	Design I: Drawing & Rendering	Development of drawing and rendering skills, techniques, and evaluation in the presentation, realization, and communication of performance design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	527	Design II: Concept & Collabor	Offers students the chance to develop advanced skills in creating fully realized design ideas, particularly in working with new and experimental forms. Through the coursework, readings, and projects, students develop new methods and systems of thought for dealing with challenging dramatic works.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre major
THP	528	Design II: Visual&Presentation	Advanced skills and techniques in rendering, visualizing and presenting design ideas and materials for performance.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	529	Viewpoints and Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal, performance and creating new work.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): School of Film, Dance and Theatre MFA or PhD student
THP	540	Scene Design Applications	Conceptual and practical application of the design process including graphic and sculptural projects. Practical design problems investigated in a lab.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Art or Master of Fine Art Theatre student
THP	545	Lighting Design Applications	Advanced studio projects in stage lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Fine Arts Theatre student
THP	550	Theatre Org & Management	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Theatre student

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THP	551	Arts Management	Advanced study of the principles and practices of arts management in the nonprofit and for-profit sectors.	N		SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	552	Arts Entrepreneurship	Project-based course in new venture creation for the arts.	N		SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	555	Advanced Media Design	Advanced applications for skills and practices in media design for live performance, including content creation, systems design, and playback.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre student; Credit is allowed for only THP 455 or THP 555
THP	556	Performance Technology	Examines issues surrounding the integration of live performance and digital media. Students study the work of contemporary practitioners and theorists and experiment with creating their own works of digital art.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Theatre major
THP	557	The Digital Portfolio	Crossdisciplinary exploration of methods, technologies, and aesthetics for portfolio presentation for professional designers and artists.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
THP	560	Dramatic Writer's Workshop	Practice and study of creating characters, dialogue, scenes, plays, and monologues for the stage.	N		LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	561	Scripts in Progress	Studio work with the instructor centered on revisions of original plays.	N		IND	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THP	571	Dev 1: Cncpt,Collab & Authorsh	Includes five primary objectives: (1) To understand the continuum between leadership and authorship; (2) To analyze collaboration through collaborative projects; (3) To learn strategies for developing a hunch and creating a source book; (4) To conceptualize a devising project starting from three distinct prompts: visual images, literary adaptations, and site-specific space; (5) To develop a blueprint for a devising process on paper that articulates time lines, budgets, development process, methods and conceptual design.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	572	Devising II: Methods	Introduces three devising methodologies: (1) Moment Work by Tectonic Theatre Project; (2) Frantic Assembly; and (3) site-specific/immersive theatre and audience participation. Divided into three units that introduces the vocabulary of each methodology and an autocours (student-devised work) using that specific methodology.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571
THP	573	Devising III: Projects	Culmination of previous coursework where students form groups for the entire semester and determine (1) their leadership/authorship structure; (2) their "hunch" or idea; (3) their preferred devising method(s); and (4) their collaborative process. Over the course of the semester, each group begins developing a 30-minute original devised work to be showcased at the end of the semester for graduate faculty and an invited audience. The pieces can occur in a FAC space or site-specific location.	N		STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572
THP	574	Devising IV: Production	Culmination of previous coursework where students continue to work on their culminating applied project. Each weekly seminar, a student presents a work in progress of his or her original, devised work and receives mentorship, peer review and feedback.	N		SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572; THP 573
THP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y		PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	582	Theatre for Social Change	Advanced, interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N		LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate or Doctoral student
THP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Theatre student
THP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		

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THP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Fine Arts Graduate student
THP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Fine Arts graduate student
THP	611	Sites of Inquiry-Performance	Examines scholarly, artistic and pedagogical pursuits in fieldwork and site-based studies in theatre, drama and performance. Requires development and execution of a research project.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Pre- or corequisite(s): THE 500 or 700
THP	618	Theatre for Youth Practicum	Practical experience in theatre for youth projects: improvisation, education, production.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisites: Master of Fine Arts or PhD Theatre for Youth student
THP	649	Design Studio	Projects include design of scenery, costume, lighting, or sound for lab or mainstage productions.	N	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisites: Master of Fine Arts Theatre student
THP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Fine Arts or PhD Theatre student
THP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
TMC	110	Understanding the Enterprise	Introduces essential functions required in technology-based and innovative enterprises and viewed in the context of their relationship to each other; examines the enterprise's role in society.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		
TMC	310	Promotion of the Enterprise	Whether they are entrepreneurial ventures or established companies, effectively promoting products is key to enterprise performance. Focuses on how to promote products from ideation to launch to growth. Covers understanding customers (values, behavioral economics); formulating strategies (landscape, segmentation, positioning); tactics (4P's); networks and data; digital promotion and growth. Also reviews quantitative techniques (conjoint, DOE, optimization). Applies concepts to market challenges and derives optimal solutions through analysis, strategy and tactics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 110 with C or better or minimum 56 hours OR Visiting University Student
TMC	320	Funding the Enterprise	Focuses on financial resource management techniques utilized by U.S. domestic companies and covers the unique aspects of revenue accounting and its application to company operations. Concepts covered include: data capture of requisite information from various computer systems; determination of revenues generated from sales of products and services to customers; in-depth analysis of operational expenses; preparation of accounting and financial data; monthly accounting requirements; account reconciliation; monthly/quarterly/annual reporting; development and analysis of financial reports and billing. Emphasizes accounting, planning and valuation concerns, as well as financial trends and industry prospects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Biotechnology and Bioenterprise BS or Business (Business Administration) BA major or TEM 194 (Introduction to Technology Development) with C or better or TMC 110 with C or better OR Visiting University Student

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TMC	330	Leading the Enterprise	Comprehensive overview of leadership strategies and development as it applies to individuals, organizations and events. Applies leadership development to workplace dynamics such as technology management, entrepreneurship and globalization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better; TMC 110 with C or better OR non-Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better OR Visiting University Student
TMC	331	Quality Assurance	Instrumentation and methodologies for materials testing and quality control in various manufacturing processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TMC	410	Enterprise Operations	Emphasizes basic principles of enterprise operations management, including productivity, strategic management, global environment, forecasting, capacity planning, new technologies, location and layout strategies, supply-chain management, inventory control and scheduling. Uses common decision-making issues and related qualitative and quantitative techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	430	Enterprise Strategy & Innov	Enterprise strategic plan development and implementation, concepts of open innovation; vision, mission, steps of strategic plan development; strategic goals, objectives, tasks, schedule, resource considerations; organization's strengths and weaknesses; environmental opportunities and threats; strategy implementation, impact assessment and refinement, organizational- and management considerations, theory and practice of open innovation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Aeronautical Management Technology (all concentrations) BS major OR Applied Science (Aviation) BAS major OR MGT 300 or TMC 330 with C or better; Credit is allowed for only TMC 430 or OMT 494 (Strategic Planning & Management)
TMC	470	Enterprise Planning & Implemen	Investigates and tests tools and techniques for effective design and management of enterprise projects and programs using computer applications. Develops and demonstrates teambuilding and leadership skills in course projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 570 or TMC 470 OR Visiting University Student
TMC	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 430 with C or better; senior standing
TMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-7	L	Prerequisite(s): Fulton Polytechnic School undergraduate; ENG 101, 105 or 107 with C or better; minimum 2.25 GPA OR graduate student; minimum 2.25 GPA
TMC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Pre Requisites: Graduate or Non Degree Students Only
TMC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
TSS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	501	A Deep Hstry US/Mex Brldrs I	Using a comparative and relational approach, the seminar explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from pre-contact times to the Mexican American War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	502	Found of Transborder Studies	Using a comparative and relational approach, explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from the Mexican American War to the recent past. Centers on comparative economic growth and development of Mexico and the United States, the impact of unequal development on the border region and its people, and the development of a transnational society in the U.S./Mexico borderlands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	503	Epistemologies & Trnsbrdr Thgt	Examines different approaches to the production and critique of knowledge relevant to transborder social, political, economic, cultural, and institutional structures and processes. The complexity of these structures and processes require transdisciplinary methods of inquiry that go beyond a single set of disciplinary assumptions. Explores the transdisciplinary articulation of theory and method, and considers the strengths and limitations of various approaches and critiques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	504	Tools for Transborder Research	Focuses on the selection of methods appropriate for transborder research. Considers the pitfalls of conducting monodisciplinary research in a stratified, differentiated and multicausal world; the most robust methods used in various approaches; the main methodological obstacles to transdisciplinary research; and the challenges of using mixed methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	505	Theories & Methods Migration	Divided conceptually in three broad analytical areas: (1) migration with an emphasis on demography, (2) health with an emphasis on epidemiology, and (3) public policy analysis. Provides basic training in the application and interpretation of quantitative and qualitative methods and techniques commonly used in researching these areas. Applies these techniques to issues that are specific to the reality of transborder and/or transnational contexts. Students are required to apply and present an analysis in their field of interest which demonstrates their grasp of theory and method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	506	Theory & Mthds Transborder MEC	Overview of the interdisciplinary theories and methods employed to research and analyze media and creative cultural production. Objects of analysis include literature, film, live performance, theater, Web-based media, popular culture production, and visual arts. Required readings elucidate strengths, limitations, and applicability of particular theories and methods to different types of creative expression and media production as well as to their historical and political contexts. Students engage with, critique, and contribute to the theories and methods presented in the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	507	Thry Mthds Transbr Clt Lng Lm	This course familiarizes graduate students with literature on relationship between culture, language, and learning, and their theoretical and methodological underpinnings within a transborder context.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TSS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	596	Transborder Studies Capstone	Culminating capstone experience of the Masters of Advanced Study degree in Transborder Studies, allowing students to develop a project tailored to their interests, needs and goals. Each student has a minimum of one faculty member to support the capstone project.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): Transborder Studies MAS student
TSS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	601	Intrnshp Trnsbd Studies	Academic internship helps students become full participants in globalized, transnational contexts through a combination of practical experiences in community organizations, readings about transnational life in globalized contexts, reflection, and discussion.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	607	Colloq Transborder Studies	Provide students the opportunity to present their skills, learning, research, and topical interests before an open forum of faculty and students at the beginning of their third year and prior to their dissertation research.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	608	Trnsmt Trnsbdr Stds Pblcs Inst	Provides students with the most recent advancements in presenting the underlying theory, methods, and techniques in transborder analysis and application. Designed to enter multiple audiences in public, professional, academic, and school settings, course takes advantage of the latest developments in multimedia, print, and electronic technology, film, and print in order to provide systematic and detailed learning opportunities. Provides the basis of developing capacities to create and develop learning modules, and programs on issues of transborder political ecology, economic transformations, cultural development and emergence, literary constructions and projections, and issues of identity, class, and gender. Course is conducted bilingually and makes use of Spanish- and English-language resources. For this reason, it is advisable, but not required, that students are at least conversationally proficient with Spanish and English.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	609	Prspctvs Dsgn Trnsbd Studies	Provides doctoral students with the necessary tools to prepare a research proposal that could be submitted as a dissertation prospectus or to a funding agency. Students bring a well-formulated idea of the kind of research they wish to pursue for their dissertation. They also bring a clear idea of the relevant concepts, literature and methods, required to complete the proposal.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	611	Comp TB Prspctvs Lrng	This small class emphasizes discussion, presentations by students, and written research papers. Surveys theoretical and methodological aspects related to the use of comparative and transborder perspectives to the study of education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	612	Pol Cult Lrng Chng TB Cntxt	Examines a variety of development and learning issues confronting linguistically and culturally diverse groups with an emphasis on immigrant children and families. Includes such topics as: (1) Theoretical foundations and their related impact on organizing interventions for learning and socialization. (2) The intersection of the development of language, culture, and learning in context of linguistic diversity and immigration. (3) The influence and impact of public policy on language minority groups of immigrant backgrounds.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	614	Blngsm Dvrs Acq Prct Ctxts	Examines bilingualism, language in society, and languages in contact in transborder contexts and bilingual schooling.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): PhD student

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TSS	615	Dial Inq TB Cnbxts	Introduces the application of dialectical inquiry in value-relevant grounded research methods as a complementary approach to value-free scientific inquiry into practical problems in transborder cultural acquisition, language development, and learning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
TWC	214	Storytelling with Data	Students read and discuss theories of data visualization as well as produce a wide range of visualizations using a variety of data sets. Students learn how to process data to discover what's important about the data, and how to use data to tell visual stories that attempt to persuade, inform and engage audiences. Students learn basic principles of design and narrative to help them develop visually engaging data visualizations in narrative patterns that tell interesting and persuasive stories. And, they use a variety of software tools to construct data visuals and how to make choices in visualization style.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
TWC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		

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TWC	301	Fundamentals Writing Dig Media	Foundational concepts and technologies of writing for a variety of digital media.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TWC	347	Written Comm for Managers	Strategies, techniques and genres for developing and presenting information intended for business and other workplace audiences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TWC	361	Writing for Health Care Mgmt	Strategies, formats, and techniques for effective writing and presentation of information for nursing professionals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): RN-BSN student; ENG 102, 105, or 108 with C or better; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	362	Writing in Health Professions	Focuses on effective communication practices in health-related fields, emphasizing communicating professionally with both scholarly and workplace audiences. In addition to providing a foundation in workplace communication, emphasizes information and technology literacy to help students become proficient in collecting, analyzing, interpreting and synthesizing information using appropriate tools, sources and styles.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Medical Studies major or Edson Nursing and Health Innovation student; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	371	The Science of Science Comm	Aims to teach science students how to effectively communicate across a range of audiences about why science matters, how it works and its relevance to the way we live our lives. Students learn to communicate effectively in a digital age where content is easily accessed, but understanding that content is harder to achieve. They also learn how to measure the effectiveness of their communication of science.	N	LEC	Y	NSW	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TWC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	401	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 401 or TWC 501 OR Visiting University Student
TWC	403	Writing for Prof Publication	Analyzes the market and examines the publication process, including the roles of the author, editor, and reviewer.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours
TWC	411	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 411 or TWC 511 OR Visiting University Student
TWC	414	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 414 or TWC 494 (Visualizing Information or Information Visualization) or TWC 514 or TWC 598 (Visualizing Information or Information Visualization) OR Visiting University Student
TWC	421	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 421 or TWC 521 OR Visiting University Student
TWC	422	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 422 or TWC 494 (Social Media in the Workplace) or TWC 522 OR Visiting University Student
TWC	431	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 431 or TWC 531 OR Visiting University Student

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TWC	435	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents, and websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 435 or TWC 494 (Global Issues in Technical Communication) or TWC 535 OR Visiting University Student
TWC	436	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication) OR Visiting University Student
TWC	443	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 443 or TWC 543 OR Visiting University Student
TWC	444	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 444 or TWC 544 OR Visiting University Student
TWC	445	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing, and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 445 or TWC 545 OR Visiting University Student
TWC	446	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 446 or TWC 546 OR Visiting University Student
TWC	451	Copyright/Intellect Prop/Elect	Explores issues related to copyright and intellectual property laws, with emphasis on electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 451 or TWC 551 OR Visiting University Student
TWC	452	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 452 or TWC 552 OR Visiting University Student
TWC	453	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 earned hours; Credit is allowed for only TWC 453 or TWC 553
TWC	454	Information Tech & Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 454 or TWC 554 OR Visiting University Student
TWC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
TWC	490	Capstone	Development of a professional portfolio, creation of a culminating document, and synthesis of undergraduate experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 87 hours
TWC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student

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TWC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TWC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
TWC	501	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 401 or TWC 501
TWC	504	Applied Rhetoric and Tech Comm	Foundation in applied and technical communication. Covers the emergence and development of technical communication as a profession and field; rhetorical concepts and their application to technical and applied communication, ethical issues; and the impact of internationalization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student
TWC	505	Research in Tech and Appl Comm	Explores the research process and methods appropriate for technical and professional communication. Provides a foundation for understanding the research process; designing and planning valid research within the context of technical and professional communication; collecting and interpreting information, ethical issues related to research; and reporting results.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 504
TWC	506	Research Design & Development	Focuses on the research process, including the development of research questions, selection of appropriate methods, preparation of a literature review, and design of research projects. Prepares students to design the research for their applied project or thesis. Students apply their knowledge of research methods and the research process by preparing a fully developed proposal at the conclusion of the course.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 505; minimum 24 graduate TWC hours
TWC	511	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 411 or 511
TWC	514	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 414 or TWC 494 (Information Visualization or Visualizing Information) or TWC 514 or TWC 598 (Information Visualization or Visualizing Information)
TWC	521	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 421 or TWC 521
TWC	522	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 422 or TWC 522
TWC	531	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 431 or TWC 531
TWC	535	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents and Websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 435 or TWC 535 or TWC 598 (Global Issues in Technical Communication)

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TWC	536	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools, and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life-cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations, and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication)
TWC	543	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 443 or TWC 543
TWC	544	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 444 or TWC 544
TWC	545	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 445 or TWC 545
TWC	546	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 446 or TWC 546
TWC	551	Copyright/Intell Prop/Elec Age	Explores issues related to copyright and intellectual property laws; emphasizes electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 451 or TWC 551
TWC	552	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 452 or TWC 552
TWC	553	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 453 or TWC 553
TWC	554	Information Tech and Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 454 or TWC 554
TWC	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
TWC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TWC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	596	Capstone	Synthesizes and applies the concepts, skills, strategies and techniques learned in courses completed for the program. Also reflects upon that work, analyzing their strengths as a technical communicator and identifying areas for growth. Demonstrates ability to respond to the needs of specific audiences and communication situations by selecting from their work to craft a substantive professional dossier that presents a compelling story of their technical communication abilities, along with a reflective statement that discusses their work in relation to program outcomes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student
TWC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
UET	305	Intro to Microelectronics	Quantifies the role of microelectronics technology and its associated skills as drivers for electronics systems development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite: Academic Level greater than or equal to Junior
UET	331	Electronic Materials	Physical, chemical, electromagnetic, and mechanical properties of electronic materials. Solid-state device characteristics and their material properties.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; CHM 113; PHY 112 OR Applied Science (Electronic Energy Systems) BAS student
UNI	110	Critical Reading and Thinking	Prepares students to be successful in college-level academics and helps them improve their critical reading and critical thinking skills.	N	LEC	N	OPT	University College	Dean, University College	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
UNI	120	Academic Success	Assists students in creating strategies for success in their academic lives. Students explore personal and academic strengths and barriers that impact success, identify and utilize university resources available to support success at ASU, acquire and enhance academic skills necessary for success in the university, and discover ways to stay on course to meet academic goals.	N	SEM	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 120 (or ASU 150) or UNI 120 OR Visiting University Student
UNI	150	Major and Career Exploration	Concepts and skills in the process of selecting a major: self-assessment, research, interviewing, and decision making. Exploration of ASU opportunities and investigation of career options.	N	SEM	N	OPT	University College	Dean, University College	1		
UNI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	University College	Dean, University College	1-4		
UNI	220	Mindset Connections	Explores how students' strengths and barriers influence success (i.e., how mindset, perception and beliefs influence behavior) and discovers methods for staying focused and meeting academic, personal and professional goals. Students acquire and enhance emotional intelligence skills for success in and out of the classroom.	N	SEM	N	GNA	University College	Dean, University College	1		
UNI	240	Researching Mindfulness	Explores mindfulness and the impact it has on success as a student, an individual and in the future. Therefore, students research instructor-approved topics within the subjects of psychology, emotional regulation and mindfulness in order to deepen their understanding of how the brain and the mind influence beliefs, choices, behaviors and learning. Students develop skills that support their academic, personal and professional goals, using tools such as Dweck's Mindset Theory and Rock's SCARF Model. Develops critical thinking skills, and how to apply research to their daily lives.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only UNI 240 or UNI 294 (Mastering Mindsets)
UNI	250	Choosing a Major	Advanced, one-hour career development course helps students make a thoughtful selection of major and consider the career direction that fits best for them. Students complete advanced assessments of interests, personality, and values; investigate relevant majors and careers, including connecting with working professionals; learn effective decision-making strategies; identify barriers and resources; and make connections to new major department.	N	SEM	Y	OPT	University College	Dean, University College	1		Prerequisite(s): UNI 150 with a C or better OR Visiting University Student

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UNI	270	Career Direction for Success	Actively engages students in their educational and career-planning process by exploring factors that influence personal decision making and planning for the future. Students examine their strengths and personal narrative, identify decision making factors, research career development and a particular career, and develop teamwork skills for the workplace.	N		SEM	N	GNA	University College	Dean, University College	1		Prerequisite(s): UNI 250 with C or better; Credit is allowed for only UNI 270 or UNI 294 (Next Steps in Career & Major Exploration) OR Visiting University Student
UNI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	University College	Dean, University College	1-4		
UNI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	University College	Dean, University College	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
UNI	400	Society and the Individual	Various social institutions, how they shape the socialization process of a group and individual and give a community meaning, values and a set of norms. Focuses on Arizona as a case study for student research inquiries.	N		LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Bachelor of General Studies major; ENG 101, 105 or 107 with C or better; minimum 2.00 GPA; minimum 90 hours; Credit is allowed for only UNI 400 or COM 494 (Society and the Individual) OR Visiting University Student
URB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
URB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y		LEC	Y	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-12		
URB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N		LEC	N	Z1	Watts College of Public Service & Community Solutions	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
URB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	Watts College of Public Service & Community Solutions	School of Public Affairs	1-4		
USL	210	Srvclmng:Intro Commtty Issues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions, and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship, and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N		PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
USL	216	Service Learning:For Educators	Examines the effects of social justice issues on student achievement. Correlates academic coursework with required community service to analyze community needs, the importance of civic engagement and community issues affecting ethnic minorities and marginalized populations in contemporary American society, particularly how it applies to our education system. Students dedicate a minimum of 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services) directly serving high-needs youth or adults. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and social injustices, and how to utilize this knowledge in the teaching profession to better serve all students. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N		PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): Mary Lou Fulton Teachers College major; ENG 101, 105 or 107 with C or better OR Visiting University Student

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USL	402	Service Learning: Educ & Youth	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement, and an in-depth study of the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society as they apply to education in Arizona and the United States (policy, student achievement, teacher and administration effectiveness and parental involvement). Students dedicate 100 service hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies), directly serving high-needs youth. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and the importance of civic engagement particularly how it applies to the education system. Provides real-world experiences that exercise advanced academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
USL	410	SrvLrng:DiverseCommtlyssues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 100 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
USL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
USL	496	Service-Learning Capstone	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Applies theory from service-learning pedagogy and educational studies to real-world application and academic success. Provides field experience for students to exercise academic knowledge and skills applicable to career experience and program studies. Students must (a) successfully assess a community need in education that correlates to current research and (b) collectively plan a sustainable service project that benefits high-needs children. The student-directed service project addresses social justice issues in education related to corresponding research.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 402 or 410
USL	497	Service-Learning Capstone Proj	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Implements a sustainable service project addressing social justice issues in education. Student-directed project corresponds to research and planning completed during the previous semester. Provides field experiences for students to implement academic knowledge and skills acquired through the Educational Studies program and to create realistic solutions to national and local community issues that impact student achievement.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 496
VIP	194-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	194-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	194-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	194-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		

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VIP	194-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	294-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	294-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	294-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	294-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	294-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	394-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	394-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	394-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	394-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	394-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	394-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	394-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	494-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	494-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	494-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	494-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	494-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VTN	101	Elementary Vietnamese I	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	
VTN	102	Elementary Vietnamese II	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 101 with C or better
VTN	201	Intermediate Vietnamese I	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 102 with C or better OR Visiting University Student
VTN	202	Intermediate Vietnamese II	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 201 with C or better
VTN	321	Adv Vietnamese & Literature I	Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): VTN 202 OR Visiting University Student
VTN	322	Adv Vietnamese & Literature II	Continuation of VTN 321. Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Pre-requisite: VTN 321
VTN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
VTS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		

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VTS	301	Veterans, Society and Service	Be part of this new field in veteran studies to create bridges among military, veteran and civilian cultures. Who are veterans? How and why do citizens become military service members and what is the experience of recruitment, training, service and transition to civilian life? How do we "read" a military uniform and differentiate the language and cultures of the five branches? How does military service lead or follow the nation in issues of class, gender, civil rights and LGBTQ? What are society's obligations to veterans and families as they transition through health care, higher education, employment and continued service?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student
VTS	302	Representations of Veterans	What is a hero? At what cost do we create them and how do they make a total homecoming after trauma? What do we mean when we use words like sacrifice, warrior queens, war crimes, and just war? Using sources from the Bhagavad Gita through Homer and Shakespeare, course surveys the foundations of history, war, politics and economics as well as the mythology of religious practices of Greeks and Romans to see the change and consistency with contemporary visual arts, theater, fiction, social media, poetry and film.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
VTS	376	Writing a Personal History	Interdisciplinary writing course emphasizing theories, methodologies, and issues of composing personal histories.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 376 or VTS 376 OR Visiting University Student
VTS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
VTS	402	Undergraduate Research	Students learn about various research tools and methodologies of use in developing individual or group research projects in the veteran studies field. Completed projects may include bibliographies, literature reviews or articles for publication.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): VTS 301; VTS 302
VTS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
VTS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
WAC	101	Intro to Academic Writing	Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		
WAC	107	Intro to Academic Writing	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): TOEFL score below 560PBT/220CBT/83iBT, or IELTS score 0-6.5, or ACT English score 0-18, or SAT Verbal score 0-510 (or SAT Verbal score 0-460 if taken before 2016), or Accuplacer score 0-4 OR Visiting University Student
WAC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
WPC	101	Student Success in Business	Introduces students to resources that help them to succeed in the W. P. Carey School of Business.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Credit is allowed for only ASU 101 (or equivalent) or WPC 101 or WPC 201 or WPC 194 (Business Student Development) OR Visiting University Student
WPC	148	Intro to Career Development	Building career skills, interests and strengths as a college student.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; minimum 12 hours; Pre- or corequisite(s): ACC 101 or WPC 101; Credit is allowed for only WPC 148 or WPC 301 or WPC 347 OR Visiting University Student
WPC	150	Business and Society	Introduces the role and purpose of business in society, specifically how we can be a force of good in people's lives, in our environment, in our community and in the world. Students learn about the different core functions in business such as accounting, economics, finance, information systems, marketing, management and supply chain management as well as how each makes decisions that impact our society.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		
WPC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	248	Soph Career Narrative Design	Research methods and strategic thinking for finding internships.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 148 with C or better; minimum 30 hours; Credit is allowed for only WPC 248 or WPC 301 or WPC 347 OR Visiting University Student

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WPC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	300	Prob Solving & Act Analytics	Provides foundational skills for exploring unstructured business problems. Covers techniques to approach decision making in a systematic manner, enabling students to become more comfortable in handling tasks or projects that are not initially well defined. Methods include exercises in brainstorming and iterating as well as use of more traditional analytical tools (such as spreadsheets and visualization software).	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prq(s): BUS mj w/minC: ACC231,232,261; ECN212,214; ECN221,231,IEE380,STP280; MAT210,251,265,270 OR TchLdrspBS: 30 hrs; AME230,CSE110,SES230(130); STP226 OR DataSciBS: CIS235 w/minC; Pre/co(s): BUS mj: ACC 241,242,271 w/minC OR Visiting University Student
WPC	301	Business Forum	Provides professional program business students with information on careers, interviewing, job hunting, and résumé skills. Must be taken in the first semester of the professional program for business students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Prerequisite(s): Business BA or BS major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 or WPC 348 or WPC 448 or WPC 449 OR Visiting University Student
WPC	347	Intermediate Career Management	Skills for transfer students for balancing career preparation with academic success as they transition to the W.P. Carey School of Business.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.5		Prerequisite(s): Business major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 OR Visiting University Student
WPC	348	Junior Networking Foundations	Career relationship-building techniques and full-time, job-readiness skills.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 248 or 347 with C or better; minimum 60 hours; Credit is allowed for only WPC 301 or WPC 348 OR Visiting University Student
WPC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR Visiting University Student
WPC	448	Sr Career Transition Mgmt	Intensive application of the job search cycle and processes for students still seeking post-graduation employment.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major, WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449 OR Visiting University Student
WPC	449	Campus to Career	Transitional skills for workplace success for students who have obtained post-graduation, full-time, college-level positions or graduate school acceptance.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449
WPC	470	Business Admin Capstone	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers buy at prices that cover the costs of producing them is the key to success for business organizations. The starting point for thinking about how an organization might create value and gain sustainable competitive advantage is analyzing current and future environments to understand threats and opportunities in various institutional settings around the world. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prereq(s) w/C or better: W.P. Carey (Bus Admin or Health Care) BA major; FIN 300, 302 or 303; LES 305; MGT 300 or 303 or HCD 302; MKT 300, 302 or 303; SCM 300 or 303; WPC 300; Int'l Bus course; senior standing; Credit is allowed for only WPC 470 or 480
WPC	480	Capstone Course	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers will buy at prices that cover the costs of producing them is the key to success for business organizations. Analyzing current and future environments to understand threats and opportunities in various institutional settings around the world is the starting point for thinking about how an organization might create value and gain sustainable competitive advantage. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3	L	Prereq(s) w/ C or btr: WPC BS mj; ENG 101, 105 or 107; FIN 300, 302, or 303 or IEE 300 if Engr Mgmt mj; LES 305; MGT 300 or 303; MKT 300, 302, or 303; SCM 300 or 303; WPC 300; Int'l Bus course; senior stndg; Credit is allwd for only WPC 470 or WPC 480
WPC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		

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WPC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-6		Prerequisite(s): Barrett Honors student
WPC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Prebusiness Office	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
WPC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): W. P. Carey BS or BA major; minimum junior standing OR Visiting University Student
WPC	501	Statistics for Business	Fundamentals of statistical analysis to aid management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	2-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	502	Career Coaching	Prepares students to navigate the challenging MBA world of work. Applies theories and best practices of career management and job search to help students make informed career choices, to obtain an internship between year one and year two of the program, and to obtain a full-time position upon graduation.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): W.P. Carey MBA degree major; Credit is allowed for only WPC 502 or MGT 594 (Career Leadership)
WPC	503	Managerial Communications	Provides opportunity to develop and enhance all aspects of business communications including presentation skills, business writing, informal business communication and giving feedback. Students (1) use PowerPoint or other presentation tools to deliver an effective team presentation; (2) write an effective memo proposing a course of action to solve a business problem; (3) deliver effective feedback to peers to enable them to improve their communications skills; and (4) communicate effectively in a team problem solving setting.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WPC 503 or MGT 594 (Leadership Communication)
WPC	504	Fundamentals Stats for Managers	Provides conceptual introduction to the field of statistics and its many applications. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): degree-seeking graduate student
WPC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-12		
WPC	585	Future Forward Leadership	Today organizations operate in a world that is globally and economically connected, complex and rapidly changing. Rapid technological change and start-up disrupting companies are changing the speed and nature of work. The evolving nature of work requires leaders who know how to contextualize and understand ambiguous, uncertain problems, to discover innovative and creative solutions. Future Forward Leadership develops the cognitive and leadership capabilities for this changing arena. The course builds on the knowledge gained in all of the prior courses in the MBA curriculum and applies it to ambiguous and volatile problems and issues. Team taught by faculty from across ASU and WP Carey using simulations and scenarios and hot evolving cases covering the following topics: design thinking, improvisation, super-flexibility, uncertainty, sense-making, execution through experimentation and recalibration.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	2.5		Prerequisite(s): W.P. Carey MBA major
WPC	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	100	Women, Gender, and Society	Interdisciplinary introduction examining critical issues in women's studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only WST 100 or WST 300 OR Visiting University Student
WST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisites: Must be a freshman with 25 or less total earned hours
WST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	220	Gender, Media and Culture	Introduction to gender and the media including magazines, films, advertising, new media, and other popular culture forms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Credit is allowed for only ENG 220 or WST 220

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WST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
WST	270	Global Perspectives on Women	Through lectures, creative class activities and discussions, presents a comprehensive overview of gender and globalization with special emphasis on lived realities of women worldwide. Understands women's lives and gendered experiences through the issues of work, identities (nationality, race, class, age, ability), bodies and embodiment, belief systems, political economy and difference.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only WST 270 or WST 294 (Global Perspective on Women)
WST	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
WST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	300	Women & Gender Contempory Soc	Advanced interdisciplinary examination of such topics as gender, intersectionality, media and representations, sexuality, politics, health, violence and feminism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 30 hours; Credit is allowed for only WST 100 or WST 300 OR Visiting University Student
WST	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
WST	313	Women and Sexuality	Explores U.S. women's sexuality in social context, including how women's sexuality is portrayed in popular media, medicine and education; how girls learn to think about sexuality; and how public policies address women's sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	320	Gender, Drugs and Alcohol	Drug and alcohol use have multiple and diverse meanings shaped by their historical, social and cultural context. Examines how and why alcohol and drug use have been identified as social problems and the role of gender in shaping this process. Reviews multiple social and cultural aspects of gender, drug and alcohol use, as well as the emergence of gender-based health disparities within this context. Fulfills a science and society requirement. Basic scientific principles such as the formulation of research questions, data collection and analysis, have been used to develop our understanding of gender, drugs and alcohol. How society influences the nature of those questions, the perceived value attached to particular scientific studies over others, and how to critically evaluate law and policy around drugs and alcohol in light of those studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only WST 320 or WST 394 (Gender, Drugs and Alcohol) OR Visiting University Student
WST	330	Women, Film and Culture	Critical examination of the way films can reflect, reinforce or challenge mainstream cultural ideas about women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 336 or WST 330 OR Visiting University Student
WST	331	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
WST	333	Crit Perspectives on Sexuality	Examines critical theories of sexuality, including history, commerce, pleasure, LGBT issues, identity, medicalization of sexuality, disorders, sex crime, and pornography.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 45 hours OR Visiting University Student
WST	335	Gender, Race, & Sex in Sci Fi	Surveys the complex interrelationships of biomedical research and discourses of biological difference as reflected in science fiction. Explores such questions as: How have biological scientists explained human differences along axes of gender, race, class, sexuality? In what ways have these scientific discussions manifested themselves in science fiction?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only APA 394 (Science Fiction Adventures Race/Gender) or WST 335 or WST 394 (Lost in Space: Gender, Race, & Sexuality in Sci Fi) OR Visiting University Student

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WST	340	Gender, Science & Technology	In-depth examination of the complex interrelationships of gender, science, technology, and society in a number of different contexts. Looks at the participation of women in scientific and technical fields both historically and cross-culturally, and addresses such topics as: gender segregation by status and discipline, feminist theories of gender and science, the conditions under which women have succeeded in the sciences, gender and biological determinism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	341	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341
WST	345	Gender, Religion & Violence	In-depth study of forms of gendered violence in which religion plays a key role in either the practice or perpetuation of that form of violence in a myriad of cultures and contexts. Analyzes current responses and proposes new approaches to combating or redefining these forms of violence, emphasizing the need to understand and respect the religious and cultural contexts in which these actions occur.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Pre-requisites: WST 100, 300 or minimum 30 hours
WST	360	Women as Healers	Advanced examination of the role of women as caregivers, healers, physicians, midwives, and nurses in different cultures and historical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	364	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 earned hours; Credit is allowed for only AFR 365 (or AFH364) or WST 364
WST	365	Women Int'l Health	Advanced study of gender-based disparities and global health, including impact of poverty, gender discrimination, political economy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	370	Chronicling Women's Lives	Explores the lives of a selected group of American women as a point of departure for the chronicling of contemporary women's lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	371	Sex and the City	An in-depth study of the changing media representations of young, sexually autonomous women in the city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours. Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student
WST	374	Desperate Housewives	In-depth examination of the representations of women as wives and/or mothers in the popular discourse from the 20th century to current day through an analysis of various forms of popular culture such as film, magazines, popular writing and television.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Minimum 30 hours; Credit is allowed for only WST 374 or 394 (Desp Housewives: Gender, Family & Pop Culture)
WST	375	Women & Social Change	In-depth course on feminist activism and social change. Combines research and theory on a contemporary social problem with a community action experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	376	Feminist Theory	Explores feminist theories and the intersection of gender, race, ethnicity, and class through critical analyses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	377	History/Amer Feminist Thought	Critical analysis of the origins and development of American feminist thought and political movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	H & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	378	Global Feminist Theory	In-depth studies of global feminist theories and exploration of the intersections of gender, race, ethnicity, class, and nation through critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student

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WST	382	American Indian Women	Investigate the economic, political and ideological factors contributing to American Indian women's intellectual and creative activities.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 30 hours; Pre- or corequisite(s): AIS 180 or WST 100 or WST 300 with a C or better; Credit is allowed for only AIS 381 or WST 382
WST	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
WST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
WST	413	Queer Studies	In depth exploration of lesbian, gay, bisexual, transgender, and queer experiences in the U.S. and globally, from an interdisciplinary perspective.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better or minimum 45 hours
WST	415	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit for only ENG 443 or ENG 494(Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student
WST	417	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
WST	420	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
WST	421	Girlhood and Adolescence	Critical analysis of the changing construction of girlhood and female adolescence through history, memoir, fiction, myth, music, and media.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422
WST	428	Gender, Madness and Justice	Interrogates the interplay among gender, madness and justice; that is, the treatment of women and men within psychological discourses both individually and within the culture at large. Utilizes a feminist and social justice perspective to interrogate a variety of subjects related to the psychology of women and gender, including histories of madness, socialization, childhood, adolescence, intelligence, eating behavior, sexuality, queerness, violence, depression, therapy and activism.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N		LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)

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WST	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Movt)
WST	440	Politics of Women's Health	In-depth and interdisciplinary exploration of how women's social, cultural, and economic position affect their health and health care.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Pre-requisite: WST 100 or WST 300 or minimum 45 hours
WST	444	Gender, Health, and Bodies	Explores gender and health from a feminist perspective, including critical analyses of medicine, science, and popular culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better; Credit is allowed for only MAS 598 (Gender, Health, and Bodies) or WST 444
WST	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
WST	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
WST	457	Women, Cultures, and Societies	Examines issues such as poverty, dependency, interdependency, race, class, and gender in different societies of the world.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	460	Women and the Body	In-depth analysis of the cultural construction of the gendered body and societal prescriptions about beauty, body image, and size.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	467	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Latina, and Asian-American.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 (or WST 300) with C or better; Credit is allowed for only ENG 460 or WST 467
WST	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
WST	470	Gender and Popular Culture	Advanced interdisciplinary examination of how gender is constructed in various popular cultural forms such as film, television, magazines, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Pre-requisites: WST 100 or WST 300 or minimum 45 hours
WST	471	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471

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WST	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
WST	477	Gender and Violence	Critical examination of gender-based violence from societal, institutional and individual levels using intersectional and interdisciplinary perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	483	Women Writers Across Cultures	Comparative approach to contemporary writings by women from around the world.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	485	Women, Gender, and Leadership	Explores the gendered nature of leadership and studies strategies that enable women to lead successfully in areas such as business, education, and public service.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	490	Trnsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latina/o artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL 490 or WST 490
WST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
WST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
WST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Pre-requisites: WST 100 or 300 with C or better; ENG 101 or ENG 107 or ENG 105; Majors only
WST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
WST	501	Foundational Feminist Thought	Provides key concepts and theories that have shaped the field of women and gender studies. Also provides overview of resources for research in women's studies scholarship at ASU and prepares students to participate in the field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 501 or WST 691 (Foundations of Fem Thought)
WST	502	Gender Research Methodologies	Describes the ways in which feminist scholars conceptualize and design their research. Explores the decisions scholars make in their research including the choice of research topics, applications of feminist theories and methodologies, the choice of methods and how and why feminist scholars have increasingly incorporated interdisciplinary methods, and what is at stake in these decisions for the research design and research outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: degree-seeking graduate students only
WST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		

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WST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N		LEC	N	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	601	Critical Concepts of Gender	Key concepts, theoretical frameworks, disciplinary and interdisciplinary approaches, and the critical debates that have shaped the field of gender studies.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: degree-seeking graduate students only
WST	602	Mapping Intersections Gender	Theoretical concepts, metaphors, and frameworks employed by feminist scholars to understand the way gender articulates with other categories of difference.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	603	Engendering Methodology	Focuses on the methodologies, epistemologies, and ethical dilemmas of researching gender.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	615	Masculinities	Explores the theoretical concepts, frameworks and disciplinary and interdisciplinary approaches that have accompanied the emerging analysis of masculinity studies as a field. Interrogates the ways in which masculinities have been defined in relation to femininities and other institutionalized constructions of difference, and how these definitions have contributed to material conditions and specific socio-historical contexts in which gendered bodies are included or excluded, privileged or disadvantaged, taken for granted or contested. Considers the articulations and contestations of diverse masculinities as expressed through gender, race, sex, ethnicity, sexuality, kinship, politics, popular culture, economics, nationalism, science and medicine, and violence.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 615 or WST 691 (Masculinities)
WST	620	Advanced Feminist Theory	Concentrates on transnational feminist theory and its intersections with queer theory, postcolonial theory, and critical race theory. Also looks at the ways in which (or indeed, whether) academic discourses have anything useful to say about the worlds in which we live. Among the questions we'll need to have constantly in our minds are: In what ways has feminist theorizing changed over time? Does transnational feminist theory challenge or even undermine previous feminist theoretical discussions or the perspectives you might be familiar with from your undergraduate days? What kinds of engagements do our authors have with theorists in other areas (queer studies, postcolonial studies, critical race theory)? Can you discern any sort of new feminist grand narrative emerging from these works? In what ways might our authors' perspectives help you conceptualize and contextualize your own work?	N		SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 620 or WST 691 (Feminist Theory) or WST 791 (Feminist Theory)
WST	640	Visual & Narrative Culture	Feminist analysis of gender representations in visual and narrative culture, including film, dramatic literature, fiction, and autobiography.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	701	Resrch Design & Prop Dev	Prepares students for careers in gender studies by developing skills in research design, proposal writing, and identifying funding outlets.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y		IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y		LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y		RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		

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WST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y		IND	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
WST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y		RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
WWS	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student
WWS	561	Decision Points I	In-depth analysis of the origins, impact and controversies over the key decisions related to the beginning and early years of World War II, with an emphasis on the contingent nature of historical events.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	562	Decision Points II	In-depth analysis of the origin, impact and controversies over the key decisions related to the later years and the ending of World War II, with an emphasis on the contingent nature of historical events.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	563	The Lived Experience of WWII	Using the vast oral history collection of the National World War II Museum in New Orleans, Louisiana, this course examines how individuals experienced the war. A number of factors shaped how people experienced the war—whether one was a soldier, non-combatant, resistor or collaborator. Focuses on how ordinary people made sense of their experiences during the war. In addition, students explore the theory and practice of collecting and using oral histories.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	564	The Global War	Examines the global dimensions of World War II with particular focus on those regions which have been deemphasized in Western historical discourse.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	566	World War II Today	Analyzes the impact and legacy of World War II, with an emphasis on the roots of contemporary problems and issues. A global conflict that impacted millions of people, World War II fundamentally reshaped the political and cultural landscape of our planet. Explores the new global order that emerged after the end of World War II in 1945. While the war had immediate impacts in the postwar era, the legacy of the war continues to inform current conflicts across the globe and resonates in the current social and political order. This is especially apparent in how contemporary narratives situate, remember and memorialize the war. Uses themes to help us think historically and uncover the historical roots of the present order.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N		LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
WWS	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N		LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568

Fall 2021 Course Catalog

Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Crse Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WWS	569	Memory and Monuments	Focuses on the historical memory of World War II by examining the processes of commemoration, monument building, and memorialization. Through theoretical texts and case studies, students explore how societies remember and forget and how they create collective memory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	597	Capstone	Students draw on the experiences, skills and competencies they developed throughout the WWII Studies MA program to generate a digital portfolio that showcases the breadth and depth of their MA experience. Students refine and extend work they produced in previous WWS courses and also develop reflective essays that critically assess their performance in the program, as well as essays that articulate the transferable value of the degree to potential employers or admissions committee members. Through required components in the portfolio students demonstrate competency in source analysis, comparative analysis and argumentation, as well as the ability to effectively communicate to scholarly and public audiences.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): 21 hours of 500-level courses with C or better including WWS 561; WWS 562; WWS 563; WWS 566
WWS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

Spring 2022

Spring 2022 Course Catalog

Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ABS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	207	Applied Plant Taxonomy	Introduces identification of vascular plants emphasizing seed plants. Surveys seed plant families.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or BIO 282
ABS	225	Soils	Fundamental physical, chemical and biological properties of soils as related to sustainable natural resource management. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SQ	Prerequisite(s): CHM 101 or 113 OR Visiting University Student
ABS	226	Soils Laboratory	Selected exercises to broaden the background and understanding of basic soil principles. Both ABS 225 and ABS 226 must be taken to secure General Studies SQ credit.	N	LAB	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1	SQ	Pre- or corequisite(s): ABS 225 OR Visiting University Student
ABS	260	Sustainable Horticulture	Principles and practices of horticulture, emphasizing development, growth, and propagation of horticultural plants and environmental factors that affect these processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SG	
ABS	270	Sustainable Biological Systems	Ecological foundations of sustainable biological systems, anthropogenic impacts on ecosystem structure and function, and ecological risk assessment. Examines climate change, water scarcity, deforestation, soil degradation, and human displacement on global ecosystem functions and utilization of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	271	Veterinary Medicine Today	Introduces the role of the veterinarian as related to the fields of food supply and veterinary medicine.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	274	Intro to Wildlife Management	Fundamentals of wildlife conservation and management through lectures, guest speakers and lab activities. Divided into three parts: (1) introduction to conservation, management and the scientific method; (2) themes of earth, water, fire and air, and (3) wildlife techniques and field methods.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	302	Ethical & Policy Issues in Bio	Policy environment and ethics in the practice of biology. Covers ethical reasoning, policy formulation, and regulatory agencies with examples from biotechnology and the environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	311	Molecular and Cellular Biology	Overview of the biology of the cell; emphasizes structure and function of biomolecules within the cell and their applications associated with recombinant DNA technology, genetic engineering, plant and agriculture biotechnology, and human pharmaceutical development.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better OR Visiting University Student
ABS	312	Structure and Function	Surveys structural and functional attributes of plant and animals of particular importance in the applied biological sciences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better OR Visiting University Student
ABS	314	Applied Plant Physiology	Understanding control of plant growth and developmental processes through innovated technologies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	318	Unseen Life on Earth	Develops an understanding of how microbes exist in the context of both their environment and the organisms they come in contact with. Focuses on how the microbial interactions with the environment play a vital role in the multitude of biological processes that support the Earth system. Studies a myriad of extreme environments that host microbial systems, such as cloud, hydrothermal vent, acid-mine drainage and gut microbiomes. Utilizes a synthesis-driven approach where students apply their knowledge on microbial systems to discern whether life is possible on other planets. Also pays attention to the tools used to evaluate microbial diversity and function, applications of microbial ecology, and how microbes can be harnessed to improve life on Earth.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 318 or ABS 394 (Unseen Life on Earth) OR Visiting University Student
ABS	350	Applied Statistics	Statistical methods with applications in the biological sciences and natural resource management. Uses computers and the Internet.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): one course meeting General Studies MA requirement with C or better OR Visiting University Student
ABS	355	Vertebrate Adaptations	Evolution, systematics, diversity, zoology, conservation and anatomical and physiological adaptations and specializations of the vertebrates.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	360	Southwest Home Gardening	Multimedia course for nonmajors surveying contemporary topics in Southwest home horticulture, including landscaping, flower and vegetable gardening, citriculture, interiorscaping, and others.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		

Spring 2022 Course Catalog

Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	362	Landscape Plants	Identification, design, and use of plants in urban landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours
ABS	363	Sustainable Landscape Practice	Landscape technologies and practices including landscape design theory, job costing and bidding, sprinkler and drip irrigation design, landscape installation, landscape valuation techniques, landscape ordinances, and maintenance practices of commercial and residential landscapes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): ABS 260
ABS	364	Urban Forestry	Care, maintenance, and valuation of the urban forest, including public and private landscape codes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: ABS 260
ABS	368	Plant Propagation	Theory and application of sexual and asexual propagation techniques. Considers plant materials used both for urban horticulture and ecological restoration applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
ABS	370	Ecology	Interactions between organisms and their environments; structure and dynamics of populations, communities, ecosystems, and landscapes, with emphasis on vegetation.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 OR Visiting University Student
ABS	372	Captive Animal Behavior Mgmt	Natural animal behaviors during captive animal management including wild and domestic animal training and enrichment, exhibit design, husbandry, and livestock management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282 with C or better; Credit is allowed for only ABS 372 or ABS 394 (Applied Animal Behavior) OR Visiting University Student
ABS	376	Wildlife Ecology	Explores population biology, conservation genetics, habitat ecology, ecological communities, competition, invasive species, habitat fragmentation and connectivity, and other related topics. Students work in small groups to design, implement, and complete a field-based research project on the ASU Polytechnic campus.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre- or corequisite(s): ABS 274; ABS 370
ABS	377	International Wildlife Conserv	Studies wildlife around the world including biogeography, biodiversity, conservation topics and the complexity of conserving wildlife in both developed and developing nations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 182 or 282; Credit is allowed for only ABS 377 or ABS 494 (International Wildlife Conservation) OR Visiting University Student
ABS	378	Animal Nutrition	Principles of nutrient metabolism in animal species; emphasizes understanding the interaction of animals with their environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: BIO 181 or BIO 182; CHM 101 or CHM 113
ABS	380	Restoration & Wildlife Plants	Important wildland plants, including invasive and endangered species, wildlife food species, and species used for ecosystem restoration such as rangeland revegetation and seeding.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 207 OR Visiting University Student
ABS	381	Natural Resources Policy	Policies and regulations affecting management of natural resources, with emphases on wildlife, rangeland and ecological restoration.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	384	Natural Resources Meas	Inventory, sampling and monitoring techniques of natural resources. Data evaluation and interpretation as related to management, restoration and conservation needs of natural resources.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	414	Plant Pathology	Identification and control of biotic and abiotic factors that cause common disease problems to plants.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better; ENG 101, 105 or 107 with C or better OR BIO 281 with C or better; BIO 282 with C or better; ENG 101, 105 or 107 with C or better
ABS	417	Comparative Immunology	Examines unique but also shared immunological characteristics of animals with the goal of understanding how different animals respond to microorganisms such as viruses, bacteria, fungi and parasites. Presentation of material is guided by hierarchy of structural organization, using molecules, organelles, cells, tissues, organs, organ systems, whole animals and even ecosystems and the environment to convey important concepts related to our relationships with pathogens.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 417 or ABS 394 (Comparative Immunology) OR Visiting University Student
ABS	430	Watershed Management	Hydrologic, physical, biological, and ecological principles applied to watershed management. Impact of ecosystem manipulations on water yield and quality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	434	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370 or BIO 320; Credit is allowed for only ABS 434 or BIO 418
ABS	435	Applied Systems Ecology	Simulation modeling as a tool to study ecological processes and human impact on ecosystems and organisms.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: ABS 370, ABS 350 (or STP 420)
ABS	440	Ecological Restoration Techniq	Techniques for ecological restoration, riparian and wetland restoration, and monitoring restoration success.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	441	Ecological Restoration Practcm	Field experience in the evaluation and monitoring of implemented ecological restoration projects.	N	LEL	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre/Co-requisite: ABS 440
ABS	452	Comm App of Fermentation	Biochemical applications and technologies of fermentation including use of fungi and bacteria in fermentation to improve human health and immunity, and produce pharmaceutical drug supplements and medicines, foods, beverages, and alternative fuels.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIO 181 or 281 with C or better; Credit is allowed for only ABS 452 or ABS 494 (Commercial Applications of Fermentation) OR Visiting University Student
ABS	460	Organic Gardening	Applies principles and practices of organic gardening in the low desert, including environmental impacts of modern food production.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	2		
ABS	462	Greenhouse/Nursery Management	Greenhouse structures, environment, and nursery operations. Includes irrigation, nutrition, and other principles relative to production of nursery crops.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: ABS 260
ABS	464	Desert Horticulture	Students learn about and practice the principles of sustainable horticulture in an arid climate. Includes capstone projects on sustainability issues related to horticultural practice in arid environments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 260; Credit is allowed for only ABS 464 or ABS 494 (Sustainable Desert Horticulture) or ABS 498 (Desert Horticulture) OR Visiting University Student
ABS	470	Life History of Mammals	Evolution, classification, environmental, anatomical and physiological adaptations, ecology, and conservation of mammals worldwide. Emphasis on the identification, habitat relationships, conservation, and management techniques of Arizona and select North American mammals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370
ABS	472	Applied Herpetology	Systematics, evolution, ecology and life history of amphibians and reptiles emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 472 or ABS 498 (Applied Herpetology) OR Visiting University Student
ABS	473	Applied Ornithology	Evolution, ecology, classification and life history of birds, emphasizing wildlife management methodologies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 355 or BIO 370; Credit is allowed for only ABS 473 or ABS 494 (Applied Ornithology)
ABS	474	Riparian Ecosystem Mgt	Management principles of riparian ecosystems based on fluvial geomorphological and ecological concepts. Discusses human impacts to riparian ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ABS	475	Habitat Mgmt Small Wildlife	Habitat management considerations and practices for small game and nongame wildlife species in North America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320
ABS	476	Big Game Habitat Management	Conservation and management issues focused on large mammals in North America. Topics include habitat ecology, nutrition, migration, predator-prey dynamics, trophic cascades, habitat management and restoration of populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370 or BIO 320 OR Visiting University Student
ABS	479	Ecosystem Mgmt and Planning	Principles of ecosystem management, with emphasis on economic and policy constraints on the planning process. Risk assessment and management. Includes the process of complying with NEPA while developing rangeland management plans.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum senior standing OR Visiting University Student
ABS	481	Riparian & Wetland Restoration	Principles and problems in the restoration of degraded riparian and wetland ecosystems. Construction of wetlands.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ABS 370
ABS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	485	GIS in Natural Resources	Principles of Geographic Information Systems (GIS) utilized in natural resource management. Use of computers for spatial inventory and analysis of natural resources.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ABS	486	Introduction to Remote Sensing	Remote sensing is an important source of environmental information that can support a deeper understanding of trends and clarify management strategies in a wide range of ecological application. Focuses on the application of satellite and aerial/drone remote sensing in environmental science and management. With this basic background, course participants use remote sensing data to make spatial decision. Presents the concepts of biodiversity and wildlife management parallel to the remote sensing information. Image processing instruction and exercises begin with an analysis of digital imagery and proceed through the three broad classes of processing techniques: preprocessing, enhancement and information extraction.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 486 or ABS 598 (Integration of Remote Sensing) or ABS 598 (Introduction to Remote Sensing)
ABS	489	Undergraduate Research	Undergraduate research under the supervision of an applied biological sciences faculty member.	N	RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): Junior or senior standing OR Visiting University Student
ABS	490	Applied Biol Sciences Seminar	Current literature and significant developments related to applications of the biological sciences. May be repeated for credit.	N	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Senior standing OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ABS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ABS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ABS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ABS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
ABS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
ABS	541	Adv Rangeland Mgt	Combines the principles of ecology, planning and restoration in the application of rangeland ecosystem management. Studies fundamental topics such as range plant physiology, range plant ecology, rangeland stocking-rates and grazing systems in considering management practices for rangeland ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Pre-requisite: Degree-or non-degree seeking graduate; Credit is allowed for only ERM 541 or ABS 598 (Adv Rangeland Ecosystem Management)
ABS	542	Mgt Fire Adapted Ecosys	Fire adapted ecosystems which evolved with high-frequency and low-intensity fires now support a range of regimes from no fire to uncharacteristically large and intense fires, causing a concern about the current and future role of wildland fire as well as forest and rangeland health. Explores management considerations and techniques for reintroducing fire to these ecosystems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ABS 598 (Fire Ecology), or ERM 542
ABS	550	Vegetation Dynamics	Dynamics of vegetation linking physiological, population, and community ecology. Collection and analysis of vegetation data.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	555	Wildlife Dynamics	Explores major concepts in population and community ecology with an emphasis on their application to the study and management of wildlife species. Explores the theory and sometimes controversial nature of these concepts in the form of lectures and discussions. Instructor and student workshops and oral presentations of student research.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ABS 555 (or ERM 550) or ABS 598 (Wildlife Dynamics) or ETM 598 (Wildlife Population Ecology)
ABS	560	Ecological Modeling	Mathematical modeling of animal populations, food-web structural and ecological processes in space and time. May use modeling tools on computer clusters.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	570	Advanced Animal Nutrition	Metabolic and physiological interactions of nutrients in wild and domesticated animals consuming natural feeds.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	586	Remote Sensing/Envir Resources	Principles and application of remote sensing technologies in natural resource management using computerized data from aerial photography and satellite imagery.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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ABS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ABS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	101	Accountancy LEAP Program	The Leadership, Ethics, Accountability & Professionalism (LEAP) program aims to ensure a successful transition from high school to college and, ultimately, one's career. Based on the hallmarks of the accounting profession, provides the tools, resources, and expectations to succeed at ASU, W.P. Carey School of Business and the School of Accountancy.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1		
ACC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	231	Uses of Accounting Info I	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): CIS 105 or 236 with C or better; min 25 hours OR Technological Entrepreneurship Management major: EDT 180; min 25 hours OR Pre- or corequisite(s): Engineering Management major: CSE 205; min 25 hours OR Visiting University Student
ACC	232	Financial Accounting I	Develops an understanding of the theory, concepts, principles and practices underlying preparation, interpretation, and use of external financial reports. Emphasizes interpreting the economic substance of events and transactions and their association with contemporaneous and prospective events, relationships, and outcomes. Gains understanding of the accounting information model and develops an ability to analyze and record business transactions and analyze basic financial statements. Meant for prospective accounting and finance majors (and students who plan current majors in these areas) and develops skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy or Finance majors; CIS 105, 220 or 236 with C or better OR Visiting University Student
ACC	241	Uses of Accounting Info II	Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): ACC 231, 261, or 303 with C or better OR Visiting University Student
ACC	242	Mgr Acct I	Develops an understanding of the theory, concepts, principles, and practices underlying managerial accounting. Emphasizes three functions managers must perform within their organizations: plan operations, control activities, and make decisions. Explains what accounting information is necessary, how to collect it, and how to interpret it. Meant for prospective accounting and finance majors and students who plan current majors in these areas and develop skills and abilities facilitating success in higher-level accounting courses.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy and Finance majors, and others with School of Accountancy approval; ACC 231, 232, 261, or 303 with C or better OR Visiting University Student
ACC	261	Honors Fund of Fin Accounting	Covers basic financial accounting concepts and applications. Develops an understanding of the environment in which financial reporting choices are made.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey School of Business Honors student; CIS 105 or CIS 220 or CIS 236 with C or better
ACC	271	Honors Fund of Mgr Accounting	Covers basic managerial accounting concepts and applications.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business major; Barrett Honors student; ACC 231, 232, or 261 with C or better
ACC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-4		
ACC	310	Intermed Acctg for Corp Accts	Intermediate-level financial accounting course with in-depth focus on asset, liability and owner's equity measurement, revenue determination, investments accounting, lease accounting, financial statement preparation, presentation and analysis. Emphasizes the statement of cash flows and interpreting footnote disclosures. Where appropriate, compares International Financial Reporting Standards and U.S. GAAP (Generally Accepted Accounting Principles).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student

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ACC	320	Mgmt Acc for Corp Accts I	Covers internal reporting systems for planning, control, and decision making. Deals with conceptually and computationally understanding the various accounting, economic and/or business models, frameworks and methods in order to be more knowledgeable and literate in these areas while building overall stronger decision-making skills.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
ACC	330	Data Analytics in Acctng	Explores accounting concepts through the application of data analytics. Focuses on developing an analytics mindset and learning how to use big data analytical tools to examine and analyze data, and then effectively interpreting results to make business decisions.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prereqs: WPC ACC or FIN BS mj; ACC 241, 242, 271 w/ C or btr; ECN 221 or 231 w/ C or btr; MAT 211, 266, 271 w/ C or btr; Pre- or coreq(s): FIN 300, 302, or 303; Crdt for only ACC 330 or ACC 494(Acc Only or Data Only in Acc) OR Visiting University Student
ACC	340	External Reporting I	Financial accounting theory and practice related to external reporting.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prereq(s): W.P. Carey Accountancy or Finance BS major; ACC 241, 242 or 271 w/ C or better; ECN 221 or 231 w/ C or better; MAT 211, 266 or 271 w/ C or better; Pre- or coreq(s): FIN 300, 302 or 303 w/ C or better if completed OR Visiting University Student
ACC	350	Internal Reporting	Internal reporting systems for planning, control, and decision making.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS major; ACC 241, 242, or 271 with C or better; ECN 221 or 231 with C or better OR Visiting University Student
ACC	354	Gov. Risk, Comp Int Con Ethics	Equips students to understand, evaluate and participate in corporate governance. Surveys best practices in corporate governance including internal controls, enterprise risk management (ERM), fraud deterrence, and ethical organizational culture. Emphasizes the Committee of Sponsoring Organizations (COSO) framework. Provides the necessary background and understanding of key internal control and ERM concepts and tools for corporate accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	360	Ethics for Prof Accountants	Addresses ethical obligations and responsibilities of professional accountants.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS major; ACC 241, 242 or 271 with C or better; ECN 221 or 231 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
ACC	382	Acctng & Financial Analysis	Introduces nonbusiness majors to financial accounting concepts related to operating, financing, investing, and ethical decisions.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prereq(s): Non-Business student; must not have previously earned credit in ACC 230, 231, 232, 240, 241, 242, 261, 271 or BUA 381; min 2.0 GPA; min 56 hours, OR non-degree student with min GPA of 2.00, OR graduate student OR Visiting University Student
ACC	410	Fin Statement Analysis	Focuses on core knowledge and skills essential to financial statement analysis. Topics covered include strategic ratio analysis, cash flow analysis, forecasting, pro-forma financial statements and firm valuation.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better OR Visiting University Student
ACC	420	Mgmt Acc for Corp Accts II	Covers the higher-level managerial accounting topics and uses of accounting data to assist corporate accountants in their plans and decisions regarding complex resource allocation, organizational control, and performance evaluation issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 320 with C or better OR Visiting University Student
ACC	430	Taxes and Business Decisions	Federal income taxation of sole proprietors, partnerships, corporations, fiduciaries, and individuals with an emphasis on tax consequences of business and investment decisions.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 340 with C or better; LES 305 with C or better OR Visiting University Student
ACC	435	Personal Tax Mgmt & Planning	Strategies used by financial planners to help clients achieve greater tax efficiency.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Business (Financial Planning) BA or Finance BS major; FIN 302, 303, or 380 with C or better OR Visiting University Student
ACC	440	External Reporting II	Continuation of ACC 340 with emphasis on the recognition, research, and resolution of financial reporting issues.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS or Finance BS student; ACC 340 with C or better OR Visiting University Student

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ACC	444	Enterprise Proc Analys & Desgn	Focuses on the flow of data through ERP systems and discusses the difference between several types of data and the flow of data from various transactions through the database.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s) with C or better: Accountancy BS major; ACC 241, 242, or 271; CIS 360; ECN 221 or 231 OR Computer Information Systems major; ACC 241, 242, or 271; CIS 235 or 236; ECN 221 or 231 OR Visiting University Student
ACC	450	Principles of Auditing	Standards and procedures in auditing. Planning, evidence gathering and accumulation, and reporting. Ethical and legal considerations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Accountancy BS student; ACC 440 with C or better OR Visiting University Student
ACC	454	Tax for Corp Accountants	Integrates tax compliance, tax planning, accounting, economics and finance. Examines current tax rules while developing the ability to think about taxes in a way that is not specific to the current federal system.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Business (Corporate Accounting) BA major; ACC 310 with C or better; ACC 320 with C or better OR Visiting University Student
ACC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): W. P. Carey BS Accountancy major; ACC 340 with C or better; ACC 350 with C or better; ACC 430 with C or better; ACC 440 with C or better; ACC 450 with C or better; minimum 3.50 GPA; minimum 72 hours
ACC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-6		Prerequisite(s): Barrett Honors student
ACC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	School of Accountancy	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ACC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Accountancy BS major OR Visiting University Student
ACC	501	Fundmntls Financial Accounting	Covers contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): degree-seeking graduate student
ACC	502	Financial Accounting	Contemporary financial accounting and reporting systems; emphasizes the interpretation and evaluation of a company's external financial reports.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey Finance MS or MBA student
ACC	503	Managerial Accounting	Managerial accounting concepts and procedures for internal reporting applied to the decision making activities of the professional managers.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey MBA student; ACC 502 with C or better
ACC	504	Fundmntl Managerial Accounting	Covers managerial accounting concepts and procedures for internal reporting applied to the decision-making activities of the professional managers. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	1.5		Prerequisite(s): ASU degree-seeking graduate student; Pre- or corequisite(s): ACC 501 with C or better if completed
ACC	509	Stats for Acctg Analytics	Addresses theories of probability and uncertainty through the use of statistics including descriptive, predictive and prescriptive analyses as well as regression and other models to support audit decisions and conclusions. This heavily quantitative course starts with a realization that probability and uncertainty can be alleviated (or compounded) with different statistical decision making and so starts with theories of probability and uncertainty to properly understand these concepts. Once these concepts are grounded, this class focuses on data, techniques and technologies that can aid in appropriate decision making with accounting. Emphasizes formulating real-world models--driven by descriptive, predictive and prescriptive statistics--to represent complex real-world accounting decision problems and on using a variety of tools to gain better insight into properly addressing these problems.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	510	Internal Control Audit & Fraud	Addresses internal control frameworks and U.S. Generally Accepted Auditing Standards (GAAS) related to an auditor's consideration of internal controls for purposes of financial statement audits and audits of internal control over financial reporting. Covers various schemes pertaining to misappropriation of assets, corruption and fraudulent financial reporting.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy MACC student; Credit is allowed only for ACC 510 and ACC 591 (Int Contrls Audit, & Fraud Prevention & Detection)

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ACC	511	Accounting for Income Taxes	Primarily the comprehensive study of financial accounting for income taxes. The core content focuses on ASC740, including preparation, review and audit of a corporate tax provision. Course is particularly valuable for students interested in a career in either audit or tax.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Business graduate student
ACC	512	Advanced Auditing	Builds on the skills obtained in the beginning auditing (assurance) course and focuses on audit planning, risk assessment, evidence, and reporting procedures and fraud.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: Master of Accounting student
ACC	513	Advanced Financial Accounting	Focuses on advanced financial accounting topics along with their application in the financial reporting process. Topical coverage includes consolidations, mergers and acquisitions, derivatives, foreign currency translation, fair value accounting, and equity-based compensation. Addresses the implications of these topics for earnings management and earnings quality.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Business graduate student
ACC	520	Accounting Analytics I	Addresses analytics in accounting, auditing and tax contexts. Focuses on the introduction of methods and techniques to analyze data sets while also making it easier to interpret, present and utilize the results for financial decision making. Presents frameworks and approaches to equip students to recognize and interpret patterns in data and models and recommend actions. Teaches multiple concepts to improve decision making related to accounting data. Also serves as a practical introduction to the extraction, cleaning and transformation of data for accounting applications.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Accountancy MACC student; Credit is allowed for ACC 520 or ACC 591 (Accounting Analytics)
ACC	521	Accounting Analytics II	Addresses analytics in accounting, auditing and tax contexts. Focuses on the methods and techniques to analyze data sets while also making it easier to interpret, present and utilize the results for financial decision making. Presents additional frameworks and approaches to equip students to recognize and interpret patterns in data and models and recommend actions. Students learn multiple concepts to improve decision making related to accounting data. Also serves as a continuation of the extraction, cleaning and transformation of data for accounting applications.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	522	Innovations with Audit Tech	Focuses on understanding the role of technology-related innovations on audits and auditing performance. Looks at both capturing data from recent innovations in technologies for audit applications (e.g., IoT) as well as examining the roles of these recent technology innovations for audit performance (e.g., cognitive computing).	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy student
ACC	560	Ethics for Prof Accts	Reviews ethics in business, fiduciary responsibility, ethical issues, codes of conduct in the field of accounting. Individualized instruction.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Accountancy or Master of Taxation student; Credit is allowed for only ACC 560 or ACC 591 (Ethics for Professional Accountants II)
ACC	571	Taxation/Corps/Shareholders	Tax aspects of the formation, operation, reorganization, and liquidation of corporations and the impact on shareholders.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): W. P. Carey Taxation student
ACC	573	Taxation/Pass-Through Entities	Tax aspects of the definition, formation, operation, liquidation, and termination of a partnership. Emphasizes tax planning.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Taxation MTax student
ACC	575	Family Financial Tax & Wealth	Provides an understanding of family financial planning, individual income tax, taxation of wealth transfers during life (gifts) and at death (estate) with emphasis on identifying planning techniques to maximize family wealth and financial security for individuals and their families.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Prerequisite(s): Business graduate student
ACC	577	Tax Rsrch Prof Resp Prop Trans	Federal tax issues and consequences, tax authority, property transactions and tax consequences of acquiring, holding and disposing of property.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Master of Taxation major. Credit is allowed for only ACC 577 or ACC 591 (Tax Research, Professional Responsibilities & Property Transactions)

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ACC	581	Corp Gov, Ethics, Sustain	Prepares accounting and finance-oriented students to lead organizations. Explores corporate governance topics including sustainability reporting and related ethical issues from the perspectives of accounting and finance professionals. Corporations employ different governance structures each with its strengths, weaknesses and differing ethical norms. Corporate governance is changing quickly now with thousands of companies that are incorporating environmental, social and governance (ESG) issues and metrics into their internal finance and accounting operations and their external reporting. Utilizes cases supplemented with articles (no textbook) along with substantial discussion and writing components.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Business graduate student; Credit is allowed for only ACC 581 or ACC 591 (Corporate Gov, Ethics & Sustainability Rptg)
ACC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	585	Perf Measurement&Adv Mgrl Acctg	Covers advanced topics in strategic implementation and control, stressing their application to real-world settings. Topics include performance measurement, the design of compensation plans, and the design of information-based control systems to build winning organizations. Utilizes case studies drawn from a wide range of firms in various industries and countries, emphasizing the use of critical thinking to interpret data for solving managerial problems. Should be of interest to anyone thinking of a career in a corporate setting, consulting and private equity. Should also be useful for those interested in public accounting to develop an understanding of client organizations.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): Business graduate student
ACC	586	Shareholder Value Creation	Develops skills necessary to exploit financial reporting information in a business environment and appreciation of reporting issues faced by management.	N	LEC	N	OPT	W. P. Carey School of Business	School of Accountancy	1-4		Pre-requisite: Specific Business Graduate majors
ACC	587	State and Local Taxation	Multistate taxation and interplay between multistate tax issues and federal and state constitutional limitations.	N	LEC	N	GNA	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W.P. Carey Master of Taxation student
ACC	588	Professional Accounting Resrch	Applies the technical knowledge of accounting theory and principles developed in other academic courses through the use of "real life" case studies, where such knowledge and professional judgment is applied in resolving advanced accounting problems and issues.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Pre-requisite: W. P. Carey Master of Accountancy student
ACC	589	International Taxation	Addresses the U.S. taxation of U.S. individuals and businesses that do business outside the U.S. as well as the U.S. taxation of foreign persons and tax treaties, allocation of income, foreign tax credits, and transfer pricing. Emphasizes planning related to some of the tax issues that commonly arise in cross-border businesses.	N	RSC	N	OPT	W. P. Carey School of Business	School of Accountancy	3		Prerequisite(s): W. P. Carey Master of Taxation student
ACC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): specific Business graduate students
ACC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	School of Accountancy	1-12		Pre-requisite: Business Administration (Accountancy) PHD student
ACC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	School of Accountancy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	School of Accountancy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	School of Accountancy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	100	All About Data	Data modeling and design, spreadsheets, relational databases and querying, visualization and XML.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	
ACO	101	Intro to Computer Science	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms, computer system concepts, Social and ethical responsibilities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	
ACO	102	Object-Oriented Programming	Object-oriented programming using introductory algorithms and data structures. Overview of concepts in computer science.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 101 with C or better; Credit is allowed for only ACO 102 or CSE 205 or CST 200 OR Visiting University Student
ACO	131	Global Cybersecurity	Introduces the basic concepts and tenets of cybersecurity from a global and cultural perspective, instead of a technical perspective. Explores how various nation-states view and employ cybersecurity in order to achieve their national strategic imperatives. Students articulate and understand fundamental cybersecurity concepts and principles rooted in U.S. and other national policy, compare and contrast various nation-state approaches to national security, the monitoring of other nations and foreign citizens, and how these relate to cybersecurity policies and practices. Students identify and describe cultural and political philosophies regarding personal data and personal privacy and their influence on national security policy and objectives.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G	Credit is allowed for only ACO 131 or ACO 194 (Global Cybersecurity)
ACO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	201	Data Structures and Algorithms	Static and dynamic data structures, recursive and iterative sorting and searching, object-oriented design and programming, software design models and implementation/testing strategies, professional responsibilities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 102 with C or better; MAT 210 or higher with C or better OR Visiting University Student
ACO	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240
ACO	320	Database Systems	Entity-relationship and relational data models. Database design theory. Relational algebra, calculus and SQL query languages. Query optimization. XML fundamentals. Transactions, recovery and concurrency control.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 with C or better; MAT 243 or 300 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student
ACO	321	Database Development & Apps	Stored procedures and triggers. Security and authorization. Call-level interface. Database Web applications. Advanced topics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; Credit is allowed for only ACO 321 or CSE 414 or IFT 458 OR Visiting University Student
ACO	330	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 325 with C or better; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
ACO	331	Network Forensics Analysis	Fundamental principles of network forensics and traffic analysis, evidence acquisition, network intrusion detection and analysis, anomaly detection and analysis, malicious activity detection, network tunneling, and malware forensics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better; Credit is allowed for only ACO 331 or IFT 482
ACO	350	Systems Programming	Introduces operating systems as resource managers, processes, threads, memory allocation, file systems, protection, system calls, application program interfaces.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): ACO 201 with C or better; Credit is allowed for only ACO 350 or CSE 330
ACO	351	Security GRC	Broad requirements for effective cybersecurity governance, the elements required to develop an appropriate governance strategy, and the actions required to implement it.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201 or CIS 235 with C or better

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ACO	361	Secure Coding Concepts	Secure software development process including designing secure applications, writing secure code that can withstand attacks, and security testing and auditing. Focuses on the security issues a developer faces, common security vulnerabilities and flaws, and security threats. Explains security principles, strategies, coding techniques and tools that can help make code more resistant to attacks. Students write and analyze code that demonstrates specific security development techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 201, ACO 240, or CIS 325 with C or better
ACO	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
ACO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	N	RSC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): ACO 102 with C or better; minimum 30 hours OR Visiting University Student
ACO	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
ACO	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student
ACO	420	Big Data Systems	Modern technologies to manage, process and analyze big data. Data processing of large data sets with Map/Reduce. NoSQL data stores. NewSQL databases. Data visualization. Applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better
ACO	421	Data Mining and Warehousing	Introduces data mining from a database perspective, including classification, clustering, and association rules. Data warehousing methodologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better
ACO	422	XML and Databases	XML data model, schema specification and validation, querying, storage, indexing, and current research topics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better
ACO	423	Data Science	Computational and machine learning methods to extract insights from data: data collection, data cleaning and transformation, exploratory data analysis, data visualization, and machine learning (supervised and unsupervised) algorithms.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 320 with C or better; STP 226 or 281 with C or better OR Visiting University Student
ACO	430	Wireless Networks	Wireless transmission fundamentals, wireless LAN, cellular networks and systems, Bluetooth, mobile application development, sensor networks, performance analysis and recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better OR Visiting University Student
ACO	431	Network Security	Digital threats and attacks, cryptography, confidentiality, authentication protocols, message integrity, security in network applications, intrusion detection, malicious software countermeasures, firewalls.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better OR Visiting University Student
ACO	432	Distributed Systems	Distributed system models, distributed programming technique, clock synchronization, distributed snapshot, distributed mutual exclusion, concurrency control, fault tolerance, security, recent advances.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better OR Visiting University Student
ACO	461	Security Operations	How organizations monitor and manage the security of their infrastructures in the real world. Explains architecture principles, the use of monitoring tools and technologies, how to interpret different security data sources, as well as how to identify and respond to various security threats within a complex infrastructure. Requires students to utilize security toolsets within a laboratory setting to demonstrate their understanding of the technologies as well as course concepts.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 330 with C or better OR Visiting University Student

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ACO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
ACO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
ACO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
ACO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ACO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ACO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ACO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	501	Database Systems & Python	Design and implementation of databases for scientific applications. Defining and querying database systems using the SQL industry standard language. Data exchange using XML. Programming in Python to solve realistic problems using scientific data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ACO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	201	Intro to Actuarial Science	Introduces important aspects of actuarial work. Exposes the development of actuarial techniques in the context of life insurance, casualty and property insurance, superannuation and investment. Develops problem-solving skills and gives basic tools for risk management and financial modeling, including the use of Excel spreadsheets for both, calculations and simulations. Shows how studies in related disciplines (such as accounting, demography, economics, statistics, computing and mathematics) are essential to the education of an actuary. Guest speakers from the industry share their knowledge and insight on how to become a successful actuary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CIS 105 with B or better; MAT 270 with B or better OR Visiting University Student
ACT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	301	Risk Mgmt and Insurance	Provides an introduction to the different types of risks faced by individuals, businesses and society along with ways in which they make an assessment of, control and transfer of different types of risks including property risk, liability risk, personal risks and speculative risks such as financial risks. Covers risk management techniques including risk control and risk financing with a focus on insurance policies, and also presents other major topics in personal financial planning, social insurance, insurance operations and regulations, and reinsurance. Also gives attention to contemporary issues and challenges in risk management and insurance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	SB	Prerequisite(s): Actuarial Science major; ACT 201 with B or better; MAT 270 with B or better; STP 420 with B or better OR non-Actuarial Science major; MAT 210, 265, or 270; ECN 211 or 212; ECN 221 or STP 226 or STP 420 OR Visiting University Student
ACT	302	Fndmtl of Enterprise Risk Mgmt	Examines in detail the Enterprise Risk Management (ERM) as a decision support system that helps organizations understand risk and assure the achievement of their goals. Provides understanding of what risk is and what an ERM process looks like for organizations, including some common challenges and pitfalls of institutionalizing an ERM culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 OR Visiting University Student
ACT	320	Property & Casualty Insurance	Examines the fundamental principles and uses of property and casualty insurance. Also includes detailed examination of contracts, rating, underwriting, regulation and financial strength of insurers. In particular, devotes attention to the role of property and casualty insurance in addressing the economic and social problems encountered by businesses. Furthermore, also assists in the preparation to take the State of Arizona's Department of Insurance Property & Casualty exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301
ACT	330	Life and Health Insurance	Develops an understanding of life and health insurance and the place of those products in the risk management plans of individuals and businesses. In particular, devotes attention to the role of life and health insurance in addressing the economic and social problems encountered by individuals and businesses. Furthermore, prepares the students to take the State of Arizona's Department of Insurance Life and Health Insurance exam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301
ACT	370	Software Tools Bus Analytics	Data analysis has become a core aspect of actuarial science. Course focuses on using three important software applications (Excel, R and Python) to conduct data acquisition and cleaning, preparing data for analysis, exploratory data analysis, basic statistical model building (linear regression), and data visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with B or better; STP 226, 231, or 420 with B or better; Credit is allowed for only ACT 370 or ACT 394 (R in Excel for Business) OR Visiting University Student
ACT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
ACT	410	Mathematics of Finance	Prepares potential actuaries to master national exams. Provides an understanding of the fundamental concepts of financial mathematics and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Gives an introduction to financial instruments including derivatives and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 201 with B or better; MAT 270 with B or better; Credit is allowed for only ACT 410 or ACT 510 or MAT 340 OR Visiting University Student

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ACT	415	Probability for Risk Mngmnt	Prepares potential actuaries to master national exams. Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 201 with B or better; MAT 272 with B or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 OR Visiting University Student
ACT	420	Ratemaking and Reserving	Utilizes information on property and casualty ratemaking and reserving techniques, from an actuarial perspective. Ratemaking and loss reserving are the two fundamental functions performed by actuaries, and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 301 with B or better; STP 427 with B or better; Credit is allowed for only ACT 420 or ACT 520
ACT	430	Math of Financial Derivatives	Prepares potential actuaries to master the national exams. Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; Credit is allowed for only ACT 430 or ACT 530 OR Visiting University Student
ACT	435	Statistics for Risk Modeling	Statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression-based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals, classification, clustering and tree-based methods. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 370 with B or better; STP 427 with B or better; Credit is allowed for only ACT 435 or ACT 535 OR Visiting University Student
ACT	440	Long-Term Actuarial Math I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care, etc.). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 310 with B or better; ACT 415 with B or better; MAT 343 with B or better; Credit is allowed for only ACT 440 or ACT 540 OR Visiting University Student
ACT	441	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Expose students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 440 with C or better; Corequisite(s): STP 427 with B or better; Credit is allowed for only ACT 441 or ACT 541
ACT	450	Actuarial Models I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 with B or better; STP 427 with B or better; Credit is allowed for only ACT 450 or ACT 550 OR Visiting University Student
ACT	451	Actuarial Models II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 450 with C or better; Credit is allowed for only ACT 451 or ACT 551
ACT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	491	Actuarial Exam Prep Seminar	Provides potential actuaries with review and practice for an actuarial examination.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Pre- or corequisite(s): ACT 410 (ACT 310) or 415 with B or better if completed OR Visiting University Student
ACT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		

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ACT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
ACT	505	Enterprise Risk Mgmt Models	Actuarial modeling methods used in enterprise risk management. These methods are useful for the quantification of many types of risks faced by businesses and other organizations. Furthermore, these methods look at the correlation between risks that can create unexpectedly large exposures. Students build risk models for an actual enterprise.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	510	Mathematics of Finance	Provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. Topics include: mathematics of compound interest, including annuities certain, amortization schedules, yields curves, sinking funds and bonds. Introduces financial instruments including derivatives, and the concept of no-arbitrage as it relates to financial mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 310 or ACT 510 or MAT 340
ACT	515	Probability for Risk Management	Develops knowledge of the fundamental probability tools for quantitatively assessing risk. Topics include: introduction to probability concepts including definition of probability, independence, conditional probability, random variables, specific discrete and continuous probability distributions, multivariate random variables, moments and moment generating functions, functions of random variables, sampling distributions and central limit theorem. Emphasizes the application of these tools to problems encountered in actuarial science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421
ACT	520	Rate-making and Reserving	Provides knowledge of property and casualty rate-making and reserving techniques from an actuarial perspective. Rate-making and loss reserving are the two fundamental functions performed by actuaries and are necessary for satisfying an organization's strategic, operational and regulatory goals and requirements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 420 or ACT 520
ACT	530	Math of Financial Derivatives	Develops knowledge of the theoretical basis of certain actuarial models and the application of those models to insurance and other financial risks. Topics include: option pricing, Black-Scholes formula, delta hedging, exotic options, Brownian motion, interest rate models and simulations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 430 or ACT 530
ACT	535	Statistics for Risk Modeling	Uses statistical techniques in business forecasting such as: simple linear regression, multiple linear regression, hypothesis testing and confidence intervals in linear regression models, testing of models, data analysis and appropriateness of models, linear time series models, moving average, regression based and/or ARIMA models, estimation, data analysis and forecasting with time series models, forecast errors and confidence intervals. Emphasizes analysis of various types of real data using R.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 435 or ACT 535
ACT	540	Actuarial Mathematics I	Develops an understanding of the key features of long-term insurance coverages (life, health and general); annuities and retirement benefits (pensions, retiree health care). Students accumulate knowledge of the theoretical basis of actuarial models and the application of those models to long-term insurance and other financial risks. Topics include: life tables, present value determination for life insurances and annuities and premium calculations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 510 with B or better, ACT 515 with B or better; Credit is allowed for only ACT 440 or ACT 540
ACT	541	Actuarial Mathematics II	Focuses on reserving for insurances and annuities for long-term actuarial models including multiple lives and/or multiple decrement models. Exposes students to different reserving types as well as interpretation of common profit measures. Other topics include applications of the long-term models to pension plans and retirement benefits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 540 with B or better; Credit is allowed for only ACT 441 or ACT 541

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ACT	550	Actuarial Models & Modeling I	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business problems. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based on the model. Covers estimation of parameters for the severity, frequency and aggregate models and their modifications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; Credit is allowed for only ACT 450 or ACT 550
ACT	551	Actuarial Models & Modeling II	Provides detailed understanding of the steps involved in the modeling process and how to carry out these steps in solving business. Students analyze data from an application in a business context, determine a suitable model including parameter values and provide measures of confidence for decision making based upon the model. Topics include: credibility, insurance and reinsurance coverages, pricing and reserving for short-term insurance coverages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 550 with B or better; Credit is allowed for only ACT 451 or ACT 551
ACT	560	Insurance Data Analytics I	Provides knowledge of advanced applications of predictive modeling methods for solving actuarial problems. Methods that use the general and generalized linear models are becoming more important in the insurance industry for both traditional actuarial pricing and reserving problems and for marketing and operational problems. Prepares students to understand these problems and to gain some experience in analyzing them through projects involving real data. Topics include: linear models, regression with categorical dependent variables, regression with count dependent variables, generalized linear models, frequency and severity models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	561	Data Analytics in Insurance II	Expose students to a wide variety of advanced analytics techniques applicable to data types that are routinely found within the insurance industry. Application of data science is rapidly growing in insurance industry and this course creates a long-term knowledge base for students to remain empowered and in time, master and use more sophisticated emerging techniques. Topics covered include generalized additive models, discriminant analysis, classification and regression trees, bagging, random forests, boosting, mixture model-based approaches, spatial models and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 560 with B or better
ACT	565	Regulation & Fin Reporting	Provides an overview of insurance regulation with regard to property and casualty coverages, ratemaking, pricing and solvency, and U.S. tort law as it affects the property and casualty business. Further identifies major U.S. insurance programs administered by government agencies and insurance industry organizations such as: automobile plans; crop insurance; flood insurance; government backstops; guaranty funds.; residential markets (auto, workers comp, property); workers compensation (including interaction with Medicare). While addressing financial reporting, solvency and taxation issues, students evaluate the financial health of an insurance entity by completing specific schedules and exhibits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	570	Stochastic Calc for Finance	Uses stochastic calculus as a foundation for advanced mathematics of financial derivatives. Topics covered include: stochastic calculus, martingales and arbitrage, Black-Scholes equation and pricing derivative securities, and fundamental theorems of asset pricing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	571	Adv Math Financial Derivatives	Applies stochastic calculus to advanced topics in mathematics of financial derivatives. Topics include: term structure models, pricing derivative securities, fundamental theorems of asset pricing, models of equity and fixed income markets, and exotic options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student; ACT 570 with B or better
ACT	575	Portfolio Theory and Risk Mgmt	Provides an overview of measurement and management of risk and enables students to master the methods and concepts of portfolio theory. Those models and concepts include risk aversion, utility functions as a representation of preferences, efficient frontiers, Markowitz Portfolio theory, the Capital Asset Pricing model, security market line, value at risk and expected shortfall, as well as concepts of coherent risk measures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ACT	585	Advanced Mortality Modeling	Expose students to a wide variety of advanced models for forecasting human mortality. Explains the relevant repositories of mortality data in the context of application of most-used advanced mortality forecasting models. Presents both discrete time as well as continuous time stochastic mortality models. Students also learn about approaches for managing longevity risk via natural hedging, reinsurance and mortality-linked derivatives as well as pricing of basic insurance products in the context of advanced mortality models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): Actuarial Science MS student
ACT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
ACT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ACT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ADE	321	Architectural Studio I	Introductory building design problems. Emphasizes design process, communication methods, aesthetics, construction, and technology.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architecture BSD major; ALA 226 with C or better OR Visiting University Student
ADE	322	Architectural Studio II	Site and building design problems. Emphasizes programmatic and environmental determinants and building in natural and urban contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Architectural Studies student; ADE 321 with C or better
ADE	421	Architectural Studio III	Topical design problems of intermediate complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 322 with C or better OR Visiting University Student
ADE	422	Architectural Studio IV	Topical design problems of advanced complexity, including interdisciplinary problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Architectural Studies BSD major; ADE 421 with C or better
ADE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ADE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ADE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ADE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ADE	510	Foundtion Architectural Studio	Fundamentals of architectural design, methodology, visualization, and representation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	511	Core Architectural Studio I	Applies design fundamentals in architectural problems, including construction, technology, programmatic and environmental determinants.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 510 with C or better
ADE	512	Core Architectural Studio II	Applies architectural design fundamentals to increasingly complex problems, including specific sites and activities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	6		Pre-requisites: Master of Architecture student; ADE 511 with C or better
ADE	521	Adv Architectural Studio I	Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; Co-requisite: ATE 553 and ATE 563
ADE	522	Adv Architectural Studio II	Design problems emphasizing the comprehensive integration of building systems and technologies as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 521 with a C or better; Co-requisites: APH 505 and ATE 556
ADE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student

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ADE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ADE	621	Adv Architectural Studio III	Design problems emphasizing the urban context, planning issues, and urban design theory as influences on architectural form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Master of Architecture student; ADE 522 with a C or better; Co-requisite: APH 515 OR Bldg Des(Energy Perform/Bldgs) MS student
ADE	622	Adv Architectural Studio IV	Individual, student-initiated project reflecting a culminating synthesis of architectural ideas.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): ADE 621 with C or better; Master of Architecture student; Corequisite(s): APH 515 or Built Environment (Energy Perf/Climate Responsive Arch) MS student
AEE	313	Aircraft Dynamics and Control	Aircraft static stability; equations of motion; dynamic modes and stability; stability derivatives; response to controls; introduces automatic control of aircraft.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; MAE 318 with C or better
AEE	325	Aerospace Structures/Materials	Applies structural analysis to aircraft and spacecraft structures. Loads on aerospace structures, buckling and stability, stiffened panels, primary wing and launch-vehicle structure, vibration of large structures, properties and selection of aerospace structural materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Aerospace Engineering major; MAE 202 with C or better; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit is allowed for only AEE 325 or MEE 322 OR Visiting University Student
AEE	344	Fundamentals Aircraft Design	Aircraft performance, RFP's, Federal Aviation Regulations, aircraft sizing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; MAE 202 with C or better; MAE 214 with C or better; MAE 384 with C or better; Pre- or corequisite(s): AEE 325 with C or better if completed
AEE	360	Aerodynamics	Airfoils and wings, ideal flow, boundary layers, finite-difference solutions, wind-tunnel testing. AEE 360, AEE 361, and AEE 362 must all be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prereq(s) w/C or better:Aero Engr or Mech Engr BSE major; ENG 102, 105 or 108; MAE 242; MAE 384; MAT 267 or 272; Pre- or coreq(s):MAE 301 w/C or better if completed; Credit allowed for only AEE 360 or AEE 394 (Aerodynms I) OR Visiting University Student
AEE	361	Aerodynamics Laboratory	Flow measurement. Wind-tunnel testing. Engineering laboratory reports. AEE 360, AEE 361, and AEE 362 must all be taken to secure L General Studies credit.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1	L	Prerequisite(s) with C or better: ENG 102, 105, or 108; MAE 242; MAE 384; Pre- or corequisite(s) with C or better if completed: AEE 360; MAE 301; Credit is allowed for only AEE 361 or AEE 394 (Aerodynamics I Lab) OR Visiting University Student
AEE	362	High-Speed Aerodynamics	Compressible flow at subsonic and supersonic speeds; ducts, nozzles and diffusers; normal and oblique shocks, transonic flow, numerical solutions; experimental applications. AEE 360, AEE 361 and AEE 362 must all be taken to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4	L	Prerequisite(s): Aerospace Engineering BSE major; AEE 360 with C or better; AEE 361 with C or better; ENG 101, 105, or 107 with C or better; MAE 241 with C or better; MAE 301 with C or better OR Visiting University Student
AEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
AEE	415	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MAE 318 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 415 or MAE 514 OR Visiting University Student
AEE	426	Design of Aerospace Structures	Flight vehicle loads, design of semimonocoque structures, local buckling and crippling, fatigue, aerospace materials, composites, joints, and finite element applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering BSE major; AEE 325 with C or better; Credit is allowed for only AEE 426 or MAE 526
AEE	445	Fund of Spacecraft Design	Spacecraft subsystems. Systems engineering, space mission design, space environment. Cost analysis. Risk and reliability analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engr (Astronautics) BSE major; AEE 325 w/ C or better; AEE 462 w/C or better; MAE 214 w/ C or better; MAE 318 w/ C or better; Pre- or corequisite(s): AEE 465 w/ C or better if completed; EEE 350 w/ C or better if completed

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AEE	462	Space Vehicle Dynamics/Control	Attitude dynamics and control, orbital mechanics, orbital transfer/rendezvous, spacecraft control systems design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 301 with C or better; MAE 318 with C or better
AEE	463	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; AEE 362 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) OR Visiting University Student
AEE	465	Rocket Propulsion	Rocket flight performance; nozzle design; combustion of liquid and solid propellants; component design; advanced propulsion systems; interplanetary missions; testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering major; AEE 362 with C or better; AEE 462 with C or better OR Visiting University Student
AEE	466	Rotary Wing Aerodynamics/Perfm	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 with C or better; Credit is allowed for only AEE 466 or MAE 566
AEE	468	Aircraft Systems Design	Group projects related to aircraft vehicle design, working from mission definition and continuing through preliminary design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Aeronautics) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 344 with C or better; Pre- or corequisite(s): AEE 463 with C or better if completed
AEE	471	Computational Fluid Dynamics	Numerical solutions for selected problems in fluid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering major; AEE 360 or MEE 340 with C or better; MAE 384 with C or better; Credit is allowed for only AEE 471 or MAE 561
AEE	478	Fund Autonomous Aircraft Sys	First of a two-semester capstone sequence. Introduces autonomous aircraft performance and operations, aircraft performance prediction, ground control and support, sensors, communications and telemetry, aerospace ethics and law, design methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Autonomous Vehicle Systems) BSE major; AEE 313 with C or better; AEE 325 with C or better; AEE 360 with C or better; AEE 362 with C or better; MAE 214 with C or better
AEE	479	Design of Autonomous A/C Sys	Second of a two-semester capstone sequence. Autonomous aircraft design project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 400 with C or better; AEE 478 with C or better
AEE	480	Space Systems Design	Group projects related to space systems design, working from mission definition and continuing through conceptual design.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace Engineering (Astronautics) BSE major; AEE 445 with C or better; AEE 465 (or MAE 465) with C or better; EEE 350 with C or better; MAE 214 with C or better
AEP	501	Practical, Professional Ethics	Acquaints students with practical and professional ethics. Assumes no prior experience in ethics, and provides practicable knowledge as well as theoretical knowledge. The first in a series of courses for the MA program in Applied Ethics and the Professions, the course is primarily intended to prepare students in that degree program for their subsequent courses. However, it has been designed to be useful to all graduate students who are interested in learning about practical and professional ethics. The beginning of the course is devoted to the more general subjects of practical ("everyday") ethics and professional ethics, while the remaining weeks are spent focusing on the ethical issues that occur in the context of specific professions, with particular emphasis given to those professions that seem most relevant to the aspirations and interests of the students enrolled in the course.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): graduate student or Barrett Honors student
AEP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AEP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AEP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AES	101	Air Force Today I	Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	102	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes common Air Force customs and courtesies, drill and ceremonies, health and physical fitness through group participation.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 101 OR Visiting University Student
AES	103	Air Force Today II	Introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: introduction to leadership, Air Force core values, introduction to interpersonal communication and team building, and a continuation of communication skills.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	104	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes learning the environments and dynamics of an Air Force officer.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 103
AES	201	Evol/USAF Air/Space Power I	Focuses on facilitating the transition from Air Force ROTC cadet to Air Force ROTC candidate. Examines the general aspects of air and space power through a historical perspective. Utilizing this perspective, covers a time period from the first balloons and dirigibles to the modern technology currently used in overseas contingency operations. Featured topics include: Air Force heritage, Air Force leaders, introduction to ethics and values, group leadership problems and continuing application of communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	202	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Provides application of advanced drill and ceremonies; issuing commands; knowing flag etiquette; and developing, directing, and evaluating skills to lead others.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 201 OR Visiting University Student
AES	203	Evol/USAF Air/Space Power II	Provides knowledge-level understanding for general element and employment of air and space power. Furthermore, discusses the importance of Air Force Core Values with use of operational examples and historical Air Force leaders. Continues to develop communication skills. Topics include: the Air Force mission and organization, modern joint expeditionary Airmen, officer opportunities, and professionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	2		
AES	204	Leadership Laboratory	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes preparation for field training.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 203

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AES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	1-4		
AES	301	Air Force Leadership Studies I	Study of communication skills, leadership and quality management fundamentals, leadership ethics, and professional knowledge required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	302	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experiences applying leadership and management principles to motivate and enhance the performance of other cadets.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 301 OR Visiting University Student
AES	303	Air Force Leadership Stds II	Continuation of AES 301. Topics include: communication skills, ethics, leadership, professional knowledge, and quality management required of an Air Force officer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	304	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Emphasizes planning the military activities of the cadet corps and applying advanced leadership methods.	N	LAB	Y	YGB	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Co-requisite: AES 303
AES	401	National Security Affairs	Examines advanced ethics, Air Force doctrine, national security process, and regional studies. Special topics include: civilian control of the military, military justice, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AES	402	Leadership Lab	Dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. Advanced leadership experience demonstrating learned skills in planning and controlling the military activities of the corps.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		Corequisite(s): AES 401 OR Visiting University Student
AES	403	Preparation for Active Duty II	Continuation of AES 401. Topics include: civilian control of the military, doctrine, ethics, military justice, the national security process, and officership.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	3		
AES	404	Leadership Lab	Continuation of AES 402 with emphasis on preparation for transition from civilian to military life.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Aerospace Studies	0		
AET	210	Measurements and Testing	Measurement systems, components, system response, and the characteristics of experimental data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 112; Pre/Corequisite(s): MAT 266
AET	215	Aircraft Systems	Principles and design features of aircraft structures, systems, and materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
AET	300	Aircraft Design I	Applied aerodynamics, standard atmosphere, speed measurement, infinite and finite wings, airplane performance.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: AET 215; MET 211, ECE 210, or MAE 212
AET	415	Gas Dynamics and Propulsion	Introduces compressible flow, internal and external flow, and aerothermodynamic analysis of propulsion systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): AET 300; MET 340 or MAE 340 or Fulton Schools of Engineering graduate student
AET	417	Aerospace Structures	Analysis and design of aircraft and aerospace structures. Shear flow. Semimonocoque structures. Effects of dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 213, MET 313 (or ECE 313); MET 212, AET 312 (or ECE 312); AET 300
AET	420	Experimental Aero/Wind Tunnel	Experimental applied aerodynamics related to aeronautical and mechanical design. Wind tunnel design and testing. Low speed flows.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: AET 300; MET 340
AET	524	Application of Heat Transfer	Energy conservation, steady-state and transient conduction, convection transfer, free and forced convection Reynolds analogy, blackbody and environmental radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 432 or MAE 340; Credit is allowed for only AET 524 or AET 432
AET	560	Numerical Methods/Engr Tech	Analyzes problems in physical sciences, models physical problems, perturbation techniques, curvefitting, data analysis, numerical solutions, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering students; Senior or higher academic level
AFR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	200	Intro to Africana Studies	Introduces the study of African and African-descended peoples; theory, themes, and perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		SB & G & H
AFR	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		SB & C Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
AFR	210	Intro African American Studies	Examines the political, historical, and cultural origins of African American studies as an academic discipline.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		C
AFR	212	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		C Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
AFR	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
AFR	225	Black Movements in America	Survey course on the historical and political development of mass movements by African Americans and Black resistance in the United States. Traces nearly 400 years of Black resistance against injustices and mass struggles for equality and liberation. Topics include the anti-slavery movement, anti-lynching campaign, the Civil Rights movement, the Black Power movement, prison abolitionism, the reproductive justice movement, and movements for economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only AFR 225 or JUS 200 (Black Movements in America)
AFR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	300	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
AFR	301	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
AFR	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
AFR	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304
AFR	305	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
AFR	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
AFR	318	African/Diaspora Wmn Writers	Intersection of race, class, gender, and ethnicity in black women's fiction from the United States, the Caribbean, and Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 or WST 100 or WST 300 or minimum 45 hour
AFR	320	Africa: Politics, Enviro & Dev	An in-depth analysis of the African experience as a way to understand the consequences of human environment relationships, wealth and power differentials, and individual and global citizenship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	325	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
AFR	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student

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AFR	335	Hstrcl Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
AFR	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
AFR	340	The Making of Modern Africa	Advanced study of the events and processes leading up to the colonization of Africa and the subsequent changes in African societies under colonial rule and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours OR Visiting University Student
AFR	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345
AFR	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
AFR	351	Gender and Hip Hop	Interrogates the history and global proliferation of hip hop as a set of cultural and consumer practices including music, dance, art, fashion, language and entrepreneurialism. Uses an intersectional approach to unpack hip hop's contributions to larger social discourses around race, gender, gender expression, sexuality, sexual identity and sexual expression, and youth culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AFR 351 or AFR 394 (Gender and Hip Hop) or JUS 351 or JUS 394 (Gender and Hip Hop) or WST 351 or WST 394 (Gender and Hip Hop) OR Visiting University Student
AFR	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
AFR	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
AFR	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AFR	355	Democracy/Civil Society/Africa	Advanced examination of contending perspectives on the state and civil society of Africa. Course will specifically analyze the democratic struggles in sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours
AFR	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student

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AFR	360	Black Families in the Diaspora	Within a historical, cultural, social-economic, and international context, the institution of Black families begins with their lives in Africa, South America, and the Caribbean and follows the cultural continuities and adaptations impacting the structure and functioning of contemporary African America families. Theoretical models provide focus to studying voluntary and involuntary migration, family labor force involvement, gender roles, marital relations, parenting, kinship and community networks. Throughout the course attention is given to the role of social policies in shaping the well-being of Black families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 or FAS 101; Credit is allowed for only AFR 360 or FAS 360
AFR	363	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
AFR	364	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C & H	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
AFR	365	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 365 (or AFH 364) or WST 364
AFR	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
AFR	368	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Eroticism)
AFR	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student
AFR	372	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
AFR	373	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
AFR	375	Race, Gender and Sport	Advanced and interdisciplinary examination of the social concepts of race and gender and their economic impact on sports in America. In-depth studies will focus on the role of regulatory agencies, the impact of these regulatory agencies have on sport as well as multiple legal issues surrounding athletics	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): AFR 200 or minimum 45 hours OR Visiting University Student
AFR	383	Blacks in Sci, Med & Publ Hlth	In-depth study of Blacks who have made significant contributions to science and medicine in the U.S. Begins with a critical examination of ancient African scientific contributions. Highlights specific individuals, analyzing their life's path to their respective careers. Also discusses the role of racism and discrimination and their efforts to overcome these.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 383 (or AFS 383) or AFS 394 (Blacks in Science, Medicine, and Public Health)
AFR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		

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AFR	418	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
AFR	420	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
AFR	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
AFR	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & G	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AFR 459 or ENG 459 OR Visiting University Student
AFR	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student
AFR	465	Harlem Renaiss:Cultural Hist	Socio-political, historical contexts and worldwide ramifications of the cultural productions (theater, music, visual arts, and literature) of the Harlem Renaissance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		
AFR	466	Peoples and Cultures of Africa	An in-depth study of the diversity of African people and culture from an interdisciplinary perspective. Emphasizes social, political, and economic relations, as well as inequality, art, gender roles, slavery, and slave trade.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student
AFR	470	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471
AFR	480	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
AFR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AFR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
AFR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AFR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AFR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; 9 upper-division hours OR AFR 200; ENG 101, 105, or 107 with C or better; minimum junior standing
AFR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
AFR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AFR	502	Africa/African Diaspora World	Combines lecture, critical discussion of readings, guest speakers, student presentations and individual research projects. Drawing on various sources (written, oral, archaeology), explores themes linking peoples of Africa and African heritage in Africa, the United States, the West Indies and Latin America, and Europe, the processes of cultural transformations in Africa and the evolution of African cultures and survival in the New World. Explores topics including transatlantic slave trade, comparative slavery, African-American and Latin America emigration to Africa, African immigration to the New World and the Pan-African movement. Emphasizes links between blacks in Africa, the West Indies and the United States, the cultural and political influences they had on each other and the legacy that remains in these areas today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AFR 500 (Africa and the Diaspora World) or AFR 502
AFR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AFR	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	100	Introduction to Agribusiness	Overview of agribusiness industries and career opportunities.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	215	Fund of Sustainable Food Sys	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
AGB	216	The Sustainable Plate	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
AGB	250	Resource Allocation	Beginning class that focuses on the specific microeconomic principles that are needed to understand the food industry, agricultural production, food safety and production of renewable natural resources. Focuses extensively on the detailed information that students need to understand the nuances of specific issues associated with the food, agriculture and renewable natural resources, including a keen understanding of monopolistic competition, the economic rationale for governmental regulation, effects of property rights on renewable resources, agricultural price supports, prospect theory and behavioral economics.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Credit is allowed for only AGB 250 or AGB 294 (Economics of Resource Allocation) OR Visiting University Student
AGB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	302	International Mgt and Agribus	Management and agribusiness issues in the transition of developing countries from subsistence to global operations and competition.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	G	Prerequisite(s): minimum 56 hours OR Visiting University Student

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AGB	321	Agribusiness Marketing	Focuses on food and consumer products marketing at an intermediate level. Covers strategic concepts such as situational analysis, planning and objectives, and target marketing and positioning. Illustrates both the theory and application of strategic decision making through case analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	333	Agribusiness Finance	Examines the markets, institutions and current issues important to financing firms in the food and agribusiness sector. Topics include cost of capital, specialized lending institutions (farm credit system), credit decisions, vendor financing, private equity, institutional ownership, cooperatives and risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	340	Food Processing	Introduces processed food quality assurance, statistical sampling, and inspection procedures.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	360	Agribusiness Statistics	Statistical methods with applications in agribusiness and resource management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	CS	
AGB	366	Agribusiness Production Tech	Examines methods for managing diverse crop and livestock enterprises with an emphasis on growth, development, marketing, and loss prevention.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	367	Agribusiness Processing Tech	Biotechnology and other methods used in the production, processing, and distribution of food.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	410	Agribusiness Management	Business operations and human resource management principles applied to real-world problems faced by firms across the food and agribusiness value chain, with emphasis given to the formulation, implementation and evaluation of competitive strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	414	Food and Agribus Policy Issues	Analysis of agribusiness firm decisions in the ecological, economic, social, and political environments. Special emphasis on ethical issues surrounding food production and consumption.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 56 hours OR Visiting University Student
AGB	420	Food Advertising and Promotion	Focuses on advertising and promotional strategies in the food industry, with emphasis on consumer packaged goods.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	425	Food Supply Networks	Information, methods and resources used in the management of global food supply networks. Emphasizes systems of food marketing and distribution from the farm to the consumer.	N	LEC	N	GNA	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	429	Mkt Comm in Food & Agrib Ind	Focuses on written and oral communication in the food and agribusiness industries. Through real-world projects and collegiate marketing competitions, students address current issues in the food and agribusiness industries. Students learn how to effectively communicate strategic visions. Also entails research in the food and agribusiness industries to support strategic plans.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300, 302, 303, or 390 or minimum 56 hours
AGB	431	Agribusiness Financial Mgt	Comprehensive treatment of topics in financial management of agribusiness: capital structure, dividend policy, asset valuation, mergers and acquisitions, risk management.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321, FIN 300 or TMC 320
AGB	433	Agribusiness Financial Markets	Role and function of agribusiness in U.S. financial system. Topics include rural banking, farm credit system, monetary policy, and federal reserve.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 333 or FIN 300
AGB	435	Commodity Future and Opt Mkts	Provides an understanding of how to use futures and options markets in a risk management and pricing context, especially as it pertains to the marketing and procurement of agricultural commodities by grain and livestock merchandisers, food manufacturers, and producers/distributors/consumers of natural resources.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
AGB	440	Food Safety	Control, prevention, and prediction of microbial and chemical food-borne diseases.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		
AGB	445	Food Retailing	Critical examination of trends, problems and management functions of food retail managers across various retail institutions. Emphasizes the biological nature of food products and the dietary preferences of consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): AGB 321 or MKT 300 or MKT 302 or MKT 303 or MKT 390 OR Visiting University Student
AGB	452	Global Food&Agricultural Trade	Applies international trade theory to analyze the effects of government policies and trade agreements on the global food and agribusiness sector.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 45 hours
AGB	456	Food Prod Innovation and Dev	The food product development process and how it interfaces with food technology and packaging concepts. Emphasizes the team approach, which is prevalent in the food industry.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours OR Visiting University Student

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AGB	481	Strategic Pricing in Food Mkts	By applying the basic concepts of microeconomics to real-world data, this course allows the student to not only gain a book-oriented understanding of how businesses in the food industry behave, but practical, hands-on experience that lasts far beyond the classroom.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): minimum 56 hours
AGB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6		Prerequisite(s): Barrett Honors student
AGB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AGB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
AGB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-7		
AGB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-3		
AGB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		
AGB	511	Advanced Agribusiness Mgmt	Analysis of organization behavior, change, and resource requirements within agribusiness systems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	514	Advanced Agribusiness Analysis	Vertical integration and differentiation in food and agricultural industries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	528	Adv Agribusiness Marketing	Theory and analysis of marketing strategy related to food and fiber products. Covers concepts of strategic market planning (e.g., segmenting, targeting and positioning), with application of these concepts at an advanced level. Also examines the broad social, cultural, political and economic issues that impact marketing.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	529	Adv Agribus Marketing Channels	Analyzes agribusiness market channel systems. Formulation of marketing strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	532	Advanced Agribusiness Finance	Financial management of agribusiness firms; agribusiness financial analysis, investment analysis, agricultural risk management, and introduction to agricultural financial intermediaries.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	535	Commodity Analysis	Analysis of commodity markets.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	552	Intl Agricultural Policy	Uses international trade theory to analyze the effects of government policies, trade agreements, and exchange rates on agribusiness.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	554	Advanced International Trade	Advanced international practices in trading of agribusiness, technology, and resource products and services.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	560	Adv Agribusiness Mgmt Systems	Development and use of decision support systems for agribusiness management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	561	Applied Econometrics	Uses model building, hypothesis testing, and empirical analysis in solving agribusiness problems.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	570	Managerial Econ for Agribus	Concepts in micro- and macroeconomics applied to agribusiness management environments: price formation, market structure, information economics, fiscal and monetary policy.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AGB	589	Agribusiness Capstone	Strategic management of organizations focusing on developing value-creating strategies in dynamic environments.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Morrison School of Agribusiness	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	701	Adv AGB I: Adv AGB Analysis	Advanced topics include benefit-cost analysis, input-output analysis, consumer demand, agricultural policy, international trade, welfare economics and applied mathematical economics.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	702	Adv AGB II: Applied Econometr	Econometric analysis techniques applied to multinomial and count models, welfare economics, demand models and maximum likelihood estimation using STATA.	N	LEL	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	703	ADV AGB III: ADV Empirical Mo	Microeconomics applied to empirical models involving agribusiness including consumer and producer theory, empirical industrial organization, strategic choice and price behavior.	N	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AGB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Morrison School of Agribusiness	1		

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AGB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Morrison School of Agribusiness	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	101	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
AIS	102	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
AIS	180	Intro/American Indian Studies	Introduces the study of American Indian justice issues from an interdisciplinary perspective. Primary topics include sovereignty, law, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	
AIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	201	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
AIS	202	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
AIS	280	Amer Indian Sovereignty/Courts	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	285	Federal Indian Policy	Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	H & C	
AIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	320	AI Philosophies & World Views	Does it make sense to speak about American Indian intellectuals, thinkers or philosophers? Not only have Indians been thinking and thinking deeply for generations, but they have also produced a body of written works that have formed the foundation of contemporary American Indian studies. Covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; junior standing; Credit is allowed for only AIS 320 or AIS 394 (American Indian Philosophical/World Views) OR Visiting University Student
AIS	360	Issues in Urban Indian Country	In-depth examination of the historical, social, economic, and political implications of Indigenous migrations to urban areas. Over 50% of Native people are living in cities. What are they doing? Why are they there? Are they still under the federal trust relationship? Evaluates the social, political, and economic structures built by American Indians living in the urban environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 360 or 394 (Issues in Urban Indian Country)
AIS	370	Amer Indian Languages/Cultures	Emphasizes understanding of Indian language families and the relationship of oral traditions to culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): AIS 180 with C or better
AIS	375	Innovation for AI Sustainabili	American Indian tribes are poised at an historic opportunity to accelerate innovation within their communities. Many tribal leaders have stated that to create true sustainability, tribes need to practice innovation and sustainable development in a manner that is a cultural match to their traditions and values. Examines topics directly associated with creating tribal economies with innovation, entrepreneurial and sustainability in an American Indian context as key factors. Consists of class lectures, guest speakers, student discussion, individual and group teamwork, and presentations. Participants form into teams to identify, develop and define an innovative product or service idea that addresses a significant need in Indian Country that can be addressed through innovation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 375 or AIS 394 (Innovation for American Indian Sustainability)
AIS	380	Contemp Issues/American Indian	Surveys legal, socioeconomic, political, and educational state of contemporary reservation and urban Indians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
AIS	381	American Indian Women	Draws from a diverse range of Indigenous critical traditions to examine discourses of gender, identity, and sexuality as sites of cultural revitalization and conflict and theorizes the meaning of each of these categories from diverse Indigenous communities. Considers contemporary and traditional works by Indigenous women with a special emphasis on the historical, socio-cultural, and legal contexts of each work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): WST 100, 300, or AIS 180 with C or better OR Corequisite(s) if completed 30 hours or more: AIS 180, or WST 100 or 300; Credit is allowed for only AIS 381 or WST 382
AIS	385	Entrepre for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
AIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	420	Amer Indian Studies Research	Surveys diverse research methods, including statistical, historical, interpretative, and narrative approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	L	Prerequisite(s): AIS 180 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
AIS	430	Contemp Indigenous Spirituality	Why do so many indigenous people across North America want to revitalize their traditional ways when there is supposedly so much opportunity awaiting them in all segments of American society? What are the benefits of such an endeavor and what might be the consequences if this objective is not pursued? This course is premised on the hypothesis that indigenous customs and beliefs contain knowledge that is not only vital to the well-being of the communities in which this native wisdom is found, but also to those communities seeking a more sustainable way of living in the land they call home. After delving into a critique of the religious principles that went into the settling of America, complete with notions of manifest destiny, a way is opened for a more native-oriented discourse on community, nature, economy, and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 430 or 494 (Ind Spirituality in Postmodern)
AIS	440	Cultural Professionalism	Emphasizes professional and leadership skills to prepare students for academic and career endeavors after undergraduate degree completion. Explores indigenous perspectives on communication, research, professional and leadership skills. Research focuses on addressing the needs of Arizona Indian Nations and Tribes and culminates in a research paper, in-class presentation and community development poster presentation. Showcases research posters in a research symposium in which guests vote on the most innovative and practical poster proposal.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only AIS 440 or AIS 494 (Cultural Professionalism)
AIS	445	AI Leadership and Resistance	Examines the modern challenges that leaders face in American Indian communities with a foundation in indigenous concepts of leadership, sovereignty and nationhood. Topics include pre-contact leadership principles and systems of governance, tribal sovereignty, nation-building, politics, governing systems, leadership styles, military leadership, internal disputes and conflict resolution, activism, mobilization, community leadership, political/elected leadership, and other leadership-related topics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3	SB & H & C	Prerequisite(s): minimum junior standing or 3 hours of an AIS course; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521

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AIS	455	Cultural Resource Law	Examines how U.S. laws, policies, executive orders, and court decisions have affected Indian nations and peoples in matters of cultural resources and burial rights. Considers the protests, legal battles, and political campaigns Indians have waged to reaffirm their fundamental human rights in the areas of repatriation and sacred sites protection. Examines the ways in which filmmakers and the media present these issues to the public. Assesses the present status of Indian religious rights and cultural resource laws. Sovereignty and its relationship to Indian spirituality is a theme that permeates the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing; Credit is allowed for only AIS 455 or 494 (American Indian Cultural Resources)
AIS	470	Tribal Governance	Critical and historical examination of Indigenous governance and leadership. Includes a survey of historical policy developments and political change that laid the foundation for contemporary Indian government and an assessment of the effectiveness of modern tribal administrations and decision-making bodies. Explores the diverse approaches to tribal governance, community-based political strategy and local interpretations and assertions of sovereignty and self-governance. Project work facilitates focused student learning on the challenges and opportunities in government for a specific Indian nation. Case work and consultation with practitioners in Indian government complement textbook reading in law, history and policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Pre-requisite: AIS 285; Credit is allowed for only AIS 470 or AIS 494, Tribal Governance
AIS	480	Actualizing Decolonization	Provides an in-depth investigation of the theory and concepts of colonization, decolonization, and Indigenous peoples in America, with brief comparisons with global Indigenous peoples and experiences. Covers classic scholarly works on colonization and decolonization to understand the frameworks in which colonization and decolonization develops, expands, and impacts Indigenous peoples. Through that theoretical understanding, examines and formulates ways in which decolonization can impact and be integrated into Indigenous lives and communities. Students shift from theory to praxis by writing and presenting on an informal grant proposal for a decolonizing project that can be implemented in an Indigenous or non-Indigenous community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	3	HU & C & G	Prerequisite(s): ENG 101; ENG 102; junior standing; Credit is allowed for only AIS 480 or AIS 494 (Readings-Decolonization) OR Visiting University Student
AIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6		Prerequisite(s): Barrett Honors student
AIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		
AIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-3		
AIS	501	AIS Paradigms	American Indian Studies emerged as an academic discipline in the late 1960s in part because of increasing dissatisfaction among Indians about the works of historians, anthropologists, and other scholars that was very often marred by methodological and conceptual flaws. Course provides an overview of ways of "doing" Indian studies from an American Indian Studies paradigm(s) through a critical examination of some of the most significant works emanating from this growing body of literature. Critiques paradigms that selected scholars have employed in the researching and writing of their topics. Seminar format allows students to take the lead in discussing each week's readings. Covers a range of scholarship dealing with American Indian issues; explores the development of American Indian Studies as an academic discipline; probes paradigms that Indigenous scholars have developed; and considers how those paradigms differ from those used by other disciplines.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	502	AIS Research Methods	Prepares students for thesis research, writing, and completion. Surveys graduate research methods in the field of American Indian Studies including historical, interpretative, and narrative approaches. Focuses on methodological issues specific but not limited to American Indian and Indigenous Studies. Focuses on Indian-centered methodological approaches to research that are essential to qualitative writing of the various topics in Indian country and other issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	503	Contemporary Issues of AIN	Provides an overview of the current status of American Indian Nations with regard to sovereignty, policy, politics, economy, and society. An exploration of current issues illustrates the unique challenges and innovative solutions put forth by Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	504	Amer Indian Film & Activism	Examines the American Indian film and activism with emphases on American Indian production, directing, editing, investigative journalism, documentary film, entertainment, and research. Exposes students to the development of activism in film and how film has been utilized to educate, inspire, and contribute to the challenges in Indian Country.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	505	Contemporary Visual Arts of AI	Focuses on a critical analysis of art, film, and media as they intersect with shaping the image and sustaining the culture of American Indians in North America. Examines the persistent and inappropriate stereotypes of American Indians as portrayed in film and media, including explanations for the persistence of negative stereotypes drawing on various aspects of critical race theory including power, politics, and race. Also introduces the scope and diversity of American Indian art and artists and highlights how native artists portray their views and culture through contemporary image making and representations. Stresses the interplay of art with sovereignty, identity, and politics. Emphasizes the powerful and significant connection between contemporary American Indian art and the persistence of indigenous cultures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	506	Indigenous American Literature	Teaches Indigenous (Indian, Native American, First Nations) literature's role in Indigenous history, cultural history, philosophy, society, culture, and developing cultural traditions. Students learn how tribal communities articulate themselves intellectually and artistically through literature and its development locally, nationally, and internationally.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	508	Revitalize Indigenous Language	Critically examines Indigenous languages, their decline and revitalization from a language ecology and a self-determination perspective. Includes historical, sociopolitical, educational, linguistic, sociolinguistic, and cultural issues that have had and continue to impact Indigenous peoples and their languages worldwide and their reclamation efforts. Also examines various epistemologies, theories, ideologies, and practices of Indigenous people (including American Indian, Indigenous Alaskan, Hawaiian, Maori, Quechua). Topics include: language policy and planning, language acquisition, child language socialization, identity development, bilingual education, Indigenous language pedagogy, and current models and approaches for Indigenous language maintenance and revitalization (ILMR).	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	509	Amer Indian& Indigenous Rights	Examines the rights of American Indian peoples with an emphasis on asserting indigenous rights in national as well as international forums. Challenges students to address issues related, but limited to: treaty rights, land rights, water rights, self-determination, rights to a distinct culture, religion, language, spiritual practices, customs, ceremonies, nationhood, autonomy, to seek redress and justice, rights to education, rights to protect from destruction and violence, rights to economic development, rights to protect lands from military, ecological, cultural, and environmental threats, and other rights that may effect the lives of American Indian people.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only AIS 509 or AIS 494 (American Indian and Indigenous Rights)

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AIS	510	Social Change in Amer Ind Comm	Committed to the preservation of political autonomy and cultural identity, American Indian communities are increasingly gaining rule over the effects of social change impinged upon them. Recapturing their histories and redefining colonial relationships, they are forging a preferred future grounded in their own traditional institutions of community, religions, and strengthening of self-determination. Provides students with: (1) an understanding of the enduring struggle of American Indian communities to resist the movement of collective assimilation and retain the right of self-determination; (2) an examination over time of social changes in American Indian communities' social structures and their political and social movements towards the establishment of environmental, economic, and social justice; and (3) knowledge of strategies and tactic for achieving social change within American Indian communities that support Indian self-determination and self-governance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	511	Gender and Sexualities	Grounds students in the theory and concepts of American Indian genders and sexualities. In American Indian societies, there were more than two genders. With colonization through laws, boarding schools, and loss of culture, language, and land, these different genders were attacked and made to disappear. Examine the concepts of gender and sexuality from Native perspectives and theory, and through western imperial views. Also covers the ways in which decolonization plays a role in understanding indigenous genders and sexualities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	512	Hist Trauma, Heal & Decoloniza	In recent years, scholars have begun to explore the prevalence of historical trauma among American Indian communities. This research argues that the genocide, violence, breakdown of customary cultures through external coercion; and oppression that Indians continue to face at the hands of foreign colonizers has left Indians with harmed with intergenerational self-destructive behavior, domestic violence, suicide, anxiety, depression, low self-esteem, and anger. As a result of this violence and oppression, they have developed models of recovering healthy nations while challenging violations of their human rights in the domestic and international arenas. This history has given rise to a widespread cultural revitalization movement often referred to as decolonization. Scholars from an array of academic disciplines are producing a growing body of literature about decolonization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	513	Urban Indian Issues	According to the 2010 Census, 64.1% of the American Indian/Alaskan Native population resides in a place outside of tribal areas. Cities such as Los Angeles, New York, and Phoenix have historically counted more than 25,000 American Indian residents. What draws Indigenous families to urban areas? How does an urban address impact the federal trust relationship with nonreservation Indians? What are the social, political, and economic implications for a family who lives off the reservation and away from tribal homeland? Course explores these issues and dynamics and challenges the student to examine the unique identity and contributions of urban Indians. Students learn the history of Indigenous migrations to the city and assess current needs and concerns through consultation work coordinated with Phoenix area Indian Centers and nonprofit organizations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	514	American Indian Intellectuals	Does it make sense to speak about American Indian "intellectuals," "thinkers," or "philosophers"? Not only have Indians been thinking and thinking deeply for generations, but they have produced a body of written works that have formed the foundation of contemporary American Indian studies. Course covers some of the major figures, their works, and the ideas and opinions (many of which were controversial) that shaped their thinking.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	515	Work & Legacy of Vine Deloria	Vine Deloria, Jr. Standing Rock Sioux (1933-2005) has often been referred to as "Uncle Vine" for his role in the intellectual development of innumerable scholars, as well as legal and political figures, all of whom have striven along side Deloria at making the world a better and more just place for indigenous communities. As such, Deloria has also been labeled "the Dean of American Indian Studies" because of his work at shaping the intellectual and political agenda, which began in 1969 with the seminal publication of Custer Died for Your Sins: An Indian Manifesto and continued posthumously with works on the medicine man traditions throughout North America and a reflection on Carl Gustav Jung's analyses of American Indian customs and beliefs. This seminar, the first of its kind, takes a comprehensive look at Deloria's philosophical and legalistic legacy by examining his major works and analyzing, in addition to critiquing, the ideas and opinions that shaped his intellectual career.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	516	Concepts of Power& Indigeneity	Grounds students in the theory and concepts of power and indigeneity with comparisons with global Indigenous peoples and experiences. Through that theoretical understanding, examines and understands ways in which these concepts impact Indigenous communities and formulates ways in which to develop practical ways to address these issues.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	517	Customary Tribal Law and Gover	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	518	Tribal Jurisdiction	Examines traditional governance systems, institutions, and cultures of American Indians, with emphasis on customary law, justice, and government.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	519	Burial Rights & Sacred Matters	Probes U.S. laws and policies, court cases, and Indian struggles for dignity, burial rights, repatriation, and religious freedom from the late 1800s to the present. Examines developments in the United Nations and international arena pertaining to Indigenous human rights, religious freedom, repatriation, and sacred places protection. U.S. policies, laws, practices, court decisions, land developers, pot hunters, and archaeologists have restricted the human rights of American Indians in term of burial rights and religious freedom. Congress has enacted cultural resource and environmental protection laws, religious freedom, and reburial laws that aim to regulate the use and abuse of cultural resources and Indian rights.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	521	AI Leadership and Resistance	Examines the modern leadership struggles in American Indian communities with a foundation of traditional concepts of leadership. Topics include leadership qualities and systems pre-contact, federal-tribal relations, state-tribal relations, tribal politics, internal disputes, activism, mobilization, cultural continuity, social change, community leadership, political/elected leadership, diplomacy, political agendas, and other topics related to American Indian leadership and resistance.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AIS 445 or AIS 494 (Principles of American Indian Leadership) or AIS 521
AIS	522	Tribal Governance	Explores American Indian leadership, political ideology, and the history and current state of tribal government. What makes tribal governments tick? Examines past and present challenges faced by leaders and members of indigenous communities. Brainstorms potential strategies for the further enhancement, protection, and assertion of this indigenous "brand" of governance. How do politics, policy development and the ever-changing face of indigenous sovereignty impact the way we think about governance? How can we educate and inspire tribal communities to have greater ownership and interest in government? Students engage with the current research, debate the issues, and learn from people who provide governance to indigenous communities. Case studies focus on specific issues in local communities. Individual portfolio project work facilitates learning and the articulation of leadership and governance as practiced by one particular tribe of your choice.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AIS	523	Com Dev with AI Communities	Tribal community development is more complicated than large urban population centers or even rural communities because tribal communities continue to struggle with years of colonial, paternalistic, and assimilationist federal policies that have impeded their efforts to become self-determined and self-governing nations. Provides students with the knowledge and skills they need to support community development in American Indian communities within a self-determined and self-governing context. Content includes: (1) a framework for review of current economic, political, social, and cultural issues facing American Indian communities; (2) an overview of community development theories, of the underlying values behind those ideas, and of the linkages between theory and practice in American Indian and other Indigenous communities; and (3) a sampling of intervention strategies and tactics for effective community development in American Indian communities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	524	Indian Control of Indian Educ	Examines American Indian control of education from a tribal college and university perspective. Focuses on the tribal college movement, including the historical and contemporary political, policy, research, and best practices that have influenced and sustained tribal colleges and universities.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	American Indian Studies Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
AIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	American Indian Studies Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	American Indian Studies Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	American Indian Studies Program	1-12		
ALA	100	Intro to Environmental Design	Surveys environmental design: includes historic examples and the theoretical, social, technical, and environmental forces that shape them.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H & G	Credit is allowed for only ALA 100 or PUP 100 OR Visiting University Student
ALA	102	Landscapes and Sustainability	Surveys ideas relating to landscapes and sustainability and the role of landscape architecture in the creation of humanized environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	
ALA	121	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student
ALA	122	Design Fundamentals II	Exercises in basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ALA 121 with C or better; Architecture, Environmental Design or Landscape Architecture major. Corequisite(s): ALA 124
ALA	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
ALA	225	Design Fundamentals III	Applies history and theory of design fundamentals with an emphasis on architectural and landscape architectural design issues.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Architectural Studies major; ALA 122 with C or better; passed Architectural Studies milestone; Corequisite(s): ALA 235 OR Visiting University Student

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ALA	226	Design Fundamentals IV	Basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): ALA 225 with C or better
ALA	235	Intro to Computer Modeling	Fundamentals of computer operation, geographic information systems, geometric modeling of 3-D forms and rendering of light, mathematical modeling of processes using spreadsheets.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Architectural Studies BSD major; Corequisite(s): ALA 225 OR Environmental Design BS major; Pre- or corequisite(s): EDS 223 OR Landscape Architecture BSLA major; Corequisite(s): LDE 261 OR Visiting University Student
ALA	240	Sustainable Dgn in Built Envir	Reviews the physical principles used in the design of sustainable buildings, landscapes, and urban environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
ALA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ALA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ALD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Aging and Lifespan Development	1-4		
ALT	405	Power Conditioning	Fundamentals of power electronics; DC-DC converters and DC-AC inverters; battery charge controllers. Lab experience.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only ALT 405 or 505
ALT	412	Village Energy Systems	The role of energy resources in economic development. The need for and use of energy at the Base of the Economic Pyramid (BoP). Individual Problem Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Senior Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum. Credit is allowed for only ALT 412 or ALT 494 (Village Energy Systems)
ALT	420	Electrochemical Energy Tech	Thermodynamic and electrochemical principles of fuel cells. Hands-on experience on fabrication and testing of fuel cells; problem solving skills.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: CHM 113; ALT 360
ALT	435	Applied Photovoltaics	Overview of solar radiation, operating principles of photovoltaics, qualitative analysis on influencing parameters. market trends, basics of PV systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; ALT 410 (not required for BAS students); Credit is allowed for only ALT 435 or 535
ALT	445	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific application.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: ALT 360; CHM 113; Credit is allowed for only ALT 445 or 545
ALT	502	Batteries Portable Electronics	Theoretical and practical overview of primary, secondary, and lithium batteries. Key performance characteristics, construction materials, typical applications, recycling, and disposal.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	505	Power Conditioning	Fundamentals of power electronics, DC-DC converters and DC-AC inverters, battery charge controllers.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Credit is allowed for only ALT 405 or 505
ALT	507	Evaluation Photovoltaic & FCS	Field testing, data collection, and evaluation of real-world photovoltaic and fuel cell systems available on campus and data analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	512	Village Energy Systems	Establishes leadership in the development of energy resources at the Base of the Economic Pyramid (BoP). Individual Problem-Based Learning (PBL) investigations of potential solutions to energy-poverty at the BoP.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate Standing in Engineering, Engineering Technology, Mathematics or another Science-based curriculum; Credit allowed for only ALT 512 or ALT 598 (Village Energy Systems)
ALT	515	Reliability and Standards	Alternative energy systems and their reliability issues, accelerated life and safety testing, standards and codes, regulatory requirements.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ALT	535	Applied Photovoltaics	Term projects, overview of solar radiation, operating principles, qualitative analysis on influencing parameters, market trends, basics of PV systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status; Credit is allowed for only ALT 435 or 535
ALT	545	Automotive and Stationary FCS	Practical overview of fuel cell systems for stationary, residential, and transportation applications based on load and duty cycle requirement of specific applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate status. Credit is allowed for only ALT 445 or 545
AME	101	ASU Digital Culture Experience	Orientation to the Digital Culture program with emphasis on resources for academic success.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): Digital Culture BA or Digital Culture (Media Processing)BS major OR Visiting University Student

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AME	111	Intro to Digital Culture	Examines the effects of digital technology on the way we live, communicate, learn, and create. Proposes that we are moving towards a hybrid (physical-digital) existence and culture. Traces that evolution, looks at current examples of hybrid cultural processes and outcomes, and discusses possible future trends. Discusses how these changes are influencing the work and career possibilities of people involved in all aspects of human culture. Comprises diverse readings, media products, class interaction, group discussion and hands-on collaborative projects exploring concepts covered in class. Also includes a number of guest lectures from ASU faculty.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 111 or 194 (Introduction to Digital Culture)
AME	112	Computational Thinking for DC	Introduces fundamental concepts relevant for understanding computation. What are algorithms and how can computer code express them? Basics of how real-world signals are captured, encoded, recorded, retrieved and decoded. Designed for students with little or no background in programming.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 112 or 194 (Computational Thinking for Digital Culture)
AME	120	Digital Culture Studio	Provides advice on career preparation and industry skills through a series of guest lectures. Sample topics include resumes, personal Websites and portfolios, how to pitch a project idea, and topics chosen by guest industry presenters.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Credit is allowed for only AME 120 or AME 194 (Digital Culture Studio)
AME	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only AME 130 or ENG 130 OR Visiting University Student
AME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	210	Media Editing	Introduces the fundamental principles of media editing including form, composition, structure, pattern, sequence and rhythm. Using a combination of open source, commercial and custom-designed tools and platforms, students design, construct, communicate and interpret rich media messages. Through creating and critiquing visual compositions, audiovisual artifacts, spatial narratives or generated graphs, students explore the practice of media editing as a spatial, temporal and dynamic process.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 210 or AME 294 (Media Editing) or DSC 294 (Media Editing)
AME	220	Programming for the Web	Introduces contemporary Web technologies and the front-end technologies needed to code particularly in contemporary interactive Web applications. Deepens knowledge in the emergence and evolution of Web technologies and standards.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230 or CSE 110 OR Visiting University Student
AME	230	Programming for Media Arts	Introductory-level course in practical aspects of programming systems for media arts. Explores techniques in programming in the context of images, sounds, interaction, networking and data visualization. Uses the processing programming language, an accessible yet powerful environment for learning how to program. Students create images, animations and interactive programs, and learn how to use images, movies, sound files, microphones and cameras in their programs.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3	CS	Credit is allowed for only AME 230 or AME 294 (Programming for Media Arts)
AME	240	Intro to Physical Computing	Students learn the basic skills required to build physical-computing systems through a series of practical tutorials and design challenges. These skills include basic fabrication with hand and CNC tools, electronic design fundamentals, circuit construction techniques, introductory microcontroller programming and the use of simple sensors and actuators. The primary difference between this introductory-level course and the advanced course is that students in this course are not expected to invent original projects. Projects with clear engineering and design challenges are assigned. Within the scope of these projects there are significant opportunities for creativity but the emphasis is on learning basic skills.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 240 or AME 294 (Introduction to Physical Computing)

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AME	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
AME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	310	Media Literacies Composition	When we integrate computational systems into the core of our cultural and social practices, we reinvent how we tell stories. The roles of creators, critics and audiences are blurring at the same time that digital tools allow us to infinitely reproduce and remix narratives, radically changing what we mean by the "work" or "text." These new media platforms empower us to create, share and respond to cultural narratives that defy traditional notions of how stories operate, demanding new literacies. Explores our powers and responsibilities as readers, writers and creators of new cultural languages, including new forms such as games, digital video, electronic literature and social media. Students study relevant media narratives and cultural ecosystems from the 20th and 21st centuries, acquiring a set of literacies that they hone through practices of authorship, critique and collaboration, culminating in the presentation of their own digital media narratives.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AME 310 or AME 394 (Media Literacies & Composition)
AME	320	Motion Cap Integrative Sys	Presents the broad principles and techniques for movement study in oneself and others that includes applied, dynamic anatomy. Also presents the functional techniques for motion capture with a special emphasis on the capture of human movement from visual sensors. Students understand the technology behind motion capture; a high-level understanding of movement and anatomical systems; the ability to perform motion capture and customize it to suit the requirements of specific creative applications in animation, sound and live performance as well as applications in movement rehabilitation and education. Looks at the technology behind various modern motion capture systems based on markers, inertial sensors, accelerometers, and depth sensors, so the student appreciates the technical capabilities and limitations of each technique.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 320 or AME 394 (Motion Capture for Integrative Systems)
AME	325	Technical Lives	Traces the myriad intersections of "life" and "technology" in the history of Western thought and practice--from Ancient Greece to contemporary technoscience. Students investigate these convergences in philosophical works (by Plato, Descartes, Heidegger, Foucault, Gilbert Simondon, and others), in art and design practices (film, architecture, bioart, literature), and in modern technoscientific fields such as biotechnology, artificial life and synthetic biology. Gives students a broad framework for examining the many interwoven histories, philosophies and practices that draw "life" and "technology" together to generate profound ontological, political and economic consequences in the history of the Western world.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only AME 325 or AME 394 (Technical Lives) OR Visiting University Student
AME	330	Digital-Physical Systems	Hands-on course where students explore digital-physical systems by working with the fundamental building blocks of interactive technologies and examining exemplar works of media art. Basics of electronics, circuit design, sensors, actuators, simple mechanical design, the iterative design process and microcontroller programming. Emphasizes media and arts applications such as real-time interactive performance, robotic installations and tangible computer interfaces.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 240; minimum 45 hours; Credit is allowed for only AME 330 or AME 394 (How to Build a Digital-Physical System) OR Visiting University Student

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AME	333	Improvising Cyborgs	This experiential and practice-based course provides a multidisciplinary platform for students to work collaboratively to accomplish set creative challenges. Open to anyone with experience working with technology who wants to explore improvisation and performance, not only as art forms, but also to inform their making process, and translate these skills to other areas. Encourages sound/music, dance and visual practitioners to work together.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AME 333 or AME 394 (Improvising Cyborgs) OR Visiting University Student
AME	340	Comp & Computational Principle	In much of today's contemporary art practice there is a tight coupling of compositional form, content and underlying computational mechanisms. This integration holds the potential to yield new modes of expression and wholly new art experiences as is evident in emerging forms of real-time generative art, network-based art, game-based art, and interactive performance. As both practitioners and participants, we must develop a critical understanding of the relevant compositional and computational principles that frame this work. Students study relevant media art works from the 20th and 21st century, develop a working understanding of fundamental compositional and computational principles, and apply their understanding through the realization of exploratory media artworks that are presented at the end of the semester.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): minimum 45 hours
AME	360	Designing Mixed-Reality Exper	Augmented reality and virtual reality games, advertisements, installations and other media integrate virtual objects with real-world environments in an emerging computing paradigm called mixed reality. Students learn skills to creatively develop interactive mixed-reality objects and environments. Covers principles behind object-to-object access patterns, virtual physics and interactions, camera-projection coordinate systems, and programming for augmented reality/mixed reality. Although the mixed reality and object-oriented principles transcend programming language and environment, students use C# programming in the Unity Game Engine.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230 or CSE 110; Credit is allowed for only AME 360 or AME 394 (Designing & Implementing Mixed-Reality Experiences) OR Visiting University Student
AME	385	Collab Projects & Research I	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): BA in the Arts (Digital Culture) or BA Design Studies (Digital Culture) or Digital Culture major; Minimum 45 earned hours; Credit is allowed for only AME 385 or 394 (Collaborative Projects & Research I)
AME	386	Collab Projects & Research II	Project-based class for experience in collaborative design principles, project pitching and research. Includes readings and small projects with teams formed at the outset of the class. Over the course, teams develop their own project along with a schedule for realization. Project themes vary, yet all projects must explore relationships of digital technologies and cultural products or processes. Includes presentations, discussion and analysis of team projects.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 385; Credit is allowed for only AME 386 or 394 (Collaborative Projects & Research II)
AME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		
AME	410	Interactive Materials	Focuses on embedding computation into the physical world and envisioning the future of tangible interactive media. Students make, tinker and experiment with high-tech and low-tech materials ranging from electronics (microcontrollers, sensors and actuators) to softer components including textiles, paper, paints, food and organic/living systems. Grounds hands-on, materially oriented work in theoretical concepts from HCI (Human Computer Interaction), speculative design and design fiction. Students build interactive prototypes as artifacts that exist in fictional worlds to explore emerging dialogues around desirable and undesirable futures.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 330
AME	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)

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AME	430	Mac Development for Media Arts	Explores native application development for OS X (Macintosh) for use in the domain of media arts. Project-based course covers the native Xcode development environment and the C and Objective-C programming languages. Native applications are able to achieve the highest levels of performance; they leverage the unique technologies built for a platform and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. To understand native apps for OS X, the course examines a number of code frameworks provided for developers by Apple (the core of which are often called Cocoa), including Foundation, AppKit, AV Foundation, Core Animation and SpriteKit.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 230; Credit is allowed for only AME 430 or AME 494 (Mac Development for Media Arts) OR Visiting University Student
AME	435	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 430 or AME 494 (Mac Development for Media Arts); Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)
AME	444	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 244 or AME 294 (Introduction to Interactive Environments); Credit is allowed for only AME 444 or AME 494 (Media Installations) or AME 544 or AME 598 (Media Installations)
AME	470	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 220; minimum 45 hours; Credit is allowed for only AME 470 or AME 570
AME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		
AME	485	Digital Culture Capstone I	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Digital Culture student; minimum 70 hours; Credit is allowed for only AME 485 or AME 494 (Digital Culture Capstone I)
AME	486	Digital Culture Capstone II	Senior capstone projects in digital culture are interdisciplinary team projects that offer experience in diverse collaborations for solving complex problems, a proficiency widely demanded by employers. Students integrate, extend and apply information, principles, theories and/or methods learned in previous courses while supervised by the instructor.	N	STO	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Pre-requisites: AME 485; Credit is allowed for only AME 486 or 494 (Digital Culture Capstone II)
AME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6		Prerequisite(s): Barrett Honors student
AME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
AME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		

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AME	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
AME	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-3		
AME	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
AME	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit allowed for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analyis)
AME	516	Physics-Based Computer Vision	Covers topics in physics-based computer vision and graphics. Includes work on visual computing systems including computational cameras, illumination systems, 3D scanners, rendering/animation and displays. Starting with the basics of traditional photography and the imaging pipeline, proceeds to explore new ways to capture visual information by co-designing camera hardware and software algorithms. Topics covered include plenoptic or multi-modal imaging, coded and compressive sensing, light transport and rendering, programmable illumination, and computational displays. Focuses on understanding and evaluating new imaging technology for specific applications including autonomous vehicles, entertainment and graphics, computer vision and visual recognition, and robotics. Course content delivered via lectures along with written and programming assignments as well as a final project.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): Herberger Arts, Media and Engineering grad student or Fulton Engineering grad student; Credit is allowed for only AME 516 or AME 598 (Comp Cam, Ltg & Disp) or EEE 516 or EEE 598 (Comp Cam, Ltg & Disp) or EEE 598 (Phys-based Comp Vision)
AME	520	Understanding Activity	Focuses on computational and humanistic underpinnings for describing human activities for interactive systems. Obtains a holistic understanding of both the computational models, as well as somatic approaches, and enables their translation into meaningful interactive systems for a variety of applications. Project-driven course encourages students to work individually and collaboratively to generate movement to interface with appropriate sensing, analysis and feedback systems with applications in health and well being, creative practices and games. Transdisciplinary course; therefore, expectations for skills and outcomes are multiple and varied, with students expected to work with students and ideas from other disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 520 or AME 598 (Understanding Activity)
AME	530	Experiential Media Studies I	Focuses on media arts and sciences in the 20th and 21st centuries, discussing issues surrounding the evolution of media art research and creation practices, methods of criticism and analysis, transdisciplinary work and research, collaboration and current trends. Emphasizes the methodology, theory and history behind the experimental study of experience via experiential systems. Directed toward those interested in researching, designing, building or critiquing experiential media systems that are culturally or technoscientifically provocative and socially meaningful.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AME	531	Experiential Media Studies II	Engages students in the theory and practice of designing and evaluating experiential media systems. Introduces advanced topics building on ideas and concepts explored in the companion introductory course. Based on furnished examples as well as their own experience, students create and critique a variety of integrated media systems demonstrating technical competence, aesthetic knowledge, analytic rigor and theoretical relevance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): AME 530
AME	532	Media Synthesis	Focuses on creation of media of all kinds using computation. Using algorithms it is possible to create complex media that is difficult or impossible by traditional methods. Some techniques can capture the unpredictable evolutionary and emergent behavior found in nature. Investigates influential algorithmic methods including stochastic processes and Markov chains, Perlin noise, cellular automata, fractals, L-systems and genetic algorithms.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	535	Mobile Development	Explores native application development for iOS for use in the domain of media arts. Project-based course covers the native Xcode development environment, and the Swift programming language. Native applications are able to achieve the highest levels of performance, they leverage the unique technologies built for a platform, and they are able to participate in the native user experience (look and feel) that all users of a popular platform expect. Examines a variety of frameworks such as UIKit, CoreMotion, CoreLocation, MapKit, AVFoundation AVKit, and SpriteKit to understand native apps for iOS.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 435 or AME 535 or AME 494 (Mobile Development) or AME 598 (Mobile Development)
AME	544	Media Installations	Investigates historical and contemporary instances of the media installation, not only as a form of art but as a cultural artifact that appears in a variety of contexts. Students design and build media installations by learning to gather, manipulate and present many different kinds of media using a variety of high- and low-tech tools and techniques. Advanced skills with the tools and techniques for creating and manipulating digital images, sounds, graphics and video. Students learn how to make installations interactive by integrating sensors, input devices and computer vision systems. Design, build and refine media installations, and learn to document these installations at a high level using the latest video editing tools.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 444 or AME 544 or AME 598 (Media Installations)
AME	570	Programming for Soc & Int Med	Web sites, desktop applications connected to the "cloud" and mobile applications depend on services supplied by server-based software that is the invisible center of users' networked experiences. Applications and data servered over the Web are at the core of popular software from social applications such as Facebook, Twitter or Instagram to networked media like iTunes, Netflix or Hulu. Investigates the development of Web applications and services. Creates modern dynamic Web applications using open source technologies.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 470 or AME 570 or AME 494 (Programming for Social and Interactive Media) or AME 598 (Programming for Social and Interactive Media)
AME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	590	Reading And Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	YGB	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1		Prerequisite(s): degree- or nondegree-seeking graduate student
AME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	Arts, Media and Engineering Sch T	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	100	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	MA	Prerequisite(s): MAT 117 or higher with C or better or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
AML	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	253	Intro to Math Tools & Modeling	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 100 or SOS 101 with C or better; MAT 117 with C or better or ALEKS score of 61 or higher OR Visiting University Student
AML	254	Continuous Models for LSS	Includes three fundamental topics in dynamics of populations, each topic motivated by a biological example. Covers mathematical tools, both analytic and computational, to solve the problem. Students have a small group project on each topic	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 253; MAT 210, 251, 265, or 270; MAT 266 or 271 OR Visiting University Student. Credit is allowed for only AML 254 or AML 294 (Continuous Models for the Life and Social Sciences)OR Visiting University Student
AML	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		

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AML	406	Dir Rdg & Rsrch Life & Soc Sci	Collaborative, practice-oriented course where students produce individual or team-initiated research project reports on pertinent topics in the life and social sciences. Students select topics, design, identify and formulate effective research ideas, and then translate them into clear and effective research plans.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): AML 100; MAT 342 (or MAT 343); 86 minimum hours OR Visiting University Student
AML	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: AML 253, or SOS 210 (or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)
AML	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
AML	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
AML	520	Agent-Based Modeling	Introduces agent-based modeling to simulate social and social-ecological systems. Topics include design, analysis, and empirical grounding of agent-based models to a variety of application domains including collective action, diffusion processes, resource use, health, and complex societies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only AML, ESS or SOS 540
AML	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)
AML	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560
AML	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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AML	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	610	Topic Appl Math Life & Soc Sci	Introductory course in applied mathematics for the life and social sciences, combined with the first semester of a two-semester course in mathematical biology. Provides a solid introduction to the modeling of biological and social processes as well as to some of the mathematical approaches involved in their analysis and simulation.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	612	Appl Math Life&Soc Sci Mod Sem	Presents and applies mathematical modeling principles and techniques for representing the structure and operation of complex life and social systems and processes. Helps students identify potential problems in the life and social sciences and the corresponding mathematical and statistical methods that can be used for their study.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AML	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
AMS	201	Intro to American Studies	Provides an intellectual foundation for the interdisciplinary study of American culture, history, and society. Introduces students to ideas, methods, tools, and theories in the vibrant field of American studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
AMS	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
AMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	326	Popular Culture	Topics in American popular culture, including theories of popular culture; the history and analysis of mass media, including television, film, and the music industry; and vernacular art and the folk tradition.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	330	American Lives	Examines American society through the study of autobiography and ethnography.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): minimum 30 hours
AMS	332	Studies in Race and Ethnicity	Topics relating to issues of race and ethnicity in American life.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	334	Class in America	Explores social class and inequality in the U.S. including history, culture, work, politics, globalization, and intersections of gender, race, ethnicity, and place.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	336	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334 OR Visiting University Student
AMS	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353

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AMS	354	Afr/Amer Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
AMS	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
AMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	412	Studies in Amer Politics & Law	Topics in American political and legal systems, including social movements in the United States and women and the law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	H	Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	417	Religious Trad/Amer Southwest	Examines the sacred traditions that have evolved within the North American Southwest context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
AMS	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
AMS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student
AMS	429	Interdisciplinary Topics	Senior-level seminar that examines issues relevant to two or more American cultures' fields. Topics may include Southwest/border Hispanic folklore, Southwestern corridors, American art and the city, and the West of the imagination. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
AMS	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
AMS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 394 or AMS 429 (Latino/a School & Social Inequity)
AMS	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
AMS	490	Writing Certificate Portfolio	Preparing a portfolio demonstrating advanced writing skills. Limited to and required of students in the Writing Certificate Program.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		

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AMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
AMS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student
AMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
AMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): AMS 201 with C or better, ENG 101, 105, or 107 with C or better
AMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
AMS	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AMS	502	Amer Studies: Theory & Method	Explores some of the major themes in American studies scholarship by considering American cultural formation and change over the last two centuries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): MA American Studies major
AMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
AMS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
AMS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	101	Intro to Aeronautic Mgmt Tech	Facilitates entry into aeronautical management technology programs. Emphasizes General Catalog; major and concentration requirements, registration, careers, and Polytechnic campus resources. Introduces various learning styles and strategies that assist students in becoming successful learners. Emphasizes time management techniques and academic integrity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		
AMT	105	Flight Operations & Safety I	Supervised private pilot operations, flight instruction, flight safety briefings and recurrent aviation subjects appropriate for private pilots. Flight instruction is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons and FAA Practical Exam(s) within the appropriate flight training syllabus and satisfactorily completing all academic requirements. Flight instruction costs are not included in university tuition and fees. Students following the single engine flight training track earn their Single Engine Private Pilot certificate. Students following the multiengine flight training track earn their Single Engine Private Pilot Certificate and their Multiengine Private Pilot certificate.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; approved Secondary Flight application; Pre- or corequisite(s): AMT 182 with C or better if completed; AMT 220 with C or better if completed
AMT	110	Flight Operations & Safety II	Concludes supervised private pilot operations and flight training and introduces students to supervised commercial pilot operations, flight training, flight safety briefings, and recurrent aviation subjects appropriate for private and commercial pilots. Flight instruction costs are not included in university tuition and fees.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 105 with C or better
AMT	150	Flight Operation & Safety III	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 with C or better; Credit is allowed for only AMT 150 or AMT 151

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
AMT	151	Flight Op and Safety III.a	Introduces the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 110 with C or better; Credit is allowed for only AMT 150 or AMT 151
AMT	170	Intro to Unmanned Aircraft Sys	Introduces the history of unmanned aircraft systems and current and future developments in civil and military operations. Specific blocks deal with elements that form an unmanned aircraft system: unmanned vehicles, communication, navigation, launch and recovery, control stations, payloads, and support equipment. Explores other current issues in unmanned aircraft operations: aviation regulatory system and integration, safety and human factors, ethical and legal issues, and the future unmanned aircraft systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	182	Private Pilot Ground School	Ground school preparation for Private Pilot Certificate. Aerodynamics, navigation, performance, and regulations.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	201	Air Traffic Control	Ground and air operations; weather services communications and routing; flight plans, IFR operations, departures and arrivals; and airport conditions and emergencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Air Traffic Management or Air Transportation Management or Professional Flight or Unmanned Aerial Systems) BS or Applied Science (Aviation) BAS major
AMT	205	Flight Operations & Safety IV	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 150 with C or better; Credit is allowed for only AMT 205 or AMT 206
AMT	206	Flight Ops and Safety IV.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 151 with C or better; Credit is allowed for only AMT 205 or AMT 206
AMT	210	Flight Operations and Safety V	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 205 with C or better; Credit is allowed for only AMT 210 or AMT 211

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AMT	211	Flight Ops and Safety V.a	Continues the tasks of commercial and instrument pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 200 with C or better; Credit is allowed for only AMT 210 or AMT 211
AMT	214	Commercial Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 1 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Air Traffic Management BS or Aeronautical Management Technology (Air Traffic Management) BS major; AMT 182 with C or better; AMT 220 with C or better OR Pre- or corequisite(s): AMT 205
AMT	220	Aviation Meteorology	Evaluation, analysis, and interpretation of atmospheric phenomena. Low- and high-altitude weather from the pilot's viewpoint.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		
AMT	222	Instrument Pilot Ground School	Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 2 of 2). 10 hours ground trainer included.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 110 with C or better OR other Aeronautical Management Technology major; AMT 182 with C or better; AMT 220 with C or better
AMT	250	Flight Operations & Safety VI	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 210 with C or better; Credit is allowed for only AMT 250 or AMT 251
AMT	251	Flight Ops and Safety VI.a	Introduces the tasks of commercial multiengine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 211 with C or better; Credit is allowed for only AMT 250 or AMT 251
AMT	270	Unmanned Aircraft	Introduces elements comprising the unmanned aircraft system (UAS). Includes review of UAS, Unmanned Aerial Vehicle (UAV); system development and certification, selection and design, aerodynamics and airframe configurations, characteristics of vehicle types, design standards and regulatory aspects, airframe design, payload types, and control and stability. Students apply concepts acquired in classroom sessions and construct various unmanned aircraft, train to operate using existing simulators, and conduct flight-testing. The final course project is the design, development and construction of a group 1 unmanned aircraft, serving as the core unmanned vehicle used in subsequent UAS courses. Incorporates UAS data collection and analysis throughout the course. Course concepts enable UAS student pilots to become knowledgeable of aerodynamic aspects of UAV to ensure safety of flight and improved maneuverability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 170 with C or better if completed

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AMT	280	Aero Structures/Matl & Systems	Basic aerodynamics, incompressible/compressible airflow, wind tunnel testing, wing theory; analysis of aircraft structures; properties and applications of materials, and aircraft systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111 with C or better if completed; PHY 113 with C or better if completed OR PHY 121 with C or better if completed; PHY 122 with C or better if completed
AMT	285	Flight Instr Ground School	Ground school in preparation for the FAA Flight Instructor Certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 210 with C or better if completed
AMT	286	Multiengine Pilot Ground Schl	Ground school preparation for the FAA Multiengine Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; Pre- or corequisite(s): AMT 205 with C or better if completed
AMT	287	Aircraft Powerplants	Theory and performance analysis of gas turbine and reciprocating aircraft engines. Engine accessories, systems, and environmental control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Aeronautical Management Technology BS major; Pre- or corequisite(s): PHY 111 with C or better if completed; PHY 113 with C or better if completed OR PHY 121 with C or better if completed; PHY 122 with C or better if completed
AMT	292	Flight Instr Instrument Gr Sch	Ground school preparation for the FAA Instrument Flight Instructor Rating.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 210 with C or better; AMT 285 with C or better
AMT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	305	Flight Operations & Safety VII	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 250 with C or better; Credit is allowed for only AMT 305 or AMT 306
AMT	306	Flight Ops and Safety VII.a	Concludes the tasks of commercial single and multi-engine pilot flight operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 251 with C or better; Credit is allowed for only AMT 305 or AMT 306
AMT	308	Air Transportation	Studies the historical and international development of air transportation and its social, political, and economic impact upon global interrelationships.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3	G	Pre-requisite: Minimum 50 hours
AMT	310	Flight Operations Safety VIII	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 305 with C or better; Credit is allowed for only AMT 310 or AMT 311

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AMT	311	Flight Ops and Safety VIII.a	Flight instructor operations for single and multiengine instrument operations. Flight instruction, lecture, quizzes and discussion of the current flight syllabus topics, AMT Student Information Handbook & ATP Student Handbook as well as safety and other informational briefings are primary activities. Students must maintain enrollment in the appropriate Flight Operations and Safety course while engaging in flight training activities. The flight training is considered to be the laboratory for this academic class. Course completion requirements are based on completion of lessons within the appropriate FAA-approved Part 141 training syllabus and satisfactorily completing all academic requirements.	N	LEL	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): AMT 306 with C or better; Credit is allowed for only AMT 310 or AMT 311
AMT	350	Aircraft Design/Logistics Mgmt	Fundamental aircraft design principles, including performance factors associated with mission profiles and the identification of basic logistical support requirements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	4		Prerequisite(s): Applied Sci (Aviation) BAS or Aeronautical Mgmt Tech BS major; Pre- or corequisite(s): PHY 111 w/ C or better if completed; PHY 113 w/ C or better if completed OR PHY 121 w/ C or better if completed; PHY 122 w/ C or better if completed
AMT	360	Aircraft Dispatch Ground	Aeronautical knowledge areas required for Aircraft Dispatch certification, as well as preparation for the Aircraft Dispatch knowledge examination. Regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology, and flight operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 214 with C or better; AMT 220 with C or better; AMT 222 with C or better
AMT	370	Unmanned Aircraft Systems	Students build upon gained knowledge, skills and experience by exploring unmanned aircraft avionics, autopilot systems, first person video (FPV), on-screen displays (OSD), communication systems, command and control (C2), ground control stations (GCS), flight software, and UAV launch and recovery systems. Students continue flight training and gain proficiency in unmanned aircraft operation using simulators and hands-on flight-testing. Students demonstrate their abilities to upgrade and modify their previously constructed unmanned aircraft in order to operate and conduct actual flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 270 with C or better
AMT	382	Air Navigation	Theory and application of modern advanced navigation and flight instrument systems. Introduces crew resource management in multiplace cockpits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 210 with C or better
AMT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
AMT	396	Aviation Professional	Career focus for management and flight students, including internships, writing, interviews, and employment search in aviation industry.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Applied Science (Aviation) BAS or Aeronautical Management Technology BS major; minimum 50 hours
AMT	408	National Aviation Policy	Examines aviation and airspace policies and policy process, including agencies involved in formulation, implementation, and evaluation of aviation policy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	410	Aviation Safety & Human Factor	Aviation accident prevention, human factors, life support, fire prevention, accident investigation, and crash survivability. Development and analysis of aviation safety programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	442	Aviation Law and Regulations	Aviation within context of U.S. Common Law system. Public law, administrative rule making, sovereignty, enforcement, and case law analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	444	Airport Management & Planning	Orientation to administration and management of modern public airports, including overview of planning, funding, and development of airport facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	456	Organized Labor in Aviation	Explores topics of labor relations, unions, federations, collective bargaining, grievances and labor legislation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours

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AMT	460	Aircraft Dispatch Capstone	Capstone for aircraft dispatch whereby students are engaged in practical applications of regulations, aerodynamics, emergencies, flight physiology, weight and balance, navigation, aircraft performance, meteorology and flight operations. Uses various scenarios in which students can employ the strategies and procedures necessary for safe flight.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 360 with C or better
AMT	470	UAS Payload, Sensors, Control	Builds on previously gained knowledge and experience. Student pilots utilize long-range communication and data links, UAS sensors, geospatial data collection, and still-imaging mosaicking. Students continue flight training using existing simulators and flight-tests during the course. Students apply concepts acquired during classroom sessions and construct a ground control station, modify and upgrade existing unmanned aircraft with payloads/sensors, train to operate sensors using existing simulators, and conduct flight-testing. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 370 with C or better
AMT	482	Airline Instrument Procedures	Advanced instrument flight using airline instrument procedures and airline crew and cockpit resource management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 382 with C or better
AMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
AMT	486	Regional Jet Aircraft Systems	Regional jet airline aircraft systems and flight procedures. Includes theoretical education for regional jet commercial passenger aircraft.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) major; AMT 382 with C or better
AMT	488	Regional Jet Aircraft Sys II	Regional jet systems, with emphasis on air navigation systems, including Flight Management System (FMS), Selective Calling (SELCAL), and flight profiles.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite(s): Aeronautical Management Technology (Professional Flight) student; AMT 382 with C or better
AMT	489	Airline Administration	Administrative organizations, economics of airline administration, operational structure, and relationship with federal government agencies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology BS or Applied Science (Aviation) BAS major; minimum 50 hours
AMT	490	Regional Jet Operatns Capstone	Regional jet aircraft operations and flight procedures. Includes theoretical education for RJ aircraft, FTD and full-motion simulator time.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Aeronautical Management Technology (Professional Flight) BS major; AMT 305 with C or better; AMT 486 with C or better
AMT	491	Aviation Management Capstone	Integrated group project with industry partner to address current problems in either air carrier or airport management focus area.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): AMT 489 with C or better if completed
AMT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6		Prerequisite(s): Barrett Honors student
AMT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Prerequisite(s): minimum 45 hours
AMT	495	UAS Operations	Capstone course applies student pilots' knowledge and skills gained in previous UAS courses to safely deploy a UAS in response to real-world situation or research. Students collaborate with other university departments, state or federal agencies, and other organizations and conduct actual or simulated missions in geospatial data collection, search and rescue, and near-space operations. Course blocks include flight planning and preparation, aircraft preflight and maintenance, launch and recovery operations, payload operations, normal and emergency procedures, and mission planning and execution. Students continue flight training using existing simulators and flight-tests. Students use real-world situations which require deployment of equipment and systems developed during previous course. Places specific emphasis on aircraft and payload selection based upon proposed mission analysis. Incorporates UAS data collection and analysis throughout the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 470 with C or better

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AMT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-3		
AMT	522	Aviation Law	Examines the U.S. legal system with a focus on the aviation perspective, administrative agencies, FAA enforcement, and case law.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	523	Intermodal Transportation Mgmt	Systems theory applied to intermodal transportation networks. Surveys air and ground transportation infrastructure, institutional frameworks, and intermediaries promoting connections between modes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Senior in Fulton Schools of Engineering with a University Cum GPA 3.0 or greater
AMT	525	Airport Planning and Design	Completion of various phases of airport master planning process. Provides guidance for logical and timely development of airports. Project work groups assigned.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	526	Aviation Labor Relations	Investigates labor-management relations in the aviation industry, including laws, unionism, collective bargaining, public sector relationships, grievance procedures, and conflict.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	527	Airline Management Strategies	Since deregulation, airlines have undergone profound changes through mergers, consolidation, and acquisition. In-depth look at airline management strategies for the 21st century.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	533	Aviation Systems & Psychology	Provides an overview of various aviation learning/training situations and how to develop and evaluate instruction appropriate for the situation and the learner. Focuses on determining the most effective instructional strategy for the situation and how to ensure learner preparedness and mastery of the concepts and skills. Considers topics: information processing, memory, instructional design methodologies, learning strategies, expert/novice differences, individual learner differences including generational differences, evaluation of instruction, transfer of knowledge and skills to unique settings. Discussions focus on research findings in these areas and practical application and implementation to improve learning and performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	534	Airline Pricing	Focuses on the fundamentals of airline economics and the volatility of industry performance at the operating level. Topics include the structure of the airline industry and the various historical and current operational strategies; demand, traffic, price and yield; operating revenues and operating costs. The airline industry is affected by various economic, environmental, political and regulatory conditions. Reviews the implications of these conditions on airline pricing, capacity, fleet selection and scheduling. Analyzes current and predicted future conditions to develop potential strategies for successful revenue management within the industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre-requisite: degree- or nondegree-seeking graduate student. Credit is allowed for only AMT 534 or AMT 598 (Airline Pricing and Yield Management)
AMT	541	Aviation Physiology	Surveys human physiology and human performance principles related to modern aircraft and aircraft systems operating in multiple environments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	546	Crew Res Mgmt/Line-Orient Fit	Evaluates in-depth, multicrew coordination issues for commercial aviation pilots. Stresses importance of critical thinking, decision making, integrated resource utilization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	565	Safety	Evaluates human error in aerospace systems. Discusses different theories of error and taxonomies as well as safety management systems to help identify hazards and risks and then help mitigate and/or eliminate them. Extensively uses case studies to highlight human failures as well as demonstrate organizational changes that resulted in safe and successful operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	570	Unmanned Aerial Systems	Examines the system design, operations and employment of unmanned aerial systems (UAS), beginning with an overview of the system and human factors and specific issues involved with UAS design and operations. Communication, remote operations, operator display interface, and situational awareness and teamwork required for successful employment. Evaluates accident data to understand technology and human error concerns.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student

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AMT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AMT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
AMT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) OR Fulton Polytechnic School student
ANB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ANB	601	Strategies in Animal Behavior	Using hands-on experiences, teaches key concepts underlying the control and function of animal behaviors and contemporary methods for measuring, analyzing, and reporting animal behaviors. Combines introductory classroom lectures on concepts and methods with direct application in observations and experiments on animal behavior in the field and the lab. Topics include communication, mating behavior and systems, parental care, kin selection, cooperation and competition, migration and dispersal, foraging, and anti-predator strategies.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Pre-requisites: Animal Behavior PhD student
ANB	602	Current Issues In Behavior	Student-led seminar course centers on discussions of contemporary literature in the field of animal behavior. Takes a student-driven approach, with course participants selecting a target theme for the semester, selecting individual papers to discuss each week, and leading discussions about relevant merits and shortcomings of each article. Additional topics may include: conceptual frameworks and results from the dissertation projects of participating students, career options and strategies in the behavioral sciences, responsible research conduct in the field, and tactics in manuscript publication and grantsmanship.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisites: Animal Behavior PhD student
ANB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ANB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ANP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ANP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APA	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisite: Freshman status
APA	200	Intro/Asian Pacif Amer Studies	Examines historical and contemporary issues facing Asian Americans and Pacific Islanders in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	
APA	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
APA	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
APA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
APA	310	Asian Pacific Amer Arts&Cultur	In-depth exploration of Asian Pacific American cultural expression in art, literature, film, theatre, dance, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	315	Asian Pacific Amer Literature	In-depth exploration of the literary history, critical reception, and major theories in Asian Pacific American poetry, fiction, and prose.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours

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APA	330	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
APA	340	Asian Pacific Americans/Media	Advanced study of the social construction of Asian Pacific American media images and resistance to those images in various historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours
APA	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
APA	347	Immigration Education & Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
APA	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
APA	352	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
APA	355	Asian American Psychology	Reviews the current research and literature about the psychological experiences of Asian Americans, with the appreciation for the historical, sociopolitical and cultural contexts that invariably shape the behavior and well-being of individuals in this diverse population group. Using psychological theory and research as a guiding framework, explores family relationships, identity development, sexuality, model minority stereotypes, racism and discrimination, media images, dating/marriage, race relations, mental health, and other issues affecting Asian American lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 355 or APA 360 (Asian Pacific American Psychology)
APA	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
APA	360	Asian Pacific Amer Experience	Advanced study of the historical and contemporary experiences of Asian Pacific American racial/ethnic groups in the United States.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	370	Indig Race & Eth Rel in Hawaii	Examines Native Hawaiian history, culture and worldviews prior to contact with Europe and the United States. Using colonialism, race and racism as the analytical lens, provides a deeper understanding to how racial ideologies and colonialism impacted the cultural, economic, political, environmental and social well-being of the island's indigenous population; the predominately nonwhite immigrant groups that were recruited to work in Hawaii's agricultural industries; the various institutions (e.g., tourism and the military) that continue to maintain structures of inequality and oppression of Kanaka Maoli (Native Hawaiians) and other racial and ethnic groups on the islands; and the ways Native Hawaiians and locals in Hawaii have resisted these efforts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only APA 370 or APA 394 (Race and Ethnic Relations in Hawaii) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
APA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): APA 200 or APA 210 or minimum 24 hours OR Visiting University Student
APA	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
APA	450	Asian Pacific Amer Contemp Iss	Advanced study of the issues shaping Asian Pacific American communities, including immigration, politics, education, health, family, gender, youth, interracial relations, and other contemporary topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): APA 200 or APA 210 or minimum 36 hours OR Visiting University Student
APA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
APA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
APA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
APA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: APA 200 or APA 210 or minimum 45 hours
APA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
APA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
APH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	212	Culture of Place	Explores contemporary conditions in the built environment as they are shaped by cultural phenomena.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
APH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	300	World Architect I/West Culture	Historical and contemporary built environments of Western civilizations: Mediterranean, Europe, and the Americas as manifestations of cultural history and responses to environmental determinants.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2-3	HU & H & G	Prerequisite(s): May not be Pre-Architectural Studies or Architectural Studies BSD student OR Visiting University Student
APH	313	History of Architecture I	Intensive study of history of architecture from earliest traces to 1300. Examines cultures from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): Architectural Studies BSD major; ALA 100, ALA 102; ENG 101, 105 or 107 with C or better; passed degree milestone review OR non-Arch Studies majors; ENG 101, 105 or 107 with C or better; min junior standing OR Visiting University Student
APH	314	History of Architecture II	Intensive introduction to history of architecture from roughly 1300 to present day. Examines cultures from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & G & H	Prerequisite(s): APH 313 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
APH	336	20th-Century Architecture I	Architecture in Europe and America from the foundations of the modern movement to the culmination of the international style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisites: Minimum Junior standing or Digital Culture: Design major
APH	337	20th-Century Architecture II	Developments in architecture since the international style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre-requisite: APH 336
APH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	405	Contemporary Architecture	Addresses issues of global architecture and urbanism in the late 20th and early 21st centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): APH 313 and APH 314, or graduate standing OR Visiting University Student
APH	414	Great Cities	Historical survey of great cities from antiquity to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 3.00 GPA; minimum 60 hours; Credit is allowed for only APH 414 or MUD 598 (Great Cities) OR Visiting University Student
APH	421	First Concepts	Examines the major writings and concepts that surround the history of architecture. Focuses on (but not exclusively) work in the 20th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L or HU	Prerequisite(s): Architectural Studies BSD or Environmental Design BS major; APH 313 with C or better; APH 314 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student

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APH	441	Ancient Arch	Architecture of the ancient Mediterranean world with selective emphasis on major historical complexes and monumental sites.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
APH	461	Charles and Ray Eames	Survey of American designers Charles and Ray Eames, their innovation design thinking and masterworks.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): minimum 3.00 GPA; minimum 60 hours OR degree- or nondegree-seeking graduate student; Credit is allowed for only APH 461 or APH 494 (Charles + Ray Eames) OR Visiting University Student
APH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
APH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
APH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
APH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
APH	505	Foundation Theory Seminar	Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture student; Co-requisites: ADE 522; ATE 556
APH	509	Foundation Seminar	Historical, technical, theoretical, environmental, and professional issues in architecture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Master of Architecture; Co-requisite: ADE 510
APH	515	Current Issues and Topics	Critical examination of current architectural issues, topics, and discourse.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: APH 505 with a C or better; Co-requisite: ADE 621
APH	581	Contemporary Urban Design	Explores contemporary city and urban design issues related to contemporary cities.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
APH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
APH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
APH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
APH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	518	World Englishes	Examines the implications of the global spread of English, including its diverse forms and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 518 or APL 591 (World Englishes) or APL 691 (World Englishes)
APL	555	Disciplinary Discourses	Professional and disciplinary issues in linguistics and applied linguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
APL	558	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510

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APL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student
APL	588	Spanish Language Acquisition	Examines Spanish language acquisition in children and adults in the context of monolingual and bilingual language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate
APL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Pre-requisite: Applied Linguistics Ph.D. student
APL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	601	Intro to Applied Linguistics	Overview of the field of applied linguistics. Applies linguistic knowledge to the resolution of language-related issues facing multilingual societies (e.g., second language acquisition and ultimate attainment, literacy, language assessment, bilingualism, heritage and indigenous languages, language attitudes, language planning and policy, language and politics, world Englishes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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APL	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	501	Differential Equations I	Linear and nonlinear ordinary differential equations. Existence and uniqueness of solutions, limit sets, stability, Lyapunov functions, linear systems with constant coefficients. Geometry of behavior in two and three dimensions, including Poincare-Bendixson theorem, Lorenz equations, linearization, sensitive dependence on initial conditions, bifurcations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	502	Differential Equations II	Partial differential equations, including classification, method of characteristics, separation of variables, boundary value and initial value problems, Green's functions, maximum principle, distributions, and weak solutions. Students must have already taken or be concurrently enrolled in Differential Equations I.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	503	Applied Analysis	Convergence sequences and series of functions; metric space topology, compactness, completeness and the Ascoli-Arzelà Theorem; Contraction Mapping Principle, Implicit Function Theorem; intro to Lebesgue integration leading to L^p -spaces; properties of Hilbert spaces, Fourier transform. Students should have knowledge of linear algebra, multivariable calculus, and analysis at the undergraduate level.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	504	App. Prob. and Stochastic Proc	Markov chains, Martingales, probability measures, SDE, Brownian motion, Monte Carlo methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	505	Applied Linear Algebra	Fundamentals of linear algebra and numerical linear algebra, including decompositions (LU, QR, SVD), Eigen values, spectral theory, least squares problems. Programming with MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	506	Computational Methods	Covers interpolation, solution of nonlinear equations and systems, numerical differentiation, numerical integration, numerical solution of ordinary and partial differential equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	520	Adv Numerical Linear Algebra	Extends topics of APM 505. Introduces essential iterative methods, Gauss-Seidel, conjugate gradients. Methods for SVD, total least squares and root-finding applications in image analysis. Students should have basic knowledge of numerical linear algebra and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	522	Numerical Methods for Partial	Numerical methods for parabolic, elliptic, and hyperbolic partial differential equations, including finite difference/volume, finite element, and spectral methods. Mathematical concepts of stability, consistency, and convergence. Applications to scientific, biomedical, and industrial problems. Students should have a basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	523	Optimization	Building on a fundamental undergraduate background in linear algebra and calculus, covers continuous optimization, constrained/unconstrained and linear/nonlinear, as well as selected topics in discrete optimization. Some programming experience is needed for course projects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	524	Spectral Methods	Extends approximation theory to global methods, including Fourier and orthogonal polynomial expansions. Applications to imaging and hyperbolic, parabolic, and elliptic partial differential equations. Students should have previous graduate courses in ordinary and partial differential equations, basic programming skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	525	High-Performance Computing	Supercomputer architectures, parallel programming environments, languages, libraries, and algorithms for high-performance numerical simulations. Instructor/Department approval is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only APM 525, MAE 494 (High-Performance Computing) or MAE 598 (High-Performance Computing)
APM	526	Adv Numerical Methods for PDEs	Partial content will vary from semester to semester, but may include hyperbolic conservation laws, finite element methods, multigrid methods, and parallel algorithms for partial differential equations. Applications to scientific, biomedical, and industrial problems. Students should have basic knowledge of PDE's and a programming language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	530	Mathematical Cell Physiology.	Mathematical modeling of dynamical aspects of cell physiology. Diffusion, membrane transport, intracellular calcium channel kinetics, calcium oscillations and waves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	531	Mathematical Neuroscience I	Mathematical modeling of electrochemical processes in nerve cells. Dendritic modeling, dendritic spines and synaptic plasticity, bifurcation analysis of excitable membrane models, deterministic and stochastic methods for threshold dynamics and bursting, relaxation oscillations. Students should have had a previous graduate-level PDE course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	533	Mathematical Population Biolog	Selectively covers population biology models in the forms of systems of difference equations or ordinary differential equations. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous graduate-level course in ODE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	534	Mathematical Population Bio 2	Selectively covers population biology models in the form of partial differential equations and systems. Focuses on mathematical analysis of population models as well as model formulation and simulation. Students should have a previous basic graduate-level course in ODE and PDE.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	535	Math Models in Medicine	Mathematical models for the etiology, epidemiology, pathogenesis, morphology and treatment of disease. Covers dynamical models of cancer and viral infections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	541	Stochastic Modeling in Biology	Markov processes, random walks, martingales, branching processes, logistic growth model, Wright-Fisher model, Kingman's coalescent, bound and site percolations, contact processes, voter models. Students should have previously taken course work in probability and/or stochastic processes (or have a recommendation from their advisor). Recommendation from advisor is typically for students in biology or physics that have not taken statistics courses but have a good background in mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	560	Applied Dynamical Systems	Bifurcations, normal forms, pattern formations, mixing, Lagrangian chaos, and applications to fluid dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	570	Applied Linear Operators	Bounded linear and compact operators on Hilbert spaces. Linear integral equations, Fredholm and Hilbert-Schmidt theory, and approximate methods. Distributions. Completion of a course in Applied Analysis is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	575	Perturbation Mthds Appl Math	Regular and singular perturbation methods for ordinary and partial differential equations, Boundary layer theory, matched asymptotic expansions, multiple-scale, homogenization, and WKB methods. Application to nonlinear oscillations, bifurcation and stability problems. Completion of a course in Differential Equations II or Partial Differential Equations in Engineering is strongly recommended prior to enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: APM 502 or MAE 502; Credit is allowed for only APM 575 or MAE 505
APM	576	Theory of PDE I	Existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	577	Theory of PDE II	Continuation of existence and uniqueness theorems, boundary value and initial value problems, characteristics, Green's functions, maximum principle, distributions, and weak solutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): APM 576
APM	581	Geometry&Control of Dyn Sys 1	Manifolds, tangent and cotangent bundle, Lie theory, integrability and controllability, and feedback control. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	582	Geometry&Control of Dyn Sys 2	Variational principles, Euler-Lagrange equations, Hamiltonian systems, optimal control, connections and curvature. Students should have previously taken coursework in differential equations, applied analysis, applied probability, and stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP4	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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APM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
APM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARA	101	ASU: The Art Experience	Introduces the culture, challenges and opportunities of the School of Art. Addresses essentials for academic and personal success within the university.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	1		Credit is allowed for only ARA 101, 194 (ASU Art Experience) or HDA 194 (ASU Herberger Inst Experience)
ARA	110	Sculpture Safety	Introduces safety and environmental health in the sculpture studios. Pre- or corequisite for all sculpture classes.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	1		
ARA	195	Art in My World	Basic concepts and fundamental questions that provide insights into art making and that affect one's understanding and appreciation of art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARA	202	Understanding Photographs	Slide lecture course in understanding photography as a fine art form.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARA	240	Encounters with Art	Provides an open environment for dialogue and discovery of what it means to be a successful artist, and allows students to explore their own academic and career goals. Exposes students to new ideas and people, and familiarizes them with the School of Art and ASU resources designed specifically for them. Includes an intense focus on professional practices in the fine arts and provides the tools to help students succeed personally and professionally. An acknowledgment of ongoing rigorous studio practice plays a fundamental role in the course, and students expand their abilities to think critically and to communicate articulately about their own work and the work of others through in- and out-of-class projects, discussions and critiques that encourage consideration of their own work in the context of current opportunities and directions in the visual arts. In addition, students have the opportunity to engage with and learn from industry professionals.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ARA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	309	Photography Now	Explores contemporary practice through lectures, readings, exhibition visits, screenings and discussions. Explores work created within the past thirty years up to the present. Students act as a collective "ear to the ground" for the medium, engaging in first-hand experiences and research and being responsible to share those experiences with the class as active agents of discovery. Requires reading current periodicals, attending and discussing photographic lectures and exhibitions both in-class and beyond within the local community.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	311	Art Appreciation and Human Dev	Foundations of art for children and young adults. Emphasizes learning, development, and understanding art in historical and cultural contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): non-ART student; ENG 101; ENG 102; minimum junior standing
ARA	330	Issues in Intermedia	Critical survey of recent theory and practice in "intermedia" art. Created specifically to provide a common historical and theoretical framework for students majoring in the intermedia area, as well as to anyone seeking to broaden his or her understanding of non-traditional media, performance, installation, computer art, video, social practice, Webart and interactivity and their relationship to contemporary society and discourse.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 216 or minimum 45 hours; Credit is allowed for only ARA 330 or ARA 494 (Issues in Intermedia) OR Visiting University Student
ARA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		

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ARA	396	Pro Practices for Design&Arts	Prepares young artists, designers and individuals in other creative fields to successfully enter the professional world of art and culture beyond the support system of the university. Through examining contemporary artists' models of practice and creative entrepreneurship; developing real life materials to promote their practice; engaging with guest artists, designers and other creative professionals; exploring best practices for arts-based businesses; and the array of continuing opportunities, student artists learn how they can shape their lives to sustain their artistic practice once they graduate. Best suited for students who are prepared to seriously contemplate the continuation of their specific practice beyond graduation. Students should enter this course with a collection of work samples that demonstrate their experience in their chosen discipline.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 56 hours; Credit is allowed for only ARA 396 or ARA 394 (Professional Practices for Artist) OR Visiting University Student
ARA	460	Gallery Exhibitions	Practical experience in all phases of department gallery operations and preparation of gallery publications.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ARA 460 or 560
ARA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARA	489	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person and discussing them, and writing and revising their own pieces of criticism.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
ARA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ARA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		
ARA	522	Studio Art Pedagogy	Principles of learning and instruction for teaching assistants assigned to foundation-level studio art courses and other grad-level students with an interest in studio art pedagogy.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARA 522 or ARA 598 (Prinopl-Core Art Instructio)
ARA	560	Gallery Exhibitions	Provides practical experience in all phases of art gallery operations. Students learn professional art gallery practices through hands-on experience in the School of Art Student Galleries including Harry Wood, Step, and Gallery 100. Class members assist BFA and MFA candidate students in many phases of exhibition preparation and execution as well as assist with the curation and design of group exhibitions.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARA 460, 560 or 598 (Gallery Exhibitions)
ARA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	589	Writing Art & Design Criticism	Arts writing workshop designed to help develop critical voice in written form. During the course of the semester, students learn about art and design criticism by reading work in a variety of contexts, looking at examples of art and design in person, analyzing and discussing them, and writing and revising their own pieces of criticism.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or non-degree seeking). Credit is allowed for only ARA 489 or ARA 589 or ARA 598 (Writing Art & Design Criticism)
ARA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ARB	101	Elementary Arabic I	Introduces the basic skills of speaking, listening, reading and writing of Modern Standard Arabic (MSA) for the purpose of communicative goals. Incorporates Arabic cultural knowledge as it is an important element in real-life communication.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only ARB 101 or MSA 101
ARB	102	Elementary Arabic II	Reading, writing, speaking, and understanding basic Arabic.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 101 or MSA 101 with C or better; Credit is allowed for only ARB 102 or MSA 102 OR Visiting University Student
ARB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	201	Intermediate Arabic I	Starts with a review of the basics learned in previous coursework. Expands vocabulary and grammar structures. Addresses all four communication skills: reading, writing, listening and speaking in Modern Standard Arabic. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 102 or MSA 102 with C or better; Credit is allowed for only ARB 201 or MSA 201 OR Visiting University Student
ARB	202	Intermediate Arabic II	Expands vocabulary and grammar structures and continues to develop communicative skills in Modern Standard Arabic. Enables students to attain an advanced level of proficiency in all Arabic language skills: reading, writing, listening and speaking. Also introduces aspects of the culture of the Arab world.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): ARB 201 or MSA 201 with C or better; Credit is allowed for only ARB 202 or MSA 202 OR Visiting University Student
ARB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	311	Advanced Arabic Skills I	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 with C or better OR Visiting University Student
ARB	315	Advanced Arabic Heritage	Provides an advanced ability to read, understand, write and communicate in Arabic. Covers important topics such as advanced descriptions of one's country, city, university, home and family. Also concentrates on studying advanced questions and answers in the present, past and future tenses. Uses the communicative approach in adopting different pedagogical approaches centered on the communicative method, such as group practice, role play and situational dialogues. Introduces and explains detailed and advanced knowledge of Arabic grammar, structures of Arabic sentences; and the deep connotations of important Arabic vocabulary. Emphasizes building up more vocabulary and grammatical knowledge for communication purposes, introducing cultural, intellectual, business and political contents and terminology in Arabic; and expressing in advanced Arabic one's daily activities, past life and futuristic plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only ARB 101 or ARB 102 or ARB 201 or ARB 202 or ARB 315 or ARB 394 (Advanced Arabic for Heritage Speakers I) or ARB 394 (Advanced Arabic for Heritage Speakers II) OR Visiting University Student
ARB	321	Arabic Conversation I	Emphasizes spoken Arabic and conversation skills. Simultaneously develops communicative skills, vocabulary, and cultural awareness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
ARB	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student
ARB	335	Arabic Culture and Islam	Develops awareness of Arabic culture and Islam. Covers a variety of cultural topics, including family, status of women, food, music, and Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	
ARB	336	Introduction to the Qur'an	Introduces the Qur'an and examines the historical, contextual, religious and interpretive dimensions wherein the Qur'an developed. Deals with the structure of the Qur'an, the different sections, suras (Qur'anic chapters), and some of the verses. Also includes an introduction to the idea of revelation, its history, the content and some of the different themes of the Qur'an, and discusses aspects of the Qur'an as a source of law. Taught in English; requires no knowledge of Arabic or Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 336 or ARB 394 (Introduction to the Qur'an) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ARB	337	Hadith and Prophetic Tradition	Considers the Hadith as a literary text and as the prophetic tradition in Islam. Focuses on the development of the Hadith as a vast subject in Arabic literature, its collection methodology, Hadith science, and its contents. Gives special attention to the relationship of the Hadith as the second source, after the Qur'an, of Islamic knowledge, Islamic theology, Islamic philosophy and Islamic law. Explores the various ways and approaches in which Muslims employ the Hadith along with the Qur'an in their search for meaning, identity and knowledge. All readings are in English; requires no prior knowledge of Arabic language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 337 or ARB 394 (Arabic Hadith and Prophetic Tradition) OR Visiting University Student
ARB	340	Arabic Translation	Covers the fundamentals of English-Arabic and Arabic-English translation including basic techniques of translation through exploring the essential theories and concepts adopted in the process of translation. Also addresses the areas of difficulty aroused during the process of translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 311 or 315 with C or better; ENG 102, 105, or 108 with C or better; Credit is allowed for only ARB 340 or ARB 394 (Introduction to Arabic Translation) OR Visiting University Student
ARB	341	Quran Text and Women	Addresses Muslim women scholars' argument that it is not the religion but the patriarchal interpretation of the Quran that have kept Muslim women oppressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	
ARB	351	Classical Arabic Literature	Provides a survey in classical Arabic literature. Focuses on the development of classical Arabic poetry and prose since their interceptions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
ARB	352	Modern Arabic Lit/Trans	Surveys the major trends, themes and genres of modern Arabic literature in translation. Provides a foundational knowledge of modern literature in the Arabic language. Focuses on continuity and change, cultural diversity and multiplicity in the Middle East, and the social, religious and historical aspects of modern Arab culture. No knowledge of Arabic language is required for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; Credit is allowed for only ARB 352 or ARB 394 (Introduction to Modern Arabic Literature)
ARB	360	Islamic Philosophical Lit	Covers the most important Muslim philosophers and their contributions to philosophy. Concentrates on presenting and analyzing the main Islamic theories in philosophy, such as the different theories of creation, the role of reason and rationalism versus traditionalism. In addition, provides detailed information about the Islamic philosophical theories of language and meaning, and how these theories influenced the development of many distinct philosophical and literary works in the Arab-Islamic world. Also portrays Arabic language as a philosopher which provides philosophical definitions and analyses of many important concepts. Some of the famous philosophers which this course covers are the following: Al-Farabi, Ibn Sina, Al-Ghazali and Ibn Rushd. Those philosophers and their theories are still highly influential today in the Arab-Islamic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 360 or ARB 394 (Islamic Philosophy)
ARB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	411	Advanced Arabic Skills II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ARB 311 with C or better
ARB	421	Arabic Conversation II	Focuses on developing all four skills of the Arabic language acquisition: reading, writing, listening, and speaking. Aims to help students acquire an advanced proficiency in Arabic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
ARB	422	Advanced Arabic Media	Advanced language course designed to improve students' reading, writing, listening, speaking and debating skills. Exposes students to Arabic language used in the media. Incorporates news items from print and electronic media sources, including print and online news articles, television news and YouTube videos, among other materials. The purpose of using many sources is to enable the students to have an advanced experience reading diverse media materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ARB 311 or 315 OR Visiting University Student
ARB	427	Arabic Prose	Surveys Arabic prose treasures such as Maqama, Hikaya, Khabar, Risala and Drama. Pays particular attention to the collection of folklore tales known as The Arabian Nights (The Thousand and One Nights), using them as one of the most fascinating "world" texts, loaded with fairy tales, fables, romances, farces, legends and folk stories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ARB 202 or 315 with C or better; Credit is allowed for only ARB 427 or ARB 494 (Modern Arabic Prose)

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ARB	428	Arab Women's Writing	Offers a survey of Middle Eastern women's literary work in English translation. Themes focus on a comprehensive view of women's writing through several lenses, including: gender, religion and socio-political systems to introduce women's writing in modern Arabic literature through the prisms of Arabic literary criticism and feminist theory within historical contexts. Explores different genres, including autobiographical, short stories and novels, and cinematic production. Selective literary texts include leading 20th-century female writers whose works in translation represent a wide range of geographical, ideological and cultural influence. Featured writers include Rajaa al Sania, Latifa Zayyat, Radwa Ashur, Hanan al-Shaykh, Nawal Al Sadawi and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 428 or ARB 494 (Arab Women Writing Across Generations/ in Eng) or SLC 428 or SLC 494 (Arab Women Writing Across Generations/ in Eng) OR Visiting University Student
ARB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ARB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ARB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ARB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ARB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	101	Architecture Project I	Project-based studio to introduce beginning concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project. Introduces and guides students through an iterative design process leading to a public exhibition of their work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	102	Architecture Project II	Project-based studio to enhance beginning concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project. Introduces and guides students through an iterative design process leading to a public exhibition of their work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	111	Architecture of Architecture I	Introduces the nature of architecture. Students work individually and collectively to document the built environment that surrounds us all, developing new ways of seeing and thinking and documenting their discoveries in a wiki.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	112	Architecture of Architecture II	Introduces the history and discourse of global architecture. Students work individually and collectively to document the built environment that has shaped our collective histories, developing new ways of seeing and thinking and documenting their discoveries in a wiki.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	201	Architecture Project III	Project-based studio to develop models of architectural thinking. Students work collaboratively and individually on a semester-long design project, developing an iterative design process leading to a public exhibition of their work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	202	Architecture Project IV	Project-based studio to further develop concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, developing an iterative design process leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
ARC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	301	Architecture Project V	Project-based studio to master concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, mastering an iterative design process leading to a public exhibition of work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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ARC	302	Architecture Project VI	Project-based studio to master concepts of architectural thinking. Students work collaboratively and individually on a semester-long design project, mastering an iterative design process leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	351	Architecture of Collaboration	Covers models of collaboration. Students learn tactics and strategies to work in teams and to collaborate on projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	352	Architecture of Leadership	Covers models of leadership. Students learn tactics and strategies to work in teams and to collaborate on projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	353	Architecture of Presentation	Covers models of oral and written communication. Students learn tactics and strategies to present their work.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	401	Architecture Studio I	Project-based studio introducing an iterative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	402	Architecture Studio II	Project-based studio further enhancing the iterative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): ARC 401 with C or better OR Visiting University Student
ARC	421	Architecture Technology I	Covers conventions in architectural technology. First principles of structural forces and thermodynamics. Material and methods of construction.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	422	Architecture Technology II	Covers conventions of building systems in architectural technology, including integration of construction, tectonics and energy systems.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	432	Architecture History	Survey of global history and theory of architecture and design spanning a chronological period from prehistory to the 17th century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	441	Architecture Representation	Covers the history and conventions of architectural drawings, models, diagrams and other forms of representation. Applies contemporary techniques and tools to representation architectural works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ARC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): minimum 56 hours; Pre- or corequisite(s): ARC 301
ARC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ARC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
ARC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ARC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-7		
ARC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	501	Advanced Architecture Studio I	Project-based studio introducing an integrative design process. Students work individually and collectively on a semester-long design project leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student
ARC	502	Adv Architecture Studio II	Project-based studio further enhancing the integrative design process. Students work individually and collectively on a semester-long design project, developing their understanding leading to a public exhibition of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 501 with C or better
ARC	522	Adv Architecture Technology I	Covers integration of building systems and regulations in applied architectural technology. Project-based synthesis of building construction, tectonics and energy systems.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	531	Advanced Architecture History	Survey of global history and theory of architecture and design spanning a chronological period from the 17th century to present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	532	Architectural Theory I	Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	541	Adv Arch Representation	Explores and analyzes advancing techniques in architectural drawings, models, animation, virtual and augmented reality.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ARC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	601	Adv Architecture Studio III	Design problems emphasizing advancement of the discipline of architecture through topical research in conjunction with faculty.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 502 with C or better
ARC	602	Adv Architecture Studio IV	Individual, student-initiated project reflecting a culminating synthesis of architectural ideas.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Architecture MArch student; ARC 601 with C or better
ARC	621	Adv Architecture Technology II	Advancing innovations in architectural technology. Research-based explorations focused on emerging developments in building construction, tectonics and comfort systems.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	632	Architectural Theory II	Advanced architectural theory course that explores contemporary topics.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	651	Architecture Research	Critical examination and implementation of architectural research methods—historical, qualitative, simulation and modeling, case study, experimental, correlational, logic and argumentation.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	662	Architecture Practice	Critical examination of organizational modes and missions of contemporary architectural practice, including the business of architecture, stakeholders, ethics, and legal and professional responsibilities.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architecture MArch student
ARC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARC	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	250	Teaching Inquiry in Art	Issues in teaching and learning through directed, guided, and independent inquiry about artworks and through art making.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102; 6 hours (2 classes) from ART 111, 112, 113, or 115 with C or better OR Visiting University Student
ARE	301	Studio Art & Human Development	Study of human development in studio art from early childhood to adult years.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARE	370	Teaching Visual Culture	Explores issues and applications of everyday aesthetics that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) with C or better: BA or BFA Art major: ARE 250 OR BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor: ARS 101 or ARS 102; ART 110; ART 112 (or ART 113, 115 or 116) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ARE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	446	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARE 446 or ARE 494 (Multicultural Issues in Art Education) or ARE 546 or ARE 598 (Multicultural Art Education) OR Visiting University Student
ARE	482	Teaching Art Processes	Art traditions of the 20th century as a basis for studio and art history instruction. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Fine Arts Art student
ARE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARE	486	Art Education:Strategies/Appls	Implementation and evaluation of art instruction for K-12 population. Includes teaching of Saturday classes in the Children's Art Workshop. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ARE 482 with C or better OR Visiting University Student
ARE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARE	496	Methods/Assess/Learning in Art	Individual or group research on the assessment of art learning incorporating theory and practice. Meets art postbaccalaureate certification requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ARE 250 with B- or better
ARE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 90 hours
ARE	510	Visual Culture Research	Research on instruction of everyday aesthetics and related issues that contain powerful technological, social, and economic factors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	520	Issues/Teaching Inquiry in Art	Issues in teaching and learning focused both on inquiry about artworks and on inquiry through art making.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	525	Research on Art Instruction	Research methods and assessment of learning in art. Pilot studies on the effects of instruction on learning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	530	Issues in Teaching Studio Art	Critical examination of issues concerning teaching multicultural art to different populations of students. Historical and philosophical foundations reviewed. Recommended to be taken before ARE 535.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	535	Research/Teaching Studio Art	Review of empirical and historical research methods, learning theory, and assessment of learning in studio art, including developmental studies and their limitations. Pilot studies on the effects of instruction upon learning. Recommended to be taken after ARE 530.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	540	Teaching Art/Cultural Contexts	Relationship of multicultural perspectives to teaching/learning art criticism, aesthetics, studio art, and art history.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	546	Multicultural Issues in Art Ed	Explores multicultural issues, ethnicity and cultures related to art and education. Discussion course on facts and sometimes controversial interdisciplinary materials draws upon knowledge from various disciplines. Emphasizes art educational issues and teaching. Also explores and analyzes international and global issues concerning multiculturalism.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only ARE 446, 494 (Multicultural Issues in Art Education), 546 or 598 (Multicultural Art Education)

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ARE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours

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ARE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARP	451	Architecture Field Studies	Organized field study of architecture in specified national and international locations. Credit/no credit. May be repeated for credit with director approval.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6		
ARP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): ADE 322 with C or better; Corequisite(s): ADE 421
ARP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Master of Architecture student; ADE 522 with a C or better
ARP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
ARS	100	Introduction to Art	Provides an introduction to the understanding and enjoyment of art through the study of painting, sculpture, design, photography, and the decorative arts. Students gain an awareness of meaning, functions, and significance of art, while learning an art-related vocabulary and a set of analytical tools for discussing and understanding art from around the world.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	101	Art-Prehistory thru Middle Age	History of Western art from the Paleolithic period through the Middle Ages.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	102	Art Renaissance to Modernism	History of Western art from the Renaissance to 20th-century modernism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	
ARS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	201	Art of Asia	History of the art of the Asian cultures, with emphasis on China, Japan, and India. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	202	Art of Africa/Oceania/Americas	History of art of Africa, Oceania, and the New World. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H & G	
ARS	250	History of Photography	History of photography from the 19th century to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ARS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	300	Introduction to Art	Parallels ARS 100 course content but requires a higher level of accomplishment and comprehension. Introduces visual culture, the purpose of art, and the relationship between art and visual culture. Students learn how visual culture pervades our everyday lives and how understanding visual literacy can help us participate more fully in the world around us.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Non-Art majors; minimum 2.00 GPA; minimum 55 hours; Credit is allowed for only ARS 100 or ARS 300 OR Visiting University Student
ARS	310	The Renaissance in Tuscany	Course taught in Florence, Italy. History of arts in Tuscany with focus on city of Florence from 14th through 16th centuries. Completion of ARS 101 and 102 suggested.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ARS	330	The Portrait	Examines the history and production of portraits in contexts of social hierarchies, historical events, gender, politics, class, morality and aesthetics with a focus on the 15th to the 21st centuries in painting, sculpture and photography.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): one 100-level course in APH, ARS, ASB, ENG, FMS, HST, MHL, MUS or SLC with B- or better; Credit is allowed for only ARS 330 or ARS 394 (Genre: Portraits) OR Visiting University Student
ARS	340	Art in America	American art from colonial times through the Second World War. Not available to students who have completed ARS 542.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major; ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration; ARS 101 with C or better; Credit is allowed for only ARS 340 or ARS 542
ARS	345	Art and Television	Critical introduction to the interrelation of technology and visual art using the tools of art history and media/cultural studies. Students read theorists of the relation between visual art and the mass media, and use them to analyze early presentations of visual art and art history on television of the 1960s and 1970s. Examines the contemporaneous and parallel development of video art--an artistic medium appropriated from television technology--through the study of key video artworks.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 2.00 GPA; minimum 45 earned hours

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ARS	350	Museums: Meaning and Function	Exposes the broad scope of what museums do by exploring their history and the critical issues they face today. Acquaints students with the historical and contemporary function of museums and the concepts they currently engage with, such as authorship, authenticity, identity, education, interpretation, storytelling, technology, ethics, cultural heritage, public engagement and diversity. Enhances reading materials with talks by museum professionals, films and discussion boards.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 350 or ARS 394 (Introduction to Museums) OR Visiting University Student
ARS	362	Survey of Aztec/Maya/Inka Art	Art history of the Aztecs, Maya, Inka and their ancestors before the arrival of Europeans. Covers their prolific artistic production starting with their earthworks in the deserts of Peru and ending with their stone pyramids and painted codices of Guatemala and Mexico. Meets non-Western Art History Requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 45 hours
ARS	369	Mexican Art	Critically examines how Mexico and its people have represented themselves and been represented by others from ancient times to the 20th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 369 (ARS 469) or ARS 394 (Mexican Art) OR Visiting University Student
ARS	370	The Art of the Comic	Examines popular culture art forms of comics, comic books and graphic novels as they relate to the art of the west as well as their greater global context. Explores the various genres of comics and investigates a variety of themes found in comics, including war, gender construction, and the impact of globalization on western culture and society. Students become familiar with some of the most important comic artists, and the studio processes for the creation of comics. Concludes with an investigation of the impact of comic art on fine art around the world and on live-action films.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 370 or ARS 394 (The Art of the Comic)
ARS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	402	Art of Ancient Egypt	Aesthetic, philosophical, and cultural basis of Egyptian art from pre-Dynastic period through New Kingdom. Emphasis on sculpture and architectural monuments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 or 102 with C or better; Credit is allowed for only ARS 402 or ARS 502 OR Visiting University Student
ARS	403	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)
ARS	404	Greek Art	History of art, architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 101 with C or better; Credit is allowed for only ARS 404 or ARS 504
ARS	406	Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): Art BA or BFA major: ARS 101 with C or better; ARS 102 with C or better OR Studio Art minor or BIS Studio Art concentration: ARS 101 with C or better
ARS	414	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 414 or ARS 514
ARS	418	German Renaissance Reformation	Graphics, painting, sculpture, and architecture, ca. 1450-1550. Reformation themes and Renaissance style considered within religious, political, social, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): ARS 101 or ARS 102 OR any 200-level or higher course in ASB, ENG, FRE, GER, HST, ITA or REL with B- or better; Credit is allowed for only ARS 418 or ARS 598 (German Renaissance and Reformation Art)
ARS	422	Italian High Renaissance Art	History of Italian art during the 16th century, including the achievements and influence of Leonardo da Vinci, Raphael, and Michelangelo.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 422 or 522
ARS	424	Italian Baroque Art	Italian painting, sculpture, and architecture of the 17th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Pre-requisites: ARS 101; ARS 102
ARS	434	Revolution to Impressionism	Between 1770 and 1900, a period called the long 19th century, Europeans experienced rapid and extensive changes in politics, culture, social and economic structures, scientific methods, and technology. The Industrial and French Revolutions reflected rapid developments rooted in the 16th-17th century Scientific Revolution and rising nationhood. Considers how in this period European art reflected and shaped historical events in content, style, representational strategies and new roles for art and artists.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): any 200-level course or higher in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 434 or ARS 534

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ARS	435	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	438	Art of the 20th Century I	Developments and directions in art between 1900 and World War II.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 with B- or better or one course in ARS, ENG or HST at 200 level or higher with B or better OR Visiting University Student
ARS	439	Art of the 20th Century II	Art since World War II, with consideration of new concepts and experimentation with media and modes of presentation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & H	Prerequisite(s): ARS 102 or 438 with B- or better; Credit is allowed for only ARS 439 or ARS 539
ARS	440	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
ARS	441	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Also considers historical precedents, including Civil War monuments and the City Beautiful Movement.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	442	Critical Issues in Am Painting	Explores issues of national identity and western expansion, Manifest Destiny, through images of race and violence in western American painting from 1800 to the early 20th century. Includes "claiming and settling the wilderness," cultures in conflict, the cowboy, and visions of an enchanted land.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: ARS 101; ARS 102; Credit is allowed for only ARS 442 or 542
ARS	443	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430
ARS	444	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
ARS	445	History of Animation	Covers popular art forms of animated films as they relate to the art of the west as well as their greater global context. Begins with a brief look at the importance of storytelling in human culture before turning to the roots of animation; the invention of moving animated pictures in the early 20th century; the rise of major animation studios like Walt Disney, Fleischer Studios and Warner Bros.; television animation; foreign animation classics; and the recent work of independent animators. Students become familiar with some of the most important animation directors and the studio processors for the creation of animated films. Concludes with an investigation of the impact of animation on fine art and live-action films.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ARS 445 or ARS 494 (History of Animation)
ARS	456	Intro to Museums	Broad scope of what museums do by exploring their history and the critical issues they face. Acquaints students with the basic functions of specific museum departments and staff, including the role of director, curator, registrar, preparator, as well as fund raising, marketing, audience development, education, exhibitions, conservation, ethics, cultural/heritage tourism and public art. Guest speakers and field trips enhance classroom material.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or ARS 102 OR any 200-, 300- or 400-level course in ASB, ENG or HST with B- or better
ARS	460	Art Now	Critical overview of major issues and controversies of the last 10 years within the global, national, and local art scene.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ARS 101 or 102 with B- or better or one course in ARS, ENG, or HST at the 200 level or higher with B or better, OR Digital Culture major

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ARS	465	Native Art of North America	Native American art forms of the United States and Canada from prehistoric times to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU & C & H	Prerequisite(s): minimum 45 hours; minimum 2.00 GPA; Credit is allowed for only ARS 465 or ARS 565 OR Visiting University Student
ARS	472	Art of China	Study of major forms in Chinese art: ritual bronze, sculpture, ceramic, calligraphy, painting, and architecture. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 50 hours; minimum 2.00 GPA OR Visiting University Student
ARS	473	Art of Japan	Japanese art from the Joman period to the present. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): minimum 55 hours; Credit is allowed for only ARS 473 or ARS 574 OR Visiting University Student
ARS	475	Chinese Painting	From Ku K'ai-chin to Ch'i Pai-shih. Major artists, styles, and movements in Chinese painting. Meets non-Western art history requirement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	Pre-requisites: Minimum 50 hours; Minimum 2.00 GPA; Credit is allowed for only ARS 475 or 575
ARS	480	Research Methods	Methodology and resource material for art historical research. Techniques of scholarly and critical writing and evaluation of bibliographic sources.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): Art (Museum Studies) BA or Art (Art History) BA major; ARS 101 with C or better; ARS 102 with C or better; ENG 101, 105, or 107 with C or better; minimum 56 hours OR Visiting University Student
ARS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		
ARS	485	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	L	Prerequisite(s): ARS 101; ARS 102; ENG 101, 105, or 107 with C or better; Credit is allowed for only ARS 485 or ARS 585 OR Visiting University Student
ARS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ARS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ARS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ARS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ARS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Pre-requisite: Minimum 90 hours
ARS	501	Methodologies and Art History	History of the discipline and an exploration of various methodologies, critical theory, and bibliographies used by art historians.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	502	Critical Studies/Egyptian Art	Egyptian art from pre-Dynastic to New Kingdom periods. Focus on aesthetic, philosophical, and cultural contexts. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 402 or 502
ARS	503	Art of the Aztec Empire	Provides a greater knowledge of the art and architecture of the Nahuatl-speaking Aztecs of Central Mexico from the time of their first appearance in the archaeological record until the Spanish invasion of Central Mexico in 1521.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 403 or ARS 503 or ARS 494 (Art of the Aztec Empire) or ARS 598 (Art of the Aztec Empire)
ARS	504	Critical Approach to Greek Art	Art and architecture of Aegean civilizations (Cycladic, Minoan, Mycenaean) and of Greece to end of Hellenistic period. Research paper and readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 404 or 504
ARS	506	Critical Studies in Roman Art	Art and architecture of Etruria, the Roman Republic, and the Roman Empire. Research paper and/or supplemental readings required.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	514	Monasteries, Madonnas & Manuscript	Sculpture, painting, architecture and minor arts in western Europe, ca. 1030-1200, considered within religious, economic and social contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 414 or ARS 514

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ARS	533	The Pre-Raphaelites	Explores Pre-Raphaelite culture, both literature and art, and relevant social history, from the Pre-Raphaelite Brotherhood through Aestheticism and early twentieth century, focusing on interactions between images and texts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ARS	534	Art & Visual Culture/19th Cent	Critical study of visual arts using primary source material from mid-19th century to WWI within philosophical, socioeconomic, and economic contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 434 or 534
ARS	538	Art of the 20th Century I	Charts how the avant-garde in the early 20th century developed different strands of modern art as it sometimes grew closer to, and at other times veered away from, radical politics.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 438, 538 or 598 (Art of 20th Century I)
ARS	539	Art of the 20th Cent. II	General introduction to major trends and issues of Euro-American art created between 1955 to around the turn of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking); Credit is allowed for either ARS 439 or ARS 539 or ARS 598, Art of 20th C
ARS	540	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critiques stereotypes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
ARS	541	Public Art	Explores the lively field of contemporary public art, particularly as defined by percent-for-art programs established through city ordinances during the last forty years. Considers historical precedents including Civil War monuments and the City Beautiful Movement.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 441, 498 (Public Art), 541 or 591 (Public Art)
ARS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)
ARS	544	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking). Credit is allowed for only ARS 444, ARS 544, ARS 598 (Films of India) or FMS 426

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ARS	555	Museums and Social Justice	A recent spate of scandals, protests and a global pandemic have forced museums and heritage institutions to face up to some difficult ethical and financial issues. In the wake of the Black Lives Matter protests, these include reassessments of staffing demographics, salary differentials, and discussions of how best to address racial and gender diversity in acquisition policies, permanent collection displays and exhibition schedules. The #MeToo movement has resulted in difficult conversations about sexual harassment and gender discrimination in museums as well. Other recent public controversies have demanded reevaluations of board vetting procedures to avoid reputational controversies, a more thorough review of corporate sponsors vis-a-vis a museum's mission, and the development of action plans to address the legacy of colonial theft and Nazi looting. Covid-19 has also greatly affected museums--attendance, annual budgets--and has resulted in mass layoffs and organizational restructurings, as museums are left to wonder about their financial viability moving forward. Also discusses whether museums have a moral responsibility to respond to and become engaged with compelling social justice issues like race, immigration, health care, climate change--or whether they should remain neutral. Indeed, the question of museums and social justice has plagued the museum world's preeminent professional organization, the International Council of Museums (ICOM), which, since 2017, has been attempting to redefine the museum as a site for public discourse on urgent topics; amidst debate and turmoil, a possible redefinition of museums of the 21st century as sites for social justice. Examines these current controversies and events. Each module focuses on one issue, with specific case studies in some instances.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	574	Studies in Japanese Art	Critical examination of the nature and history of Japanese art, its rich heritage and its indebtedness to foreign sources.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 473 or 574
ARS	575	Approaches to Chinese Painting	Critical history of Chinese painting from Eastern Chou to 1911. Emphasis on masters, regional developments, and conceptual underpinnings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Minimum 108 hours; Senior or Postbaccalaureate Undergraduate or Graduate; Credit is allowed for only ARS 475 or 575
ARS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	585	Women in the Visual Arts	Historical study of art by women in various media; related social, political, educational issues; representation of women in art.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 485 or 585
ARS	586	Theories of Contemporary Art	Upper-level introduction to a variety of issues in contemporary art theory. Over the course of the semester, students travel through a different thematic segment each week. Topics covered include globalization, activism, relational aesthetics, art and ecology, as well as other themes that have found increased relevance as new art forms, media and theory proliferate in the 21st century.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 586 or ARS 591 (Theories of Contemporary Art)
ARS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ARS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Seniors or Post Bacc undergraduates with minimum of 108 earned hours
ARS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	710	Current Research in Art Histor	Review and critical evaluation of contemporary literature and research in art history.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Design, Environment and the Arts PhD student
ARS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ARS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	110	Drawing as Seeing and Thinking	Immerses students from a broad range of non-art disciplines in the practice of drawing. Considers and reflects on drawing in its most expanded form: as a primary tool of communication and creative problem solving, as movement, as sensory experience and as its own unique method of cognition. Divides class meetings among lectures, exercises, field excursions and opportunities for critical dialogue. Students leave with an appreciation of the unique power of mark-making and an improved understanding of its application in their lives.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Credit is allowed for only ART 110 or 194 (Drawing as Seeing and Thinking) OR Visiting University Student
ART	111	Foundation Drawing	Fundamental, technical, and perceptual skills using common drawing media and their application to pictorial organization. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art BA major or BFA major OR Visiting University Student
ART	112	2-D Design	Fundamentals of pictorial design. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art, Art-Exploratory, Minor in Studio Art, or BIS concentration in Studio Art student OR Visiting University Student
ART	113	Color	Principles of color theory as related to the visual arts. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		

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ART	115	3-D Design	Fundamentals of 3-D form. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	116	Intro to Digital Media	Concentrates on the fundamentals of digital media, including imagery, sound, video, animation, and the Web. Assignments are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques and software as they become familiar with contemporary artistic processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 116 or ART 194 (Introduction to Digital Media) OR Visiting University Student
ART	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	201	Photography I	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	HU	
ART	202	Photography I Lab	An introduction to photography, with emphasis on investigating personal, social, cultural and aesthetic concerns with the camera. Class lectures address contemporary and historical photographers and various philosophical and technical approaches to the medium. Lab sections emphasize the creative process through camera work and darkroom procedures using 35 mm film, as well as digital capturing from cell phone camera to DSLR. Students leave this class with a better understanding of the role of photographs in culture and in their own lives.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	0		Corequisite(s): ART 201
ART	204	Photography II: Black & White	Photography as an art medium with additional exploration into personal photographic aesthetics. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	205	Photography II: Color	Uses both film and digital capture to explore color photography in depth. Emphasizes computer editing and printing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	206	Digital Photography I	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of photography as a form of creative expression. With an emphasis on the student's own creative practice, covers technical, aesthetic and conceptual aspects of photography and explores how meaning is created in a photograph. Introduces basic digital editing, camera controls, selection and sequencing. Assignments cover traditional genres such as landscape, portrait and still life. Places a strong emphasis on interaction with classmates' work and receptivity to critique. Fully manual DSLR is suggested but not required for this course.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 206 or ART 294 (The Still Image in Digital Culture) OR Visiting University Student
ART	207	Digital Photography II	Through readings, lectures, demonstrations and regular shooting assignments and critique, introduces the basic concepts of digital photography as a form of creative expression. With an emphasis on the student's own creative practice, explores the ways in which the recently increased speed of creation and dissemination have led to the ubiquity of photography and how these aspects have radically altered how photographs function in today's world. Covers technical, aesthetic and conceptual aspects of digital photography and explores how meaning is created in a digital photograph. Students learn digital editing, camera controls, file formats, workflow and explores media theory in relation to digital imaging technology. Assignments cover topics such as appropriation, social media, surveillance, vernacular and ritual photography. Places a strong emphasis on interaction with classmates' work and receptivity to critique.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		
ART	211	Drawing	Continued development of technical and perceptual skills. Emphasizes materials and pictorial content. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student

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ART	214	Figure Drawing	Development of skill and expressiveness in drawing the basic form, construction, and gesture from the human figure. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	216	Contemporary Art in Practice	Investigates multidisciplinary practices of making art within a contemporary context. Encourages students to explore various methods of artmaking with emphasis on understanding that materials and actions hold meaning. Relying on principles and techniques from foundation-level classes, students learn to choose appropriate media for a particular idea and construct work that is concept driven and incorporates cross-disciplinary approaches. Students develop individual and diverse approaches to fusing traditional art disciplines with experimental, performative, spatial and digital technologies if desired.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Pre- or corequisite(s): Digital Culture (Art) major; ART 111, 112 or 113 with C or better OR ART 113 or 116 with a C or better; complete two from ART 111, 112 or 113 with C or better OR Visiting University Student
ART	217	Intro to Computer Animation	Prepares students for the exciting world of digital animation. Looks back at animation through history and how it has developed into what we understand today. Looks at history, theory, principles, practices and animation techniques. Expands the student's current knowledge of 3D digital animation and how it has changed and affected society through time. Students use learned techniques to create art in animation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 217 or ART 294 (Introduction to Animation) OR Visiting University Student
ART	218	3D Tools	Introduces 3D data capture, 3D modeling and rendering, and 3D prototyping and fabrication through creative/research activities using CNC and rapid prototyping tools. Projects are given to engage students in the technical, conceptual, and aesthetic aspects of digital media. Students employ a diverse range of techniques, software tools, and hardware in the course of making their creative/research projects, becoming familiar with contemporary artistic and engineering processes involving the use of the computer and/or other technologies. Consists of hands-on experimentation and production supplemented by slide lectures, videos, visiting artists, and academic research.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only ART 218 or 294 (3D Tools)
ART	223	Painting	Fundamental concepts and materials of traditional and experimental painting media. Emphasizes preparation of painting supports, composition, and color. Lab. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	227	Watercolor	Fundamental concepts, materials, and techniques of watercolor. Emphasizes problem solving, basic skills, composition, and color. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	231	Sculpture I	Explores sculptural forms through concepts related to basic materials. Students learn how to create original sculptures using mold-making, wood-working and sheet metal construction. Focuses on studio production, safety, aesthetic criticism and history of sculpture. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	244	Intro Interactive Environments	Introduces software programming in the context of real-time interactivity. Builds the skills and develops the confidence needed to produce interactive audiovisual environments. Primarily uses the Max 7 (cycling74.com) programming language to write code for manipulating digital images, sounds and video in real time. For these systems to be interactive (respond to human activity), uses the tools and techniques for gathering and processing real-time input from sensors such as microphones, electronics, cameras and interface devices.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only AME 244 or ART 244 or AME 294 (Introduction to Interactive Environments) or ART 294 (Introduction to Interactive Environments)
ART	253	Introduction to Printmaking	Introduces basic monotype, intaglio, relief, and related techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 113 with C or better OR Visiting University Student
ART	261	Ceramic Survey	Handforming methods, throwing on the wheel, decorative processes, and glaze application. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 112 with C or better; ART 115 with C or better OR non-Art major; minimum 45 hours OR Visiting University Student
ART	272	Intro to Metals and Jewelry	Emphasizes metal fabrication. Basic techniques of cutting, piercing, forging, soldering, and forming of non-ferrous metals.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; maximum junior standing; ART 112 with C or better; ART 115 with C or better OR Visiting University Student
ART	274	Wood I	Fundamental woodworking techniques to produce creative functional 3-D objects. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		

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ART	276	Introduction to Textiles	Explores traditional and contemporary materials and basic techniques related to fibers. Embroidery, feltmaking, dyeing, block printing, plating, 3-D structures.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better OR Visiting University Student
ART	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	300	Narrative/Non-Narrative	Explores how structure in images can be created both within the image (by setting up a picture) and by sequencing images that may or may not have had any relation when they were created. By exploring two prevalent ways in which images function in the art world—the directoral mode and sequencing mode—students gain valuable tools in terms of understanding how to construct meaning with their images. Emphasizes creating cohesive and complete sequences both narrative and non-narrative.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207
ART	301	Alternative Processes I	Recognition Alternative Processes of the inherent characteristics of nonsilver processes and their use in communicating ideas. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major with completed portfolio; ART 204 with C or better OR Visiting University Student
ART	302	Digital Photo and Video	Through screenings, readings, discussion and practical assignments, explores the differences between the still and the moving image coming from the perspective of a still photographer. How does the addition of time, sound and movement affect the way we experience images? How have the histories of photography and cinema overlapped and how are they different? How does the fact that video and film are no longer prohibitively expensive for most people affect the approach that people take to creating videos? How can photographers make engaging video using their photo skills? Looking at practitioners and learning basic video editing tools—as well as various methods for output—students create video and still images with an understanding of the intersections, variations and potential of the similar yet markedly different languages of film, video and still photography.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207
ART	304	Junior Photographic Projects	Interpretation and manipulation of light as a tool in the performance of expressive photography. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with completed portfolio; ART 204 with C or better; ART 101 with C or better; ART 201 with C or better
ART	307	View Camera	View camera and darkroom techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better
ART	308	2D Digital Animation	Advanced animation course continues the technical, conceptual and aesthetic world of 2D digital animation. In addition to craft and technique, principles of narrative, visual rhythm, character, sound and image are a primary focus. Through assignments, tutorials, discussions and critiques, students expand their knowledge of the history of animated cinema, live action cinema, visual art, games, mobile media, performance and visual culture. Students who come in with foundational animation experience find this course to be the next level in 2D digital animation. Students produce strong conceptual work that demonstrate their command of the software with attention to the rhythm, proportion, volume, color and light/dark, smartly employing formal mechanisms of story, character and motif to produce well-crafted, expressive animations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 308 or ART 394 (2-D Computer Animation) OR Visiting University Student
ART	311	Intermediate Drawing	Emphasizes composition and exploration of drawing media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 211 with C or better OR Visiting University Student
ART	312	Illustration	For the purposes of this class, to illustrate means to illuminate. The prompts challenge students to engage in storytelling and explore text/imagery relationships while simultaneously honing basic rendering skills. At times we find images to "illuminate," enhance or subvert the meaning of written language and at other times we create language as a result of creating an image. The interplay between text and images is a constant in this class.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is only allowed for ART 312 or ART 394 (Illustration) OR Visiting University Student
ART	314	Intermediate Figure Drawing	Drawing from the model with greater reference to structural, graphic, and compositional concerns. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 394 (Figure Drawing for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student

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ART	317	Advanced Digital Photography	Builds on the skills and conceptual underpinnings of previous coursework and is the final course in the required photo foundation for the Digital Photography BFA. Students build on their understanding of photography in relation to the technical, aesthetic and conceptual aspects of photography. Requires students to create a short video and create physical objects, including printed photographs and a book. Places a strong emphasis on idea development, interaction with classmates' work and receptivity to critique.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206 or 207 OR Visiting University Student
ART	320	Science & Art Botanical Design	Discover the multifaceted practice of botanical design as a science and an art form. Students exercise plant maintenance, study botanical nomenclature and postharvest care, and review theories of biophilic design, botanical wellness, ecopsychology, sociohorticulture, and ecotherapy. To learn the art behind the science, students learn to create botanical arrangements using the design process in each lab session. Explores topics including construction methodology, technique, and innovation as well as reviews the botanical design industry and its historical periods.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 320 or ART 394 (Science and Art of Botanical Design) OR Visiting University Student
ART	323	Intermediate Painting	Development of competency in skills and expression. Assigned problems involve light, space, color, form, and content. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 223 or 394 (Painting for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	325	Figure Painting	The human figure clothed and nude as the subject for painting in selected media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 214 or 223 with C or better OR Visiting University Student
ART	327	Intermediate Watercolor	Explorations of personal expression in watercolor. Continued development of watercolor skills using traditional and experimental materials and techniques. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 227 or 394 (Watercolor for Non-Majors) with C or better; minimum 2.00 GPA OR Visiting University Student
ART	331	Sculpture II	Emphasizes metal fabrication as an expressive sculptural process. Techniques in welding, cutting and bending of metals and their aesthetics. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art BIS major or Studio Art minor; ART 110 with C or better; ART 115 with C or better OR Pre- or corequisite(s): Art BA or BFA major; ART 231 with C or better if completed OR Visiting University Student
ART	332	Sculpture III	Explores diverse media with a focus on mold-making processes. Development of the sculpture portfolio. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 with C or better
ART	333	Foundry Casting Methods	Fine art and techniques of metal casting: mold making, foundry safety, finishing techniques, application of patinas, and history of casting. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better OR Visiting University Student
ART	345	Visualization & Prototyping	Studio/seminar introduces concepts of computer visualization, modeling, and rapid prototyping in an interdisciplinary manner.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Digital Art OR Intermedia student
ART	346	3-D Computer Imag & Animation	Focuses on the modeling, texturing, surfacing, lighting and rendering portions of the 3-D animation pipeline. Covers poly modeling, sculpting, edge flow, UV texturing, materials and PBR workflows, properties of lighting, and efficient rendering techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3	CS	Prerequisite(s): Film and Media Production BFA major or ART 217 with C or better OR Visiting University Student
ART	348	Animation Motion Studies	Focuses on using the principles of animation in 3-D and open source, pre-rigged characters for animation and dialog studies. Course studio format follows similar industry standard of dailies for frequent feedback and to encourage progress.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Film and Media Production BFA major or ART 346 with C or better OR Visiting University Student
ART	351	Intaglio I	Introduces concepts and techniques of intaglio processes, including non-acid and acid techniques such as drypoint, line etch, aquatint, photo etching; introduces multiple plate printing ala poupee wiping, chine colle, and basic color. Idea-generating exercises include visual signifiers of identity, democratic multiple, time and space, the disembodied gaze, and reconsidering beauty. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better
ART	352	Lithography I	Monochromatic and color planographic printmaking utilizing stone and aluminum plate processes. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 253 with C or better, or Studio Art Minor: ART 110 with C or better; ART 112 or 113 with C or better

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ART	354	Screen Printing I	Introduces paper, direct, and photographic stencil techniques. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; two from ART 111, 112, 113 with C or better OR Studio Art minor; ART 110 with C or better; ART 112 or 113 with C or better OR Visiting University Student
ART	360	Ceramic Throwing	Design analysis and production of functional pottery. Emphasis on throwing techniques, surface enrichment, and glaze application.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	364	Ceramic Handbuilding I	Search for form using handbuilding techniques. Kiln firing and related problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 42 hours OR Visiting University Student
ART	365	Ceramic Handbuilding II	Continuation of ART 364 with an additional focus on large-scale works, surface treatments, and glaze decoration with related kiln firing applications.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; ART 364 with C or better OR BIS Studio Art student or Studio Art student; ART 364 with C or better OR Visiting University Student
ART	367	Ceramic Vessels	Focuses on the exploration and creation of ceramic vessel forms utilizing a variety of technical approaches. Students develop a personal direction through guided assignments focusing on both historical/contemporary vessels, function vs. design, and various forming processes. Students should have previous experience with either wheel-throwing or hand-building techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 367 or ART 394 (Ceramic Vessels)
ART	372	Casting and Jewelry Techniques	Covers lost wax casting for jewelry scale work and alternative casting methods and mold making as well as other techniques such as chain making and marriage of metals.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better
ART	373	Form Emphasis in Metals	Covers forming non-ferrous metals using techniques such as anticlastic and sinclastic forming, raising, fold forming. Projects focus on hollow forms using these various techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better
ART	374	Wood II	Individual and directed problems in wood related to the production of unique functional art objects. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better OR Visiting University Student
ART	376	Weaving and Dyeing	Focuses on loom-controlled woven structures in conjunction with a variety of dye techniques. In the investigation of these new practices, an emphasis is placed on technical issues, historical trajectories and contemporary contexts.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 276 with C or better OR Fashion BA major: FSH 201 with C or better OR All other majors: ART 110, 112, 113, 115, or 116 with C or better OR Visiting University Student
ART	377	Textile Design	Explores a variety of surface design processes such as sewing, embroidery, dyeing and interlacing, as well as the construction of collage, piece work and creatively fabricates sculptural forms with their newly soft design materials.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276 with C or better or FSH 201 with C or better OR Visiting University Student
ART	378	Dig Text	Starting in the 19th century with advent of the Jacquard loom, which is often noted as the inspiration for the modern day computer, explores the interwoven history and practice of textiles and technology. Taking theoretical and practical approaches, works through textile techniques, such as knitting, printing and wearables, as well as research and readings. Emphasizes applying the information presented to support individual bodies of work.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s) C or better: ART 110 or 111; ART 112, 113, 115, or 116; min 2.00 GPA OR Dig Cult stdnt; AME 111; AME 112 or 130; min 2.00 GPA OR Fashion maj; FSH 201; Credit for only ART 378 or 394 (Digital Textiles) OR Visiting University Student
ART	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ART	400	The Photobook	Photographers have long seen the photobook as an excellent way to showcase their work. From the mid 1960s art photographers have used self-publishing through methods as simple as a photocopier to disseminate their work. Recent advances in the accessibility of high-quality reproduction capacities have resulted in an explosion of flexible and creative ways for photographers to execute their ideas and contribute to a wide range of conversations. Practical and theoretical course on the photobook. Students learn about the history of the photobook and the multitude of contemporary applications from the major photography publishers such as Aperture, through to the small press and self-publishing and the exciting world of art book fairs. Students also create a handmade photobook and create and order a print-to-order book of their own work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student

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ART	402	Traditional Genres Dig Photo	Through practical assignments, lectures, readings, discussion and critique, investigates traditional photographic genres such as portrait and landscape. Students create works in the genre in question and contextualize these images in historical and contemporary art. Addresses such questions as what defines a genre and the social, political and cultural impacts these genres have had on photography and art. Also addresses how genres have been transformed with the advent of digital technology explores how this affects images in a broader cultural and social history. Emphasizes the students' work and a final portfolio of portraits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	403	Senior Photographic Projects	Technical and philosophical refinement of personal aesthetic with various photographic media. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better
ART	404	Portraiture Photography	Photographing people. Critical discussions and slide lectures on issues in portraiture. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 204 with C or better; ART 101 with C or better OR ART 201 with C or better OR Visiting University Student
ART	406	New Genres in Digital Photo	Explores the ways in which contemporary technology and the key changes--ubiquity, speed and reproducibility--have spawned new genres in photo-based art. Explores these emerging and changeable genres and examines the potential they present for creative expression and in-depth conversation about new ideas. Defines these new genres: selfie sticks, Instagram, screenshots from Google Streetview or remote cameras that we control from our home computer. Students are given weekly assignments and at the end of the course create a project within one of the new genres.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	407	Digital Photography Capstone	Culminating class of the online Digital Photography degree. It is organized around a single, major self-directed project. Students will submit work once a week for critiques and will participate in their classmates' critiques as well. Classmates and instructor will guide each student towards the best execution of their vision. Students will complete course with a portfolio of images that may be realized in a variety of forms including but not limited to: an online gallery, a website, or a printed portfolio or a photobook. Students will also write an artist statement to accompany the work and conduct research where there is an audience for their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317
ART	408	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 3.00 GPA; minimum 45 hours. Credit is allowed for only ART 408 or ART 508
ART	409	Photographic Exhibition	Care of photographic prints, print presentation, and exhibition. Practical experience in gallery operations. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	410	Landscape Photography	Photographing landscapes. Critical discussion and presentations on issues in landscape photography. May be repeated for credit. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		
ART	411	Advanced Drawing	Visual and intellectual concepts through problem solving and independent study. Emphasizes the individual creative statement. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 211 with C or better; ART 311 with C or better OR Visiting University Student
ART	412	Advanced Techniques	Highly technical course consists mainly of technical applications, readings, quizzes and discussion. Focuses on learning advanced image-editing software such as Photoshop, and photo management and manipulation software. Covers montage and color management systems including profiling for color printing and monitors. Students also learn about using digital backs on medium format and view cameras.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 206; ART 207; ART 317 OR Visiting University Student
ART	414	Advanced Figure Drawing	Various media and techniques on an advanced level. The human figure as an expressive vehicle in various contexts.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 314; Credit is allowed for only ART 414 or ART 514 OR Visiting University Student

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ART	415	Digital Compositing	Photographically based lab/lecture course designed to address ideas and concepts using digital montage/manipulation as an expressive medium. Emphasizes both assignments and self-defined projects. Includes discussion of technological theory and the extent to which digital imaging has affected the field of photography in the fine arts and professional arenas. Introduces new and more advanced techniques, but students also review retouching, coloration, enhancement and montage techniques. Covers the basic principles of pattern design in relationship to photography and the use of the computer as a pattern generator.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 415 or ART 494 (Digital Compositing) OR Visiting University Student
ART	417	Storyboard & Narrative Sequenc	Focuses on the representation and manipulation of time, cause and effect, and viewpoints in narrative sequences. Designed for students interested in live action film, animation, video gaming and comic book formats. Although storyboarding is typically considered a preparatory stage, students are to treat each project as a finished piece, thereby requiring an amplified level of attention and understanding with a special emphasis on consistency and coherence.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or 111; Credit is allowed for only ART 417 or ART 494 (Storyboarding and Narrative Sequencing) OR Visiting University Student
ART	418	Alternative Processes II	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 418 or ART 494 (Alternative Processes II) or ART 518 or ART 598 (Alternative Processes II)
ART	423	Advanced Painting	Further exploration of techniques and concepts of painting.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 323 with C or better; min 2.00 GPA OR All other majors: ART 110 with C or better; ART 112, 113, 115, or 116 with C or better; min 2.00 GPA; Credit is allowed for only ART 423 or ART 523
ART	424	Stop Motion Animation	Hands-on studio focuses on creating original stop motion animations. Covers the theory of timing for animation, how to plan and collaborate on animations and about the history of the art form. In-class activities include demonstrations, project work, and viewing of and discussion of stop motion animated films. Homework includes hands-on animation as well as reading, writing and viewing of films.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 424 or ART 494 (Stop Motion Animation) OR Visiting University Student
ART	425	Intermediate Figure Painting	The human figure clothed and nude as the subject for painting in selected media. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 325 with C or better; Credit is allowed for only ART 425 or ART 525
ART	427	Art on Paper	Advanced techniques, concepts, and processes with water media and mixed painting and drawing media on paper.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): two from ART 111, 112, 113, 115, 116 with C or better OR ART 110 with C or better; Credit is allowed for only ART 427 or ART 527 OR Visiting University Student
ART	428	Video & Sound as Sculpt Mat	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry Pi. The latest developments in video and sound for sculpture and sculpture for video and sound.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art BA or BFA major; ART 231 with C or better; Credit is allowed for only ART 428 or ART 494 (New Systems-Sculpture) or ART 528
ART	429	Painting&Drawing Rsrch Studio	Advanced-level students produce a series of drawings, paintings and/or mixed media works based around their chosen theme. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Expects students to have a high level of motivation, a consistent work ethic, and a desire to advance their creative practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Painting and Drawing BFA major; ART 311, 314, 323, or 425 with C or better; minimum 2.00 GPA; Credit is allowed for only ART 429 or ART 494 (Painting and Drawing Studio Capstone)

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ART	430	Adv Sculpture: Materials&Tech	Encourages individual investigation in sculpture with an emphasis on the development of a personal approach to materials and techniques. Students have acquired a strong background in the basic techniques and materials in sculpture in previous classes and now are working toward the development of a portfolio or body of work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331 OR Visiting University Student
ART	431	Special Problems in Sculpture	Development of a personal approach to sculpture. Emphasis on form, individual problems, and related color technology. Professional practices and presentation. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231, ART 331 and 332 with C or better
ART	432	Neon Sculpture	Techniques for creating neon in an art context. Glass tube bending and fabrication. Construction of artworks utilizing light-generating gasses. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 231 with C or better or BIS Studio Art emphasis or Studio Art minor; ART 110 and 115 with C or better
ART	433	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Requires participation in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Provides a history of the use of cast metal in the visual arts and an understanding of how casting processes can be applied to contemporary sculptural concepts. Requires participation in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 331 with C or better OR Non-art majors; ART 231 with C or better OR Visiting University Student
ART	434	Adv. Sculpture:Context/Content	Studio-based class offers an opportunity for guided individual study with an emphasis on content, context and professional practices. Students work on developing a series of related works on a theme of their choosing. Assignments help students gain a greater understanding of the themes and ideas that are important in their art and expand their awareness of historical and contemporary artist working along similar lines. Requires students to develop a packet for self-promotion including a resume, portfolio and artist statement and to submit these materials to a competitive exhibition, commission, residency, scholarship or similar opportunity.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 331
ART	435	Foundry Research Methods	Research in foundry techniques.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	436	Architectural Sculpture	Sculptural concepts as related to architecture and other man-made environments. Scale drawing, models and relief sculpture. Students learn to produce proposals for large-scale and public commissions.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art Majors: ART 331 with C or better, or Non-art majors: ART 231 with C or better
ART	438	Moving&Interactv Sys Sculpture	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 231 with C or better; Credit is allowed for only ART 438 or ART 538 OR Visiting University Student
ART	439	Studio Inquiry: Pract/Culture	Investigates how intermedia practice can expand discourse within contemporary art, life and society. Encourages investigation of visual art, conceptual art, digital art, emergent media, installation, performance, art/life practices, social art practice, and with emphasis on research, production and theory. Students expand their ability to assess interdisciplinary strategies. Through reinforcing artistic rigor, students deepen their ability to employ intermedia methods as artistic communication, to express a personalized point of view.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major or Digital Culture (Art) BA major; ART 111, 112, or 113 with C or better OR Studio Art minor or BIS Studio Art emphasis; ART 110; ART 116; Credit is allowed for only ART 439 or ART 539 OR Visiting University Student
ART	440	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The Experimental Video Art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 116 with C or better, or Art minor or non-Art major with minimum 45 hours OR Visiting University Student

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ART	441	Video Art	Utilizing video and audio equipment essential to the production of broadcast quality video art. 2 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): Art portfolio completed; corequisite ART 440
ART	442	Art and Community	Explores public and socially engaged art practice that is often collaborative, participatory and involves developing relationships with people and communities as a fundamental material of the work. Many social practice artists aim to initiate real-world change through artistic experimentation, activism, social intervention or interpretation of community stories, tragedies and celebrations.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 442 or ART 542 OR Visiting University Student
ART	443	Performance Art	Performance art is the act of doing. It is not about representing, recounting, re-enacting or acting. It is an art form of direct action. Students work with the elements of time, space and the body as material to speak to cultural histories and collective contemporary experience while learning critical thinking skills and gaining knowledge about historical and contemporary performance artists. Students create performances and context-specific projects by making connections between art, life and public space. Since performance art and live art cannot be separated from the body who makes it, this course continually investigates the meaning and significance of performance art. For instance, what distinguishes an action as art? Is it different from an everyday action like brushing your teeth? What makes it different? When is a job or labor a performance? How does a person (artist or audience) know when the art begins or when it ends? All performances are documented and presented in video or still photography examples online. Select works are posted on the Live Art Platform website at the end of the semester.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Studio Art minor or BIS Studio Art emphasis; ART 110 with C or better; ART 116 with C or better OR Art major OR Performance and Movement BA major; Credit is allowed for only ART 443 or ART 543 OR Visiting University Student
ART	444	Documentary Video Art	Students investigate documentary video as an art form with close attention to the aesthetic as well as the informational content. Emphasizes the intersection between standard documentary modes and experimental video art. Researches and discusses contemporary and historical materials in both documentary and video art. Emphasizes concept and content development, in preparation for the production and post-production of a documentary video art work by each student.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 444 or ART 494 (Documentary Video Art) or ART 544 or ART 598 (Documentary Video Art) OR Visiting University Student
ART	445	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques, including image capture, film generation and analog processes, and digital and inkjet printing.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): 50 minimum hours; credit is allowed for only ART 445 or 494 (Digital Process for Print)
ART	449	Computer Animation and Video	Integrates 3-D fine arts animation with video and compositing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Film (Film and Media Production) BA or Film (Filmmaking Practices) BA or Film and Media Production BFA major or ART 217 with C or better OR Visiting University Student
ART	451	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 351 with C or better; credit is allowed for only ART 451 or ART 551
ART	452	Advanced Lithography	Continuation of ART 352. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student or completion of portfolio milestone; ART 253 and ART 352 with C or better
ART	453	Experimental Printmaking	Alternative methods of working with print techniques, including installations, actions or performances, and other nontraditional formats.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): at least one of the following: ART 351, 352, 354, 355, 456, 459, 477, 478, 494 (Relief), or 394 (Photolithography) with C or better; Credit is allowed for only ART 453 or ART 553
ART	454	Advanced Screen Printing	Continuation of paper, direct, and photographic stencil techniques. 6 hours a week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 354 with C or better OR Visiting University Student

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ART	455	Artists' Books	Concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic edditioning and low-tech printing techniques while simultaneously working on studio assignments that challenge them on a conceptual level.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 455 or ART 494 (Artists' Books) or ART 555 OR Visiting University Student
ART	456	Letterpress Studio	Equipment, techniques and applications of letterpress printing. Students hand set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 253 with C or better OR non-art major with 56 hours; minimum 2.50 GPA; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	457	Fine Printing & Bookmaking II	Continuation of ART 456. Bookbinding, book design and printing, advanced typography, theory, and presswork. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 253 with C or better; ART 456 with C or better; Credit is allowed for only ART 457, ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	458	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student with ART 112 with C or better, OR non-Art majors with 56 minimum credit hours and minimum 2.50 GPA; Credit is allowed for only ART 458 or ART 558
ART	459	Monoprinting	Nonmultiple printed image using a variety of technical approaches. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BA or BFA Art major, minimum 45 hours; or BIS Interdisciplinary Studies (Studio Art concentration) or Studio Art minor; ART 110, 112, 113, 115 or 116 with C or better
ART	460	Ceramic Clay	Research into various clay body formulations, local natural materials, slip glazes, and engobes.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 with C or better; Pre- or corequisite(s): ART 360 and ART 364 with C or better if completed
ART	461	Animation Capstone	In this studio course, advanced-level students produce a substantial animation project of their own devising. This project could be a very short film individually produced in any animation medium, or a more substantial film produced in collaboration with other students. Students apply their technical and conceptual abilities developed in previous courses into innovative statements of individual expression. Students should enroll in the class with a clear idea about the project that they want to undertake.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art (Animation) BFA major; ART 308 with C or better; ART 346 with C or better; ART 417 with C or better; minimum 2.00 GPA
ART	463	Ceramic Glaze Research	Glaze calculation and formulation using various glaze colors and surfaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major; ART 261 with C or better; Credit is allowed for only ART 463 or ART 563 or ART 598 (Ceramic Glaze Research) OR Visiting University Student
ART	466	Special Problems in Ceramics	Emphasis on personal expression within structure of seminars, critiques, and studio work. Professional methods of presentation/documentation of work. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 261 and ART 364 with C or better
ART	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	472	Adv Jewelry Surface Techniques	Covers jewelry forms and techniques including surface embellishment such as granulation, keum-boo and filigree to be used as tools for aesthetic expression and expand student awareness of historical and contemporary jewelry/metalwork.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 and ART 372 with C or better

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ART	473	Advanced Metals & Mechanisms	Covers new techniques and develops existing skills in non-ferrous metal forming and mechanism fabrication while further refining fitting and finishing techniques, incorporating concept with craft and emphasizing professional practices/portfolio development.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 272 with C or better; ART 373 with C or better; Credit is allowed for only ART 473 or 598 (Adv. Metals & Mechanisms)
ART	474	Advanced Wood	Extended experience and advanced techniques in the use of wood to create functional works of art. 6 hours a week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 274 with C or better; ART 374 with C or better OR Visiting University Student
ART	476	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art student; ART 276 with C or better; ART 376 with C or better
ART	477	Printed Textiles	Techniques for screen printing on fabric exploring pattern as a compositional element. Various stencil methods including photographic processes.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major: ART 276 with C or better; ART 377 with C or better OR Fashion BA major: FSH 201
ART	478	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 276, ART 377 and ART 477 with C or better; Credit is only allowed for ART 478 or ART 578
ART	479	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): Art major or Studio Art minor; ART 276 with C or better; Credit is allowed for only ART 479 or ART 579 or ART 598 (3-D Fibers)
ART	482	Senior Exhibitions/Portfolio	Capstone course required of all BFA studio art majors. Students participate in a group exhibition and focus on professional practices, including exhibition display and advertisement, career planning, and development of a professional packet with artist statement, CV, and digital portfolio.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): BFA student; minimum 100 hours; Credit is allowed for only ART 482 or ART 494 (Senior Exhibition/Portfolio) OR Visiting University Student
ART	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): Art student
ART	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
ART	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	STO	N	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ART	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ART	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ART	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): Art student
ART	501	Cross-Practice Critique	Engages graduate students in deep, sustained critical discussion about artwork made by students in the class. Students investigate together the process(es) of critiquing artwork and consider and discuss the underlying assumptions and values they bring to this method of communication and pedagogy. Helps students develop and improve their critical voice at whatever level they are at, including the ability to receive and accept critical feedback of their work. Encourages students to hone their sense of personal agency in the context of "the crit."	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate
ART	508	Experimental Film	Facilitates the exploration of 16 mm motion picture film as material and methodological fodder for artists. Students use original, found, and hand-altered footage to create projects of their own design. Covers basic techniques including camera operation, film exposure, and analog editing practices. Explorations also include in-class experiments, readings, discussions and screenings. For upper-division undergraduate and graduate art students attracted to the material and theoretical issues embodied in film and who are curious about how film might inform their own ongoing advanced artistic pursuits. Graduate level focuses on the development of a personal approach.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ART 408, 494 (experimental Film), or ART 508, or ART 598 (Experimental Film)

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ART	514	Graduate Life Drawing	Advanced study of the human figure as an expressive vehicle in various contexts. Graduate level focused on the development of personal approach. Timed poses of short and long duration with emphasis on using the figure to enhance the students individual research. Art historical component will be included to enable the student to fit themselves into the context of the use of the figure as it relates to the study of the history of art.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 414 or ART 514
ART	518	Alternative Processes	Despite the convenience of modern photographic technology, many artists prefer to enrich their methods with the tactile wonders of the traditional processes that this course introduces. Part two of Alternative Processes with a finer focus on project-based work. Explores salt print, 3-color gum bichromate, wet plate collodion, albumen printing processes, daguerreotypes, as well as 21st-century alternative processes. Provides new opportunities for digital/analog hybrid processes and alternative ways of presentation, such as videos, photo sculptures and performances. Involves intensive studio work, lecture and critique sessions. Students must have a film or digital camera to produce new images for the projects assigned in this course. Also requires a basic understanding of Adobe Photoshop for digital negative outputting. Students are expected to share ideas, techniques and their photographic experimentations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 418 or ART 494 (Alternative Processes II) or ART 518 or ART 598 (Alternative Processes II)
ART	523	Graduate Painting	Concentrates on formal and conceptual skills and explores a variety of topics, including historical and contemporary painting issues, visual literacy, critical thinking, and professional practices.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR Senior or Postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 423 or 523
ART	525	Advanced Figure Painting	Advanced study of the human figure clothed and nude as the subject for painting in selected media. Graduate-level study focuses on the development of personal expression.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 425 or ART 525
ART	527	Art on Paper	Exploration focused on conceptual and technical approaches combining mixed media painting and drawing on paper and related surfaces.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 427 or ART 527
ART	528	Video & Sound as Sculpt. Mat.	Students learn to incorporate video and sound into sculptures and installations. Covers basic video and sound capturing and editing, but emphasizes new techniques for controlling and presenting video and sound: Max/MSP programming language, Arduino microcontrollers and Raspberry Pi. The latest developments in video and sound for sculpture and sculpture for video and sound.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 428 or ART 528 or ART 598 (New Systems Sculpture)
ART	529	Experimental Video Art	Explores creative possibilities through the production of experimental video art works referencing new approaches to concept, theory and art practice. The experimental video art curriculum emphasizes the use of metaphor and simulation to depict reality and linear story telling. Students study relational aesthetics, content, stylistic formats and presentation issues as they reference time-based media. The textbook entitled, "Video Art" by Michael Rush serves as a research tool for experimentation. The technical component concentrates on the use and operation of equipment for video recording, audio mixing, lighting, video editing and computer graphics. Students create stand-alone video works, video installations, multimedia time-based performances, through individual and group projects. Graduate students create a collaborative Video anthology.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 529 or ART 598 (Experimental Video Art) or ART 598 (New Media Concepts)
ART	530	Digital Compositing	Fine arts digital compositing of computer animation, video, and video editing of composites with audio.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR senior OR postbaccalaureate undergraduate with minimum of 108 earned hours
ART	532	Neon Sculpture	Emphasizes techniques for creating neon in an art context, including glass bending and fabrication.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 532 or ART 598 (Neon Sculpture)

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ART	533	Foundry Casting Methods	Thorough and directed course for the professional preparation of sculptors. Students are expected and required to participate in all aspects of the foundry process, including serving on both a casting and foundry process maintenance team. Students deepen their knowledge of the history of the use of cast metal in the visual arts and understanding of how casting processes can be applied to contemporary sculptural concepts, participating in special projects such as exhibitions, iron casting, and field trips to local foundries as the semester course schedule dictates.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 533 or 598 (Foundry Casting Methods)
ART	538	Mvg & Intractv Systms in Sculp	Explores the use of Arduino microcontrollers to control light, sound, interactivity and movement in sculptures and installations. Covers basics of electronic circuits, mechanics and audio electronics. Also covers historical and contemporary artists who incorporate technology into their work.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 438 or ART 538 or ART 598 (Experimental Systems in Sculpture)
ART	539	Studio Inquiry: Pract/Culture	Investigates how intermedia practice can expand discourse within contemporary art, life and society. Encourages investigation of visual art, conceptual art, digital art, emergent media, installation, performance, art/life practices, social art practice, and with emphasis on research, production and theory. Students expand their ability to assess interdisciplinary strategies. Through reinforcing artistic rigor, students deepen their ability to employ intermedia methods as artistic communication, to express a personalized point of view.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 439 or ART 539
ART	540	Visualization and Prototyping	Explores advanced concepts of computer visualization, modeling and prototyping in an interdisciplinary manner. Looks at "visualization" quite broadly—from 2D visualizations such as graphs and maps, to tangible 3D models, to dynamic and immersive 4D systems. Engages a variety of approaches to 3D data capture and modeling. Prototypes original designs—objects, assemblies, and systems—using 3D computer modeling techniques, desktop and enterprise level 3D printing, and novel systems for experiencing time and space, including stop motion film and AR/VR. Theoretical and historical lecture/discussion are supplemented with visiting artists, engineers, scholars and field trips. Students must be familiar with computer graphics applications and should have experience with 3D modeling applications.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 540 or ART 494 (Visual Prototyping) or ART 598 (Visual Prototyping)
ART	542	Art and Community	Through studio practice, research and presentations, explores intermedia social art practice, public practice, art/life practice, relational aesthetics, community-based projects, and other critical theories and conventions that engage art and community. Graduate students, in conjunction with the instructor, create their own workplan for the course.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 442 or ART 542
ART	543	Performance Art	Performance art is the act of doing. It is not about representing, recounting, re-enacting or acting, or but simply doing. It is an art form of direct action. Students work with the elements of time, space, and the body as material to speak to cultural histories and collective contemporary experience while learning critical thinking skills and gaining knowledge about historical and contemporary performance artists. Students create performances and context-specific projects by making connections between art, life and public space. Since performance art/live art cannot be separated from the body who makes it, this course continually investigates the meaning and significance of performance art. For instance, what distinguishes an action as art? Is it different from an every day action like brushing your teeth? What makes it different? When is a job or labor a performance? How does a person (artist or audience) know when the art begins or when it ends? All performances are documented and presented in video or still photography examples online. Select works are posted on the Live Art Platform website at the end of the semester.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 443 or ART 543

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ART	544	Documentary Video Art	Students investigate documentary video as an art form with close attention to the aesthetic as well as the informational content. Emphasizes the intersection between standard documentary modes and experimental video art. Researches and discusses contemporary and historical materials in both documentary and video art. Emphasizes concept and content development in preparation for the production and post-production of an 8-10 minute documentary video art work by each student. Each student's documentary video art work is archived on the "ASU Documentary Video Art" Vimeo account that is viewable by the public. Each student produces a 4-minute excerpt of the longer 8-10 minute documentary for purposes of screening it at the Scottsdale Museum of Contemporary Art.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 444 or ART 494 (Documentary Video Art) or ART 544 or ART 598 (Documentary Video Art)
ART	545	Digital Processes for Print	Introduces digital applications and processes as they relate to all areas of photo-mechanical printmaking processes. Course is comprised of three smaller sections to give a broad overview of possibilities and how they relate to analog printmaking techniques: image capture, film generation and analog processes, and digital and inkjet printing.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 545 or 598 (Digital Processes for Printmaking)
ART	550	Photolithography	Covers various photolithography processes including black and white, multiple color, and CMYK photo reproduction techniques, looking at the transformation of the photo image into print and the nature of printed photographic images.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 550 or ART 598 (Photolithography Prints)
ART	551	Advanced Intaglio	Gives students the opportunity to further develop their skills with intaglio printmaking techniques. Primary areas of research include image development, multiple plate and color printing. Additional techniques include lift grounds, spit bite aquatint, white ground, and viscosity printing. Develops sharper critical responses, both aesthetically and conceptually, to their own work, as well as the work of other artists.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or post-baccalaureate undergraduate with minimum of 108 earned hours; credit is allowed for only ART 451 or 551
ART	553	Experimental Printmaking	Focuses on the development of concepts in printmaking beyond the traditional two-dimensional image on paper that is contained in a portfolio or frame. Explores alternative techniques and materials, methods of extending the print beyond 2 dimensions, and expanding the concept of what is a print. Students are encouraged to understand printmaking within the wider context of contemporary art, especially those directly related to the student's main artistic emphasis (if not printmaking).	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; Credit is allowed for only ART 453 or ART 553
ART	554	Graduate Screenprinting	Focuses on the development of screenprinting techniques and the ability to utilize these techniques as an expressive visual method of exploring and developing individual research concepts.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; credit is allowed for only ART 554 or 598 (Advanced Screen Printing)
ART	555	Artists' Books	Graduate-level introduction to concepts, materials, techniques and structures related to book arts. Explores a variety of traditional and nontraditional binding structures, basic editing and low-tech printing techniques while simultaneously working on studio assignments that challenge on a conceptual level.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 555 or ART 598 (Artists' Books) or ART 455
ART	556	Letterpress Studio	The equipment, techniques and applications of letterpress printing. Students hand-set type and create photopolymer plates and are encouraged to integrate the tactile quality of letterpressed type and image with other media. Discusses conceptual and material aspects of letterpress.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 456 or ART 556 or ART 598 (Fine Printing and Bookmaking I)
ART	557	Fine Printing & Bookmaking	Continuing study of letterpress in fine art--the book arts--with emphasis on the book.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 457 or ART 557 or ART 598 (Fine Printing and Bookmaking II)
ART	558	Paper Studio	The equipment, techniques and applications of papermaking, exploring both traditional sheet forming, paper pulp painting as well as sculptural paper.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 458 or ART 558

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ART	559	Monoprinting	Investigates monoprint/monotype printmaking and its aesthetic possibilities. Students acquire basic and advanced skills in the medium through demonstrations, problem solving exercises, and experimentation.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum 108 hours; credit is allowed for only ART 559 or 598 (Monoprinting)
ART	563	Ceramic Glaze Research	Focuses on an investigation into the science and art of clay and glazes and a process of exploration of materials and surfaces, which continues to evolve with the students' evolving creative expression. The first assignments help students choose a direction to investigate for their own artwork. Each student selects a particular glaze to focus on during the term. Investigates ways of altering and improving recipes, focusing on one particular glaze quality at a time. By the end of the term students understand their glaze focus extensively and know how to go about altering all glaze types for special effects and required changes.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 463 or ART 563 or ART 598 (Ceramic Glaze Research)
ART	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
ART	576	Advanced Textile Construction	Expanding on technical knowledge of knit and woven structures, this course emphasizes the creation of a body of work. The materialization ranges from the functional to the formal to the conceptual depending on one's research trajectory within his or her program of study.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 476 or ART 576 or ART 598 (Woven Structures)
ART	578	Advanced Surface to Form	Broadening knowledge of surface design and the construction of 3D structures, this class presents advanced explorations in embroidery, dyeing and quilting.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 478 or ART 578 or ART 598 (Advanced Surface Design)
ART	579	3D Fibers:Construction&Content	Explores hand-constructed fiber techniques through the context of the history and communities from which they came, as well as contemporary applications. Emphasizes research and the development of one's work through studio and social practice.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ART 479, 579 or 598 (3D Fibers)
ART	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours

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ART	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student or senior or postbaccalaureate undergraduate with minimum of 108 earned hours
ART	621	In Practice	Advanced study, 3 hours a week each section.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	Z2	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ART	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-12		
ASB	100	Introduction to Global Health	Current global health crises, challenges; tools for describing health and disease; ecological, cultural, social, historical, political-economic factors; comparative health systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Credit is allowed for only ASB 100 or SSH 100 OR Visiting University Student
ASB	101	Anth: Understanding Human Diversity	Provides an integrated understanding of biological, historical, and cultural evolutionary processes that account for human variation. Specifically examines how humans evolved and how they obtained the characteristics that make us a unique species. Considers cultural and biological models of cooperation, resource acquisition and distribution, sex and marriage, parenting, conflict and warfare, political structures, power and status, sex roles, ritual, religion, and language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	102	Intro to Cultural Anthropology	Introduces concepts and methods of sociocultural anthropology, with illustrative materials from a variety of communities in a globalizing world. Explores the concept of culture and examines a variety of social, political and economic dimensions of how humans organize their lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
ASB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	202	Imm & Ethnic Relations in US	The ethnic and social consequences of international migration with a focus on the United States. Examines the impact of immigration on both American society and immigrant ethnic minorities over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only AFR 202 (or AFS 202) or ASB 202
ASB	210	Human Sexuality: Anth Perspect	Examines the sexual nature and behavior of humans from both a biological and an anthropological point of view across various cultures around the globe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	211	Women in Other Cultures	Cross-cultural analysis of the economic, social, political, and religious factors that affect women's status in traditional and modern societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	
ASB	220	Expressive Culture Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 220 or TCL 230 OR Visiting University Student
ASB	222	Buried Cities and Lost Tribes	Archaeology through its most important discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	223	Aztecs, Incas and Mayas	Archaeological and historical study of the three best-known ancient cultures of Mesoamerica and South America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	
ASB	230	Beginning Social Research	Introduces basics of social research design; fosters independent thinking and critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	

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ASB	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introduction to Evolutionary Medicine) OR Visiting University Student
ASB	252	Sports and Culture	Cross-cultural examination of symbolic and social dimensions of sports past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	
ASB	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Credit is allowed for only ASB 272 or SOS 272
ASB	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
ASB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 300 or SSH 300 OR Visiting University Student
ASB	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
ASB	302	Ethnographic Field Study	Fieldwork study of cultural adaptation through ethnographic research methods and local culture. Taught in Latin America or other international locations.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 102, ASB 222, ASB 223, or ASM 104; ENG 101, 105, or 107 with C or better OR Visiting University Student
ASB	305	Poverty and Global Health	From perspectives of anthropology and allied fields, explores critical, social justice, and ethical issues in health care, research, and disparities. Focuses on vulnerable and special populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 305 or SSH 305 or WST 305 OR Visiting University Student
ASB	310	Precolonial Africa	In-depth course study of contemporary Africa, providing thorough examination of the continent's pre-colonial history, particularly before 1900. The course will study the continent and its people, the way the history of the continent has been interpreted by non-Africans, how the continent's anatomy has affected historical development, and the methodology and interdisciplinary scholarship in the study of Africa	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 300 (or AFH 300) or ASB 310
ASB	311	Prin of Social Anthropology	Comparative analysis of domestic groups and economic and political organizations in primitive and peasant societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	
ASB	316	Money and Culture	Using the fundamentals of economic anthropology, investigates how culture shapes our relationship to money and decision making. Provides a foundation for thinking about how production, exchange and consumption can be explained by looking at human behavior, thought and culture, and encourages students to apply anthropological knowledge to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better
ASB	319	The North American Indian	Archaeology, ethnology, and linguistic relationship of the Indians of North America. Does not include Middle America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: ASB 102, ASB 222, or ASB 223
ASB	322	Peoples of Latin America	Indigenous, mestizo, and national cultures, rural and urban peoples in the region that today we call Latin America. Covers historic and contemporary events and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	325	Peoples of Southeast Asia	Cultural-ecological perspective on the peoples of mainland and insular Southeast Asia. Subsistence modes, social organization, and the impact of modernization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	G	
ASB	326	Human Impacts on Ancient Envir	World survey of successful and unsuccessful ancient societies and their impacts on the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	

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ASB	327	Disaster!	Examines the causes of disasters, such as famines and pandemics, throughout human history. Explores cases in which social responses to disaster have helped people survive or led to their demise. Through hands-on activities, students gain experience with popular tools to understand human responses to disasters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; ASB 102 with C or better or minimum 45 hours OR Visiting University Student
ASB	330	Understanding Archaeology	In-depth study and critique of theories and methods for reconstructing the lives of prehistoric peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	333	Frauds, Myths and Mysteries	Depictions of archaeology in popular culture are full of dubious tales of ancient extraterrestrials, giants and widespread scientific conspiracy. Explores such fantastic claims and learn how archaeologists separate plausible arguments from pseudoscience. Critically examines how and why such pseudoscientific claims develop and take hold of the public imagination.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G	Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 333 or ASB 394 (Myth Busters) OR Visiting University Student
ASB	335	Ancient Ruins of the Southwest	Archaeological exploration of the the major cultural developments in the prehispanic Southwest, including Mesa Verde, Chaco Canyon, Mimbres, Hohokam and Rio Grande.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H & C	Prerequisite(s): ASB 102, 222, or 223 or minimum 45 hours OR Visiting University Student
ASB	336	African Art	Anthropological perspective of ancient visual art traditions of Africa. In-depth studies focus on several important themes and case studies that are pivotal to the understanding of the rich and diverse artistic heritage of the African continent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU & G	Prerequisite(s): AFR 200 (or AFS 200) or ASB 102 or minimum 45 hours; Credit is allowed for only AFR 336 (or AFH 336) or ASB 336
ASB	337	Pyramids and Hieroglyphs	Preconquest cultures and civilizations of Mexico. The Aztecs, Mayas, and their predecessors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(HU or SB) & G & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339 OR Visiting University Student
ASB	340	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 340 or SOC 328 OR Visiting University Student
ASB	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
ASB	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
ASB	344	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334 OR Visiting University Student
ASB	345	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
ASB	346	Marriage and Family Diversity	Social, economic, and cultural factors that shape family diversity in relation to generational and gender dynamics within the family.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	

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ASB	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ASB	350	Anthropology and Art	Art forms of people in relationship to their social and cultural setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	
ASB	353	Death&Dying Cross-Culturl Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
ASB	355	Trad Medicine and Healing	In-depth study of world views, practices, and roles of shamans and traditional and contemporary healers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU or SB	Prerequisite(s): ASB 102, ASB 222, ASB 223 or ASM 104 or SSH 100 or ASB 100 with C or better
ASB	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
ASB	357	Society and Drugs	Analyzes how humans use exogenous chemicals to change psychology, biology and behavior, and what positive and negative consequences this has for human health. Explores how such chemical technologies arise through cultural evolution, how societies decide what are appropriate and inappropriate uses of such technologies, how these technologies change what is considered normal biological functioning and behavior, and how these technologies shape human health. Through this substantive topic, introduces basic concepts and tools in two related fields--medical anthropology and epidemiology. A consistent focus in the course is developing tools that can be applied to improve the provision of care and health care policy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 357 or ASB 395 (Society and Drugs) OR Visiting University Student
ASB	358	Yoruba Atlantic	The Yoruba in the African diaspora is how Africans, separated from their home country and scattered in a new land, managed to retain their traditions and reform their identities. The slave trade led to the spreading of African culture, religion, dance, art and music from one hemisphere to another and contributed to the cultural diversity of the New World. Allows students to trace the experiences of one African cultural group throughout the cycle of the slave experience in the Americas. Utilizes different sources or approaches (e.g., anthropology, archaeology, written document, oral tradition) to provide an understanding of how the Yoruba were integrated into the Atlantic world, the transformations of Yoruba identities and culture, and the strategies for resistance employed by the Yoruba in the New World.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only AFR 358 or ASB 358 or AFS 394/ASB 394/HST 394/SGS 394 (Yoruba in the African Diaspora World) OR Visiting University Student
ASB	361	Human Cultural Beginnings	Biosocial evolution in the Plio-Pleistocene, emphasizing technological achievements and the relationship between technology and environment in Eurasia and Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	H	Prerequisite(s): minimum 45 hours
ASB	362	People and Plants	Offers a global survey of ethnobotany, the study of the uses of plants by people. Integrating botany, anthropology and archaeology, students learn about the roles plants have played as foods, tools, medicines and foci of religious devotion and ritual experience across human history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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ASB	363	Cells to Society	Equips students with concepts and empirical examples they need to understand the role of complexity in the world around them. Complexity science is based on the fundamental principle that entities and phenomena in the world around us are systems composed of many parts that interact to produce their global characteristics. For example, cells interact to produce organs and tissues, which in turn interact to produce physiological processes (i.e., the capacity to metabolize food to produce new compounds and energy) and physical infrastructure (skeletal and muscular structure) which produce organisms. Organisms, (e.g., humans) interact to form groups, villages, cities, nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AML 394 (From Cells to Societies) or ASB 363 or ASB 394 (From Cells to Soc) or BIO 363 or BIO 394 (From Cells to Soc) or SOS 363 or SOS 394 (From Cells to Soc) OR Visiting University Student
ASB	366	African Archaeol: Precolonial	In-depth analysis of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Places special study on the evidence relating to dynamics of civilizations in ancient Africa, their foundation, growth, and failure, which spans a period of two million years.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 366 (or AFS 366) or ASB 366
ASB	368	Hunter-Gatherers	Studies of known hunting and gathering societies with the goal of developing approaches to understanding past and/or present hunting and gathering societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours
ASB	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370 OR Visiting University Student
ASB	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
ASB	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit for only ASB 374, POS 374, SBS 374 or SOC 374
ASB	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; min 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Env Connections in Anthropology) or ASB 494 (Ecological & Environmental Anthropology) OR Visiting University Student
ASB	376	Global Health Policy	Examines the relationship among global policy, population dynamics and human health. Learn about what quantitative indicators (i.e., measures) can tell us about the scope, distribution and determinants of population health problems. The population focus organizes the course according to the broad domains of fertility, morbidity and mortality.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 42 hours; Credit is allowed for only ASB 376 or ASB 494 (Global Health Policy) OR Visiting University Student
ASB	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378 OR Visiting University Student
ASB	380	Language, Culture & Gender	Focuses on how language, thought and culture are intertwined in everyday practice. Students learn the central role of language in shaping and reflecting social norms and social actions cross-culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 42 hours OR Visiting University Student

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ASB	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)
ASB	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
ASB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ASB	395	Topics in Comparative Culture	In-depth study of specific topic(s) cross-culturally. Students engage with the subject matter through critical evaluation of literature, hands-on analysis and interpretation of data, and scientific writing.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 42 hours
ASB	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
ASB	412	History of Anthropology	Historical treatment of the development of the culture concept and its expression in the chief theoretical trends in anthropology between 1860 and 1950.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ASB	417	Politics and Culture	Comparative examination of the forms and processes of political organization and activity in primitive, peasant, and complex societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ASB	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
ASB	442	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over 'global cities' anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
ASB	443	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): ASB 100 or SSH 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 443 or SSH 403 OR Visiting University Student

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ASB	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
ASB	448	Maternal and Child Health	Explores how genetics, nutrition, disease ecology, clinical access, legal systems, cultural practices and historical context contribute to maternal and child health. Draws from diverse fields including epidemiology, anthropology, biology, medicine, global health, public policy and sustainability to integrate a complex understanding of the myriad influences that shape maternal and child health and thereby affect our broader society. Evaluates the translation of basic science into clinical practice and public policy as well as the roles and partnerships among local, national and international organizations for improving human health worldwide. Provides up-to-date information about basic science, public policy and global health of maternal and child health to develop skills translatable in the workforce.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prereq(s): minimum 45 hours; Credit is allowed for only ASB 448 or ASB 494 (Matrnl & Child Hlth) or ASB 548 or ASB 598 (Matrnl & Child Hlth) or BIO 448 or BIO 494 (Matrnl & Child Hlth) or BIO 548 or BIO 598 (Matrnl & Child Hlth) OR Visiting University Student
ASB	452	Commnty Partnrshps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student
ASB	455	Practicum for Soc Sci	Students integrate theoretical, methodological, ethical and experiential learning related to social science research questions.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): minimum 42 hours
ASB	457	Global Mental Health	Brief overview of the field of global mental health, an emerging field and one of vital importance for both research and evidence-based interventions. Mental health has been identified as one of the leading causes of death and disability and thus deserves a critical look at why this is occurring globally. Introduces the concept of the field of global mental health, cross-cultural problems and possible solutions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & G	Prerequisite(s): ASB 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 457 or ASB 498 (Global Mental Health) OR Visiting University Student
ASB	462	Medical Anthro: Culture/Health	Role of culture in health, illness, and curing; health status, provider relations, and indigenous healing practices in United States ethnic groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & C	Credit is allowed for only ASB 462 or SSH 404 OR Visiting University Student
ASB	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
ASB	464	Ethnography Mexico & Bdrlnnds	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
ASB	466	Peoples and Cultures of Africa	Surveys African peoples and their cultures, external contact, and changes. Meets non-Western requirement.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 466 or ASB 466 OR Visiting University Student
ASB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASB	490	Earliest Cities	Archaeological research on the origins and development of the earliest urban centers around the world. Applies urban theory and comparative analysis. Compares ancient and modern cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & H	Prerequisite(s): ASB 222 or 223 with C or better; minimum 45 hours; Credit is allowed for only ASB 490 or PUP 490
ASB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student

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ASB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ASB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASB	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-6		Prerequisite(s): Barrett Honors student
ASB	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-7		
ASB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-3		
ASB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	501	Professionalism	Presents students both information about the tools, opportunities and skills needed to navigate graduate training and future career success, as well as the opportunity to consider all this for themselves. Presents traditional, timeless tools for success, while also taking into account recent and profound changes to the academy that have changed how academic work is done and communicated. Also touches upon considering and preparing for a range of possible career paths for PhDs.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 501 or ASB 591 (Professionalism)
ASB	503	Medical Anthropology	Theory in medical anthropology and cross-cultural studies that illustrate particular theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	504	Global Health Policy	Examines the relationship among global institutions and policies, population dynamics and human health. Uses extant data to conduct comparative analyses of population data and health-related policies and practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking grad stđnt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)
ASB	510	Health: Social BioculturalThry	Comparative and critical approaches to complexities of health, drawn from anthropology and related fields Focuses on theories that address how social and cultural factors shape human health.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
ASB	525	Intro to Material Culture	Considers how objects embody social relationships and therefore cultural meanings. Seminar explores theories that give insight into social processes such as exchange, consumption, and identity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASB	526	Survey Topics in Global Nutrit	Nutrition is at the nexus of human health, food systems, water, sanitation and hygiene (WASH) and gender, among others important intersecting human and environmental systems. Explores the current landscape of nutrition and its intersection with these topics by synthesizing research, programmatic, and policy documents and public communications and through hands-on exploration and analysis of publicly available datasets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	530	Chngng Human-Nature Relatnshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553
ASB	537	Topics/Mesoamerican Archaeolog	Explores changing organization of pre-Columbian civilizations in Mesoamerica through interpretive issues, such as regional analysis, chiefdoms, urbanism, and exchange.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	541	Theory in Sociocultural Anthro	Basic issues and concepts in sociocultural anthropology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	548	Maternal and Child Health	Explores how genetics, nutrition, disease ecology, clinical access, legal systems, cultural practices and historical context contribute to maternal and child health. Draws from diverse fields including epidemiology, anthropology, biology, medicine, global health, public policy and sustainability to integrate a complex understanding of the myriad influences that shape maternal and child health and thereby affect our broader society. Evaluates the translation of basic science into clinical practice and public policy as well as the roles and partnerships among local, national and international organizations for improving human health worldwide. Provides up-to-date information about basic science, public policy and global health of maternal and child health to develop skills translatable in the workforce.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prereq(s): degree or non-degree seeking graduate student; Credit is allowed for only ASB 448 or ASB 494 (Matrnl & Child Hlth) or ASB 548 or ASB 598 (Matrnl & Child Hlth) or BIO 448 or BIO 494 (Matrnl & Child Hlth) or BIO 548 or BIO 598 (Matrnl & Child Hlth)
ASB	560	Theory and Archaeology	Applies social theory to archaeological study of societies of the past. Includes practice theory, hierarchy, space and place, material culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AML 560 or ASB 560
ASB	567	Southwestern Archaeology	Broad coverage of Southwestern cultural developments focusing on current debates and rigorous use of archaeological data in making cultural inferences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	568	Intrasite Research Strategies	Research issues within a single site context. Topics include quantitative spatial analysis, site definition, sampling, distributional analysis, and substantive interpretation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	572	Museum Collection Management	Principles and practices of acquisition, documentation, care, and use of museum collections; registration, cataloging, and preservation methods; legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only ASB 573 or HST 573
ASB	574	Exhibit Design and Development	Exhibition philosophies and development; processes of planning, designing, staging, installing, evaluating, and disassembling temporary and long-term exhibits.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	579	Critical Issues/Museum Studies	Current debates of museum practice from an anthropological perspective. Addresses issues of collection, presentation, authenticity, and authority.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ASB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASC	315	Numeracy in Technology	Contextual uses of mathematics in applied sciences. Emphasizes using mathematical methodologies to solve technology-related problems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): BAS major OR Visiting University Student
ASC	325	Physical Sciences in Tech	Physical systems and their interrelationships on technology systems. Real-world applications of physical systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	Prerequisite(s): BAS major
ASC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisites: Polytechnic BAS student
ASC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Pre-requisites: Polytechnic BAS student

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ASL	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
ASL	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
ASL	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student
ASL	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student
ASL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	410	Deaf Culture	Provides students with an overview of issues related to deaf, hard of hearing and comprehensive vision hearing loss (CVHL). Topics include historical, cultural, educational and political issues, technology, arts and literature as it relates to the deaf community. Taught primarily in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASL 410 or ASL 494 (Deaf Culture) or SHS 410 or SHS 494 (Deaf Culture) or SLC 410 or SLC 494 (Deaf Culture) OR Visiting University Student
ASL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ASL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ASL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
ASL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
ASL	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASL	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	104	Bones, Stones/Human Evolution	Physical anthropology and archaeology. Evidence and processes of human evolution and of culture change. Primates. Fossil hominids and their tools. Race, variation, and heredity. Environment and human biology. Prehistoric culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	201	Epidemics and Outbreaks	Covers epidemiologic methods for the control of conditions such as infectious and chronic diseases, mental disorders, community and environmental health hazards, and unintentional injuries. Other topics include quantitative aspects of epidemiology, including data sources, measures of morbidity and mortality, evaluation of association and causality, and study design. A background in basic biology and a basic understanding of the principles of human diseases helpful in succeeding in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Credit is allowed for only ASM 201 or SSH 201 OR Visiting University Student

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ASM	246	Human Origins	History of discoveries and changing interpretations of human evolution. Earliest ancestors to emergence of modern humans. Humanity's place in nature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	
ASM	275	Forensic Anthropology	Discusses the role of the forensic anthropologist in medico-legal investigations involving skeletonized human remains. Includes forensic recovery techniques, identification of decedents through skeletal and dental analysis, and reconstructing the crime scene through analysis of trauma patterns. Covers the legal aspects of forensic practice and considers historical case studies and the contributions forensic anthropologists make to mass disaster investigations and human rights abuses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SB or SG	
ASM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	300	Anthropological Sciences Sem	Focuses on the ways in which research findings are produced by diverse theories and methods in the anthropological sciences, usually in combination with other life and physical sciences, with a strong focus on combination anthropological conceptual frameworks with quantitative methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): Anthropology BS major; Two of the following: ASB 102, 222 or 223, AML 100 or ASM 104 with a C or better OR Visiting University Student
ASM	301	Peopling of the World	Reviews all evidence for human dispersal during the last 100,000 years, origins of language, cultures, races, and beginnings of modern humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Pre-requisite: ASM 104
ASM	313	Great Adaptations	Tiny hummingbirds and huge whales commute thousands of miles every year, male bower birds construct elaborately decorated structures to impress females, and some parasites program suicidal behavior into their hosts. These amazing (and sometimes bizarre) behaviors are all adaptations—traits that have been favored by selection because they enhance the ability of individuals to survive and reproduce successfully. The study of adaptation helps us to understand how evolution generates complexity and to understand the processes that underlie the rich diversity of life. Covers the principles of natural selection and a diverse and remarkable range of adaptations in nature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASM 313 or ASM 394 (Great Adaptations) OR Visiting University Student
ASM	332	Life & Death in Ancient Egypt	Reveals ancient Egyptian life through recent research in archaeology and physical anthropology on cemeteries, tombs, and the dead themselves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only AFR 332 (or AFS 332) or ASM 332
ASM	338	Anthropological Field Session	Anthropological field techniques, analysis of data, and preparation of field reports.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
ASM	341	Human Osteology	Osteology, human paleontology, and osteometry. Description and analysis of archaeological and contemporary human populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): ASM 104 with C or better; 25 minimum hours
ASM	342	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s) with C or better: ASM 104 (or BIO 181 or 282). Credit is allowed for only ASM 342 or BIO 327
ASM	344	Fossil Hominids	The fossil evidence for human evolution, emphasizing the concepts and methods for reconstructing the past.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisite: ASM 104
ASM	345	Disease and Human Evolution	Interaction of people and pathogens from prehistoric times to the present, with emphasis on disease as an agent of genetic selection.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 or BIO 100 or BIO 181 or BIO 182 or BIO 281 or BIO 282 OR Visiting University Student
ASM	350	Geoarchaeology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASB 222 or 223, GLG 101 or 103, or GPH 111 with C or better OR Visiting University Student
ASM	365	Doing Archaeology	Using hands-on analysis of artifacts and a mock site, this advanced introduction to archaeology acquaints the student with the field and laboratory methods applied by archaeologists, the information archaeologists use, and how they construct knowledge of the past.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 222 (or ASB 223 or 335 or 337)

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ASM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	401	Health and Human Biology	Health and biology in contexts of human evolutionary history, biological and cultural variation, lab-based health status assessments, core concepts of human variation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-4		Prerequisite(s): ASB 100 (or ASM 104); SSH 100
ASM	403	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth) OR Visiting University Student
ASM	414	Environmental Health	Integrates anthropology and human geography theory and practice to understand the environmental contexts of health, particularly urban	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB	Prerequisite(s): AML 100, ASB 100, 102, 222, 223, ASM 104, SOS 100, 110, 111 with C or better; minimum 45 hours OR Visiting University Student
ASM	443	Primateology	Evolution and adaptations of nonhuman primates, emphasizing social behavior. Includes material from fossil evidence and field and lab studies in behavior and biology which must be critically integrated with relevant competing theories concerning the evolution of primate behavior and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; minimum 56 hours; Credit is allowed for only ASM 443 or ASM 543 OR Visiting University Student
ASM	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	L	Prerequisite(s): ASM 301, BIO 340, LSC 347, or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 446 or BIO 546 OR Visiting University Student
ASM	450	Bioarchaeology	Surveys archaeological and physical anthropological methods and theories for evaluating skeletal and burial remains to reconstruct biocultural adaptation and lifeways.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G	Prerequisite(s): ASM 104
ASM	452	Dental Anthropology	Human and primate dental morphology, growth, evolution, and genetics. Within- and between-group variation. Dental pathology and behavioral-cultural-dietary factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4	SG	Pre-requisites: ASM 104. Credit is allowed for only ASM 552 or ASM 452
ASM	456	Infectious Disease/Human Evolu	Study of infectious disease and humanity, using evidence from anthropology, history, medicine, and ancient skeletons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 345
ASM	459	Forensic Anthropology	Applies anthropology, primarily human osteology, to legal questions, including individual identification, crime scenes, forensic reports, police work, and court testimony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: ASM 341; ASM 275; Credit is allowed for only ASM 459 or 559
ASM	460	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): ASM 104 with C or better; ASM 341, 342, 344, 345, or 348
ASM	465	Quantificatn & Analysis Anthro	Statistical and quantitative strategies for envisioning and exploring archaeological, physical anthropological, bioarchaeological, and socialcultural data. Univariate and bivariate methods. A basic understanding of algebra is necessary to be successful in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	CS	
ASM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
ASM	503	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth)

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ASM	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 506, ASM 506 or MCB 506
ASM	525	Primate Paleobiology	Seminar-based survey of primate evolution, focusing on comparative biology of the extant primates and the fossil record through the Miocene.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	530	Paleoanthropology	Seminar-based in-depth study of the fossil record of human evolution and its geological, environmental, and phylogenetic contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	543	Primatology	Advanced study of nonhuman primate behavioral adaptations, emphasizing comparative sociality, incorporating data on behavior and biology from field and captivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit allowed for ASM 443 or 543
ASM	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); credit is allowed for only BIO 446, ASM 446, BIO 546 or ASM 546
ASM	548	Geochronology	Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	552	Dental Anthropology	Evolutionary anthropology of non-human primate and human dentition and research from extant and extinct species of non-human primates and hominins.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 452 or ASM 552
ASM	555	Advanced Human Osteology	Intensive lab course covers identification of human skeletal remains and bone fragments from archaeological contexts. Emphasizes skeletal biology, variation, anatomical landmarks, determinants of age, sex, and stature.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): Anthropology graduate student OR ASM 341
ASM	560	Human Growth & Development	How growth and development influences human variation; stages of human life; evolution through the fossil record; genetic, environmental, and biocultural factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	565	Quantitative Archaeology	Formal methods of structuring, codifying, and analyzing data for archaeological problems. Designing research to yield data amenable to productive analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	568	GIS and Spatial Technologies	In-depth survey of spatial technologies in anthropological research, including GIS, spatial modeling, remote sensing, and image analysis and classification.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
ASM	573	Lithic Analysis	Analysis and interpretation of chipped stone artifacts. Focus on both techniques and underlying concepts and their application to real collections.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 579 or SOS 579
ASM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ASM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	611	Paleopathology	Explores patterns of disease manifested in the human skeleton and differential diagnosis of infectious, metabolic, neoplastic, congenital, and other conditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); ASM 555
ASM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	111	Intro/Solar Systems Astronomy	Properties and origins of the solar system, exoplanets, astrobiology. History, properties of light, instruments, study of solar system and nearby stars.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
AST	112	Intro Stars, Galaxies & Cosmo	Structure and evolution of stars, star clusters, galaxies, cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
AST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	301	Physics of Astrophysics	Develops critical physical and mathematical concepts for contemporary astrophysics. Assumes prior knowledge of algebra and calculus. Through the textbook, introduces students to a variety of physical forces in the context of astrophysical processes, including electromagnetic interactions and light, gravity and motion, interactions between light and matter in astrophysical systems, and the strong (nuclear) force responsible for the fusion processes fueling stars.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 210 or higher with C or better; (PHY 111 and 113 with C or better) or (PHY 121 and 122 with C or better); (PHY 112 and 114 with C or better) or (PHY 131 and 132 with C or better) OR Visiting University Student
AST	321	Intro/Planetary/Stellar Astrop	Physical laws; celestial mechanics; properties of planets, the sun, and other stars; formation and evolution of stars and planetary systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better OR Visiting University Student
AST	322	Intro/Galactic/Extra/Astrophys	Evolved stars, introduction to relativity, galaxies and interstellar matter, structure and dynamics of galaxies, cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 266 or 271 with C or better; PHY 121/122 with C or better or PHY 150 with C or better
AST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	421	Astrophysics I	Selected astrophysical topics, including stellar evolution, star formation, interstellar medium, galactic structure, extragalactic astronomy, high-energy astrophysics, and cosmology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better
AST	422	Astrophysics II	Same range of astrophysical topics as for AST 421 but emphasizes different specific topics in a given year.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 321 or 322 with C or better; PHY 252 with C or better OR Visiting University Student
AST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
AST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
AST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
AST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-7		
AST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
AST	521	Stars and Interstellar Medium	Radiative transfer, atomic and molecular properties, stellar atmospheres, line profiles, nonlocal thermodynamic equilibrium, interstellar gas and dust, star formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	522	Stars & Interstellar Medium II	Stellar structure, radiative transport, boundary conditions, equations of state, nuclear reactions, opacity, nucleosynthesis, chemical evolution of the galaxy, stellar evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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AST	523	Stars/Interstellar Medium III	Structure of the interstellar medium, gaseous nebulae, recombination theory, ionization fronts and shock waves, galactic magnetic fields, magnetohydrodynamics, molecular clouds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	531	Galaxies and Cosmology I	Structure and evolution of the Milky Way, stellar properties, populations and associations/clusters, interstellar medium, dark matter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	532	Galaxies and Cosmology II	Structure of galaxies and the nearby universe, Hubble sequence, kappa-space, stellar populations, active galaxies, galaxy environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	533	Galaxies and Cosmology III	Issues in modern cosmology, the distance scale, cosmological parameters, cosmological tests, cosmic background radiation, early universe, galaxy formation and evolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	540	Astronomical Instrumentation	Studies a range of optical astronomical hardware including telescopes, digital detectors and instrument design and theory. Focuses on the use of CCDs in terms of operation, calibration, use, measurement, limitations, noise and signal, statistics, and preliminary understanding prior to data reduction. Discusses practical optical astronomical observing: the choice of filters and their design, planning your observing run, bringing your data home and the types of data you will need. Final class project requires the reduction and measurement of data using computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AST 540 or AST 598 (Optical Astro Tech & Data) or AST 598 (Observing Instrumentation and Data Analysis)
AST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
AST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ASU	9	ASU-Uber Online Orientation	Students that are a part of the ASU & Uber Education Partnership will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, become familiar with the partnership and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		

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ASU	10	Connect: ASU Orientation	Students enrolled in the Starbucks College Achievement Plan will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	11	ASU Online Orientation	Students enrolled in ASU Online Orientation will learn about ASU and its mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/school balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	12	SDAP Online Orientation	Students enrolled in the Starbucks Degree Achievement Plan Orientation will learn about ASU's mission as the New American University, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and identify key components of a work/life/studies balance plan.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	19	Jump Start	One-week program for incoming first-year students to ASU and is designed to set them up for academic success. Introduces the tools and processes that support their journey. Students learn how to connect with other students via collaborative environments.	N	LEC	N	YGB	University College	University Academic Success Programs	0		Prerequisite(s): Jump Start or SPIRIT student
ASU	42	Online Military Orientation	Active duty and veteran students enrolled in ASU 42 will explore ASU academic, veteran, and career resources, discover the value of a university degree from a research institution, discuss academic integrity, explore the tools used in online courses, and craft a plan balancing work, school, and life.	N	LEC	N	NOG	Office of the University Provost	Online & Extended Campus	0		
ASU	120	Emerging Leaders I	Students develop in academic areas while also gaining essential career skills in creativity, problem solving, and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and ASU 120. This is the first part of a two-part curriculum which continues into the spring semester. Separate grades will be issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	3		Credit is allowed for only ASU 120 (or ASU 150) or UNI 120 OR Visiting University Student
ASU	121	Emerging Leaders II	Students continue to develop in academic areas while gaining essential career skills in creativity, problem solving and teamwork. Students learn how to think critically and manage a project from inception to completion. Through course discussions and assignments, students examine connections between their work in other courses and this course. Second part of a two-part curriculum, which continues from the fall semester. Separate grades are issued for each semester.	N	LEC	N	GNA	University College	Dean, University College	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ASU	230	Life by Design	Living a meaningful life that is true to you is one of life's greatest endeavors. And, it's a process that can seem overwhelming and difficult to figure out. College offers the opportunity to explore interests and find career paths that align to your genuine interests and personal goals. But where do you start on this journey of self-discovery? Start with this course; it introduces the design thinking process--a strategy used by the world's top designers to launch products and services--and applies that process to your individualized career and life plans. You'll learn how aspects of your life that may feel disconnected (e.g., skills, ambition, interests, relationships, family needs, lifestyle) can and should work together in helping you discover careers that fit you. You'll explore how the college experience--through majors, classes, experiential learning, networking and other student services--can support your journey. And you'll develop a growth mindset that helps you.	N	LEC	N	GNA	University College	Dean, University College	3		Prerequisite(s): ASU 101; Credit is allowed for only ASU 230 or ASU 294 (Life by Design) OR Visiting University Student

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ASU	101-AEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace Engineering undergraduate student OR Visiting University Student
ASU	101-AMT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	1		Prerequisite(s): undergraduate Aviation programs major
ASU	101-BME	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering student OR Visiting University Student
ASU	101-CEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CHE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Chemical Engineering major OR Visiting University Student
ASU	101-CHS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions student OR Visiting University Student
ASU	101-CLS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): College of Integrative Sciences and Arts undergraduate student OR Visiting University Student

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ASU	101-CNE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		
ASU	101-CON	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-CPP	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1		Prerequisite(s): Watts College of Public Service and Community Solutions OR Visiting University Student
ASU	101-CS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School of Journalism and Mass Communication student OR Visiting University Student
ASU	101-CSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): School of Computing and Augmented Intelligence major OR Visiting University Student
ASU	101-EEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Electrical Engineering undergraduate student OR Visiting University Student
ASU	101-EGR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Engineering undergraduate student OR Visiting University Student

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ASU	101-ERM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): Environmental and Resource Management student or Visiting University Student
ASU	101-FSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student OR Visiting University Student
ASU	101-GIT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): Graphic Information Technology student or Visiting University Student
ASU	101-HDA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
ASU	101-HNR	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	1		Prerequisite(s): Barrett Honors student
ASU	101-HSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): Human Systems Engineering student OR Visiting University Student
ASU	101-JEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): School of Computing and Augmented Intelligence major OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ASU	101-JFT	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): Information Technology student OR Visiting University Student
ASU	101-LA	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Prerequisite(s): The College of Liberal Arts & Sciences student OR Visiting University Student
ASU	101-MAE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student or Aerospace Engineering undergraduate student OR Visiting University Student
ASU	101-MEE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical Engineering undergraduate student OR Visiting University Student
ASU	101-MSE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science and Engineering BSE major OR Visiting University Student
ASU	101-NCIAS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College of Interdisciplinary Arts and Sciences undergraduate student OR Visiting University Student
ASU	101-NH	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		

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ASU	101-NU	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation or Nutrition student OR Visiting University Student
ASU	101-ONL	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): ASU Online students OR Visiting University Student
ASU	101-SOS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability student OR Visiting University Student
ASU	101-TE	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College student OR Visiting University Student
ASU	101-TEM	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Prerequisite(s): Technological and Entrepreneurship Management student OR Visiting University Student
ASU	101-TPS	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Polytechnic School	1		Prerequisite(s): Ira A. Fulton Schools of Engineering - The Polytechnic School student OR Visiting University Student
ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student

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ASU	101-UC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	University College	Dean, University College	1		Prerequisite(s): University College students OR Visiting University Student
ASU	101-WPC	The ASU Experience	Students will learn about ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students will examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1		Prerequisite(s): W.P. Carey student OR Visiting University Student
ASU	140-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	140-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	140-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	0-18		
ASU	140-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	140-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	140-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	140-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	140-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	140-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	140-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	140-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	140-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	140-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	140-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	194-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ASU	194-LA	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ASU	194-NCIAS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ASU	194-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	240-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	240-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	240-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	0-18		
ASU	240-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		

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ASU	240-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	240-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	240-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	240-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	240-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	240-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	240-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	240-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	240-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	240-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	294-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
ASU	340-CHS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	340-CLS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	340-CPSCS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	0-18		
ASU	340-CS	ProMod	Project-based learning.	Y	PRO	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	340-FSE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		
ASU	340-HDA	ProMod	Project-based learning.	Y	PRO	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	340-HNR	ProMod	Project-based learning.	Y	PRO	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	340-LA	ProMod	Project-based learning.	Y	PRO	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	340-NCIAS	ProMod	Project-based learning.	Y	PRO	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	340-NU	ProMod	Project-based learning.	Y	PRO	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	340-SOS	ProMod	Project-based learning.	Y	PRO	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	340-TB	ProMod	Project-based learning.	Y	PRO	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	340-TE	ProMod	Project-based learning.	Y	PRO	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	340-WPC	ProMod	Project-based learning.	Y	PRO	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ASU	394-CLS	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0.5-4		
ASU	394-UC	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	0.5-4		
ASU	440-CHS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	0-18		
ASU	440-CLS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0-18		
ASU	440-CPSCS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	0-18		
ASU	440-CS	ProMod	Project-based learning.	Y	LEC	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	0-18		
ASU	440-FSE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0-18		

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ASU	440-HDA	ProMod	Project-based learning.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	0-18		
ASU	440-HNR	ProMod	Project-based learning.	Y	LEC	Y	GNA	Barrett, The Honors College	Barrett, The Honors College	0-18		Prerequisite(s): Barrett Honors student
ASU	440-LA	ProMod	Project-based learning.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0-18		
ASU	440-NCIAS	ProMod	Project-based learning.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	0-18		
ASU	440-NU	ProMod	Project-based learning.	Y	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	0-18		
ASU	440-SOS	ProMod	Project-based learning.	Y	LEC	Y	GNA	College of Global Futures	School of Sustainability	0-18		
ASU	440-TB	ProMod	Project-based learning.	Y	LEC	Y	GNA	Thunderbird School of Global Management	Dean, Thunderbird School of Global Management	0-18		
ASU	440-TE	ProMod	Project-based learning.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-18		
ASU	440-WPC	ProMod	Project-based learning.	Y	LEC	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	0-18		
ATC	230	Fundamtnls of Air Traffic Mgmt	Introduces the manuals, procedures, maps, charts, and regulations used by air traffic controllers in the National Airspace System (NAS).	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): AMT 201 with C or better
ATC	331	Tower Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in ATC towers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better
ATC	332	TRACON Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA TRACONs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better
ATC	333	En Route Operations	Provides knowledge of air traffic control procedures, phraseology, equipment, and aircraft separation requirements used in FAA ATC En Route Centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 230 with C or better
ATC	431	Tower Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 331 with C or better
ATC	432	TRACON Operations & Procedures	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 332 with C or better
ATC	433	En Route Operations & Procedur	Opportunity to operate in tower simulator environment to run scenarios for local and ground control and flight data/clearance delivery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Prerequisite(s): ATC 333 with C or better
ATC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Aviation Programs	1-12		Prerequisite(s): minimum junior standing
ATC	491	ATC Capstone	Overview of problem solution tools, quality metrics, and current technology initiatives related to air traffic management and related industry problems in a project environment. Student projects focus on airport and airspace requirements. Student teams work with partners from industry, government, and academia to define project objectives and work toward a formal recommendation to help solve the specified problem. Class discussions focus on project management, organizational structures, strategic initiatives, strategy implementation and execution. Uses review and analysis of current industry problems and resolutions to provide examples of practical solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Aviation Programs	3		Pre- or corequisite(s): ATC 431 with C or better if completed; ATC 432 with C or better if completed; ATC 433 with C or better if completed
ATC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Ira A. Fulton Schools of Engineering	Aviation Programs	1-4		
ATE	242	Intro to Arch Technology	Materials and methods of construction. Aesthetic, code and construction costs. Exposure to building information management (BIM).	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies major. Corequisite(s): ALA 226
ATE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
ATE	361	Architectural Technology I	Introduces load distribution on structures. Static analysis of determinant beams, trusses, arches, and rigid frames. Computer applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 321 OR Visiting University Student
ATE	362	Architectural Technology II	Strength of materials. Stresses in beams and columns. Thermal effects on structures. Analysis, design, and detailing of wood structural systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 361 with C or better
ATE	451	Building Systems I	Principles of solar radiation, heat and moisture transfer, and environmental control systems as form influences. Energy-conscious design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Co-requisites: ADE 421

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ATE	452	Architectural Technology III	Architectural design implications of heating, ventilation, and air conditioning systems. Principles of lighting, daylighting, and acoustics, and their applications.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): ATE 362 with C or better; Corequisite(s): ADE 422
ATE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
ATE	521	Building Environmental Science	Scientific principles relating to comfort and environmental control. Heat and moisture transfer. Solar/natural energies for heating, cooling, and lighting.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	550	Passive Heating and Cooling	Theory, analysis, and application of passive and low-energy systems in order to maximize comfort and minimize energy consumption in buildings.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	553	Architectural Technology IV	Design and integration of building systems, including mechanical, electrical, plumbing, security, communications, fire protection, and transportation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student; Corequisite(s): ADE 521; ATE 563
ATE	556	Architectural Technology V	Comprehensive design development through the understanding and integration of building materials and systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): ADE 522; APH 505
ATE	560	Building Energy Analysis	Computer simulation of building thermal behavior. Software review. Detailed study of selected simulation models using case study projects.	N	LAB	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	562	Experimental Evaluation	Instrumentation, measurement and computational techniques for analysis of building components, and assessment of thermal and luminous performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	563	Architectural Technology VI	Analysis, design, and detailing of steel buildings and frames. Lateral analysis of small rigid and braced frame systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Architecture student
ATE	582	Environmental Control Systems	Heating, ventilation, and air-conditioning systems. Loads, psychrometrics, refrigeration cycle, air/water distribution, controls, energy performance standards, and utility rates.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Bldg Design MS, Master of Architecture, Master of Urban Design, or Master of Landscape Architecture student
ATE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ATE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
ATE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Herberger Institute of Design and the Arts Graduate student
ATP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		

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ATP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
ATP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7		
BCH	341	Physical Chem with Bio Focus	Thermodynamics, equilibrium, states of matter, solutions and chemical kinetics with a focus on biological systems. For students in biochemical, premedical, biomedical and educational curricula.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114 or 116 or 118 with C or better; CHM 231 or 233 or 333 with C or better; MAT 251 or 265 or 270 with C or better; PHY 101 or 112 or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student
BCH	361	Principles of Biochemistry	Advanced consideration of the structures, properties, and functions of proteins, enzymes, nucleic acids, carbohydrates, and lipids; principles and theory of the utilization and synthesis of these materials by living systems, and the relationship of these processes to energy production and utilization. The course is recommended for pre-health students. No credit for Biochemistry majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 231 with C or better OR Pre- or corequisite(s): CHM 234 or CHM 334 with C or better if completed OR Visiting University Student
BCH	367	Elementary Biochemistry Lab	Qualitative/quantitative analyses of constituents of biological systems, enzyme activity measurements and metabolic studies.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 361 or LSC 366 with C or better if completed OR Visiting University Student
BCH	371	Modern Concepts Biochemist	Detailed examination of the chemical structure, conformation and function of proteins, carbohydrates, lipids and nucleotides; analysis of the energetics, enzymes and control of the metabolic pathways by which these molecules are degraded or synthesized.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 182 with C or better; CHM 234 with C or better; CHM 238 with C or better or Forensic Science BS major OR Visiting University Student
BCH	372	Modern Concepts Biochemist Lab	Analyzes protein structure, purification and function using spectroscopic, chromatographic, electrophoretic and other methods.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BCH 371 OR Visiting University Student
BCH	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects. May be repeated for total of 6 semester hours.	N	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	461	General Biochemistry	Structure, chemistry, and metabolism of biomolecules and their role in the biochemical processes of living organisms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; Corequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better if completed OR Visiting University Student
BCH	462	General Biochemistry	Continuation of BCH 461.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 461 with C or better OR Visiting University Student
BCH	463	Biophysical Chemistry	Principles of physical chemistry as applied to biological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341 or CHM 341 or CHM 346 with C or better OR Visiting University Student
BCH	467	Analytical Biochemistry Lab	Quantitative analysis, separation and purification of biological molecules. Applies chemical and physical methods to the characterization of biological macromolecules.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): BCH 462 with C or better if completed OR Visiting University Student
BCH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
BCH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
BCH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BCH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
BCH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
BCH	501	Current Topics in Biochemistry	Varies by topic.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student

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BCH	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: Graduate students (degree and nondegree); Credit is allowed for only BCH or CHM 520
BCH	561	Adv Topics in Biochemistry	Topics selected from emerging areas of biochemistry based primarily on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BCH 564 or NAN 564
BCH	568	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BCH 568 or PLB 558
BCH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BCS	101	Elementary Serbo-Croatian	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	102	Elementary Serbo-Croatian	See BCS 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
BCS	201	Intermediate Serbo-Croatian	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	202	Intermediate Serbo-Croatian	See BCS 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
BCS	311	Bos/Croat/Serb Comp&Conv I	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 202 with C or better; Credit is allowed for only BCS 311 or BCS 394 (Serbo-Croatian Conv & Comp I) or SLC 394 (Serbo-Croatian Comp/Conv) OR Visiting University Student
BCS	312	Bos/Croat/Serb Comp&Conv II	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): BCS 311 with C or better; Credit is allowed for only BCS 312 or BCS 394 (Bosnian/Croatian/Serbian Composition and Conversation II)
BCS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
BCS	495	Serbo-Croatian/Heritage Speakr	Generates professional proficiency by developing communicative and written competency in standard literary Serbo-Croatian.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		

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BDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		
BDE	702	Biological Design II	Emphasizes the integrative areas of computational bioinformatics, systems biology, and synthetic biology, and their application in biomedical research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	100	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	108	Concepts in Plant Biology	Introduces concepts of plant biology that are of human relevance using commercially important, edible, and medicinal plants as examples. Not for majors in the biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	
BIO	109	Field Natural History of AZ	Studies the common plants and animals of Arizona including their distribution, adaptations, behavior and ecology. Introduces basic field techniques used in the study of natural history. Off-campus field trips. Cannot be used for major credit in the biological sciences.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	

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BIO	112	Discovery - Why Sex?	"Why?" is a question that animates the youngest of children to the most seasoned of scientists. The acts of asking and answering "Why?" highlight the integrated nature of scientific knowledge and discovery. Demonstrates scientific disciplines are not walled cities in which knowledge is neatly segregated from lines of inquiry and knowledge in other disciplines. Instead, scientific concepts weave throughout and between disciplines and scientists increasingly rely on colleagues from different scientific fields to find answers to scientific questions. So our journey to find responses to the question "Why Sex?" takes us not just to biology, but also to earth science and to physics. Along the way, scientists are linked together not only through concepts that crosscut the disciplines, but also in their reliance upon key scientific skills such as the ability to observe, think critically, measure, gather data and communicate their findings.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Credit is allowed for only BIO 112 or BIO 194 (Discovery: Why Sex?) OR Visiting University Student
BIO	113	Dinosaurs	Principles of evolution, ecology, behavior, anatomy and physiology using dinosaurs and other extinct life as case studies. Geological processes and the fossil record. Cannot be used for major credit in the biological sciences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Credit is allowed for only BIO 113 or LSC 294 t2 (Dinosaurs)
BIO	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
BIO	140	Grk&Lat Roots Biosctfc Trmnlg	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
BIO	151	Biological Thinking	The science behind the science of life. Masters the core concepts of modern biology, understands the scientific discoveries that lie behind those concepts, and develops scientific reasoning skills so that students can contribute discoveries of their own.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): Life Sciences student; ALEKS score below 61; Credit is allowed for only BIO 100 or BIO 151 OR Visiting University Student
BIO	160	Intro. to Anatomy & Physiology	Terminology and essential concepts in human anatomy and physiology, as well as the structure and function of the human body. Designed for students in the health-related professions. Acquaints the student with human anatomy, structure and function, and basic disease concepts. Organizes and presents course concepts by organ systems, and the laboratory component of the course emphasizes human structure and function. The course has 3 contact hours for lecture and 2 contact hours for lab per week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4	SQ	
BIO	181	General Biology I	Biological concepts emphasizing principles and the interplay of structure and function at the molecular, cellular, and organismal levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Credit is allowed for only BIO 181 or BIO 281 or BIO 282 OR Visiting University Student
BIO	182	General Biology II	Biological concepts emphasizing principles and the interplay of structure and function at the organismal, population, and community levels. Intended for life sciences, biology, and health-related science majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 181 with C or better; Credit is allowed for only BIO 182 or BIO 281 or BIO 282 OR Visiting University Student
BIO	189	SOLUR Apprentice	Students gain exposure to contemporary issues in research excellence, mentoring skills and professional development. Enriches individual lab research experiences for students by bringing them together in a peer-community environment. Introduces the resources students have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning. Rigorously evaluates their research processes and products in light of their eventual professional plans.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 2.75 GPA; Credit is allowed for only BIO 189 or BIO 194 (SOLS Undergraduate Research Apprentice) OR Visiting University Student
BIO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	201	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	
BIO	202	Human Anatomy & Physiology II	Studies the structure and function of the human body. Topics include cardiovascular, respiratory, lymphatic/immune, endocrine, renal, digestive, and reproductive systems. Cannot be used for major credit in the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SG	Prerequisite(s): BIO 201 with C or better OR Visiting University Student

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BIO	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function--e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BIO 230 or BMY 230
BIO	250	Intro to Evolution & Medicine	Introduces applications of evolutionary biology to medicine. Discusses topics ranging from the evolution of antibiotic resistance to aging, obesity, Alzheimer's disease and cancer using an evolutionary framework to better understand how these diseases/issues came to be, and what can be done to prevent/treat/mitigate these conditions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB & G	Credit is allowed for only ASB 250 or ASB 294 (Introduction to Evolutionary Medicine) or ASM 294 (Evolution and Medicine) or BIO 250 or BIO 294 (Introductory to Evolutionary Medicine) OR Visiting University Student
BIO	281	ConceptualApproachBioMajors I	Covers the themes and concepts that underlie the molecular biology of cells and multicellular organisms as well as the biological processes that shape the diversity of organisms on our planet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	SQ	Prerequisite(s): School of Life Sciences student; Credit is allowed for only BIO 181 or BIO 182 or BIO 281 OR Visiting University Student
BIO	282	ConceptualApproachBioMajors II	Builds upon established conceptual foundations, covers the themes and concepts underlying organismal biology, with an emphasis on physiology and ecology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): School of Life Sciences student; BIO 281 with C or better; Credit is allowed for only BIO 181 or BIO 182 or BIO 282 OR Visiting University Student
BIO	289	SOLUR Researcher	Students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development in this seminar. Enriches individual lab research experiences students by bringing them together in a peer-community environment. Introduces students to the resources they have at their disposal (e.g. on campus, online) to facilitate research productivity and career planning. Rigorously evaluates their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 3.00 GPA OR Corequisite(s): BIO 310, or BIO 494 (Advanced Study Practicum), or BIO/HPS/MBB/MIC 484/492/493/495/496/499 OR Visiting University Student
BIO	293	Health Sciences Workplace	Provides exposure to the health science workplace and helps students explore the full range of careers that are open to those who major at the undergraduate level in the health sciences including managerial and administrative aspects. Includes short presentations by professionals in a variety of fields, including biotechnology and bioenterprise, business and the health sciences. Ample opportunities for questions and personal interactions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		
BIO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	301	Field Natural History	Organisms and their natural environment. Cannot be used for major credit in the biological sciences. Both BIO 300 and BIO 301 must be taken to secure SQ General Studies credit	N	PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1	SG	Pre- or corequisite(s): BIO 300 or LSC 310 with C or better if completed
BIO	302	Cancer-Mother of All Diseases	History of cancer; disease statistics; pathogenesis; diagnosis, treatment and prevention; case studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181, BIO 182, BIO 201, BIO 281, BIO 282, MIC 205, or MIC 220 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	303	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student
BIO	304	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
BIO	305	Biology Behind the Crime Scene	Explores biological technology behind forensic techniques like fingerprinting, Polymerase Chain Reaction (PCR), and paternity testing.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	Pre-requisites: Minimum Sophomore standing

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BIO	306	Modes of Biological Thought	Involves students in the process of biological discovery to examine how we identify truth in biological science.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ENG 101 or 105 with C or better; BIO 181 (or BIO 188) and BIO 182 (or BIO 187) with C or better OR Visiting University Student
BIO	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
BIO	309	Plant Anatomy	Development and mature structure of tissues of vascular plants; patterns and modifications of the leaf, stem, root, and flower.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 or PLB 200 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	310	Special Problems & Techniques	Qualified undergraduates may investigate a specific biological problem under the direction of a faculty member.	N	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	311	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student
BIO	312	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
BIO	313	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
BIO	314	Rsch Colloquium/Biology/Soc I	Develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): Biological Sciences (Biology and Society) BS major; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	315	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Minimum 35 hours; Credit is allowed for only ENG 370 or BIO 315
BIO	316	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
BIO	317	History of Science II	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student
BIO	318	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
BIO	320	Fundamentals of Ecology	Organization, functioning, and development of ecological systems; energy flow; biogeochemical cycling; environmental relations; population dynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better; CHM 116 or 118 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	321	Introductory Ecology Lab	Lab and field observations and experiments to test current concepts and theories in ecology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 320 with C or better if completed OR Visiting University Student
BIO	322	Conservation of Biodiversity	Species-level approaches to the protection, management, and restoration of biological resources from scientific and policy perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	323	Ecosys Restoration&Management	Ecosystem-level approaches to the protection, management, and restoration of biota and ecosystem processes from local to global scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	324	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student

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BIO	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
BIO	327	Evolution of Human Behavior	Examines how evolutionary theory informs our understanding of human behavior, psychology and culture. Explores evolutionary explanations of human behavioral variation and cultural diversity and the influence of natural selection on shaping human cognition. Topics include nepotism, economic decisions, behavioral strategies throughout the life course, mate choice and sexual behavior, perception and judgment, motivation and emotions, social learning and culture, cooperation and prosociality, interpersonal violence and warfare, and norms and moral sentiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ASM 104, BIO 181 or 282 with C or better; Credit is allowed for only ASM 342 or BIO 327
BIO	328	History of Science I	Development and application of scientific thinking from ancient times through the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 328 or HPS 322 OR Visiting University Student
BIO	331	Animal Behavior	Theories of evolutionary, genetic, physiological, and ecological bases of animal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for only BIO 331 or LSC 331 OR Visiting University Student
BIO	340	General Genetics	Science of heredity and variation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prereqs w/C or btr: non-Molec Biosci&Biotech maj; BIO 181; BIO 182 OR non-Molec Biosci&Biotech maj; BIO 181, BIO 281 or MBB 245; MBB 247 OR non-Molec Biosci&Biotech maj; BIO 281; BIO 282; Credit allowed for BIO 340 or MBB 347 OR Visiting University Student
BIO	342	General Genetics Laboratory	Explores general principles of inheritance with special reference to Mendelian, molecular, and computational genetics via lab experiments.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 340 with C or better; Credit is allowed for only BIO 342 or MBB 347 OR Visiting University Student
BIO	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 343 or MBB 343 OR Visiting University Student
BIO	345	Evolution	Processes of adaptive change and speciation in sexual populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340, LSC 347, or MBB 347 with C or better OR Visiting University Student
BIO	351	Developmental Biology	Principles of developmental biology, including the development of major organ systems and their underlying molecular and cellular mechanisms. Illustrated mainly using vertebrate examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better OR Visiting University Student
BIO	352	Lab in Vertebrate Dev Anatomy	Morphology of representative embryonic and adult vertebrates.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Pre- or corequisite(s): BIO 351 with C or better OR Visiting University Student
BIO	353	Cell Biology	Surveys major topics in cell biology, including structural, biochemical, and molecular aspects of cell function.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182; CHM 116 or 118 OR BIO 281; BIO 282; CHM 116 or 118 OR Biomedical Engineering BSE major; BIO 181; CHM 114 or 116 OR Visiting University Student
BIO	354	Cell Biology Laboratory	Investigational lab using modern molecular and cellular techniques to analyze molecular, biochemical, and anatomical traits of cells.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BIO	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student

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BIO	357	Cell & Molecular Bio Lab	Laboratory concepts and techniques central to cell biology and molecular biology emphasize principles and the interplay of these two sub disciplines. Intended for life sciences, biology, and health-related science majors.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 with C or better; Credit is allowed for only BIO 357 or BIO 394 (Cell and Molecular Biology Laboratory) OR Visiting University Student
BIO	360	Animal Physiology	Principles and mechanisms of physiological regulation in animals, with a focus on humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; CHM 116 or 118 with C or better OR Visiting University Student
BIO	361	Animal Physiology Laboratory	Experimental lab studies of physiological mechanisms in animals and model systems.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 360 with C or better if completed OR Visiting University Student
BIO	363	Cells to Society	Equips students with concepts and empirical examples they need to understand the role of complexity in the world around them. Complexity science is based on the fundamental principle that entities and phenomena in the world around us are systems composed of many parts that interact to produce their global characteristics. For example, cells interact to produce organs and tissues, which in turn interact to produce physiological processes (i.e., the capacity to metabolize food to produce new compounds and energy) and physical infrastructure (skeletal and muscular structure) which produce organisms. Organisms, (e.g., humans) interact to form groups, villages, cities, nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AML 394 (From Cells to Societies) or ASB 363 or ASB 394 (From Cells to Soc) or BIO 363 or BIO 394 (From Cells to Soc) or SOS 363 or SOS 394 (From Cells to Soc) OR Visiting University Student
BIO	370	Vertebrate Zoology	Characteristics, classification, evolution, and natural history of the major groups of vertebrate animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	385	Comparat Invertebrate Zoology	Characteristics, life cycles, adaptations, and evolution of invertebrate animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	386	General Entomology	Specialized focus on form, activities, and classification of insects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	389	SOLUR Scholar	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): Life Sciences major; minimum 3.00 GPA OR Visiting University Student
BIO	390	Medical/Dental Field Placement	Field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
BIO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
BIO	403	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prereq(s): min 45 hrs; Credit is allowed for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth) OR Visiting University Student

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BIO	405	Sonoran Desert Field Botany	Plants are the most important organisms on the planet and a fundamental knowledge of them is critical for any biological career--especially the fields of conservation, ecology, sustainability and systematics. Arizona is a diverse state and therefore, an ideal place to explore a wide variety of landscapes and their constituent plants. Introduces the important species of the Sonoran Desert within about a 50-mile radius of Tempe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is only allowed for BIO 405 or BIO 498 (Sonoran Desert Field Botany)
BIO	407	Novel Ecosystems	This primarily field course challenges preconceptions and received wisdom. Visit and discuss a variety of sites within about one hour's drive of ASU Tempe. These sites range from apparently relict desert mountain parks to effluent-dominated wetlands, active agricultural fields, newer and older commercial and residential areas, recreational ponds and (presently) abandoned vacant lots.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320; BIO 322 or 323 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 407 or BIO 494 (Novel Ecosystems) OR Visiting University Student
BIO	408	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only ASB 408 or ASB 494 (Evolutionary Med) or ASB 507 or ASB 591 (Evolutionary Med) or BIO 408 or BIO 494 (Evolutionary Med) or BIO 507 or BIO 591 (Evolutionary Med) OR Visiting University Student
BIO	410	Techniques ConservationBio&Eco	Lecture, field, and laboratory experience in techniques used in conservation biology and ecology. Course is modular, with each module instructed by a discipline-specific expert (e.g., plant ecologist, mammal conservationist, soil ecologist).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; BIO 320 with C or better; BIO 322 or BIO 323 with C or better
BIO	411	Quant Methods in Conserv & Eco	Quantitative methods in conservation ecology; develop mathematical models of ecological and natural resource systems and use the models to better understand and inform management of ecosystems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 320 or 322 with C or better; BIO 415 or STP 226 or STP 231 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
BIO	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412
BIO	414	Rsch Colloquium/Bio/Society II	Further develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Both BIO 314 & 414 must be taken to secure L General Studies designation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): BIO 314 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	415	Statistical Models for Biology	Statistical methods applied to biological problems, design of experiments, estimation, significance, analysis of variance, regression, correlation, chi square, and bioassay; the use of computers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	CS	Prerequisite(s): MAT 210, MAT 251, MAT 265, MAT 270, STP 226, or STP 231 with C or better; Credit is allowed for only BIO 415 or BIO 514 OR Visiting University Student
BIO	416	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only BIO 416 or HPS 410 OR Visiting University Student
BIO	417	Experimental Design	Fixed, random, mixed models; crossed and nested factorial designs; balanced and unbalanced data; completely randomized, blocked, repeated measure designs; ANCOVA.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 415 with C or better
BIO	418	Soil Ecology	Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: ABS 370 or BIO 320. Credit is allowed for only ABS 434 or BIO 418
BIO	419	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 or PLB 308 with C or better; Credit is allowed for only BIO 419 or PLB 419 or BIO 519 or PLB 519
BIO	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student

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BIO	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student
BIO	422	Ecosystem Ecology	Explores the structure, development and dynamics of ecosystems, with a focus on the exchange of energy and materials between the atmosphere, soils, water, biosphere, and anthro-sphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 422 or BIO 494 (Ecosystem Ecology)
BIO	423	Population & Community Ecology	Organization and dynamics of population and communities. Theoretical and empirical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 with C or better
BIO	425	Marine Conservation Ecology	Marine conservation biology is increasingly important for society, as evidenced by frequent media coverage and the recent report by the U.S. Commission on Ocean Policy. Expect exposure to multiple perspectives on important conservation issues in the marine environment and gain valuable experience in critical thinking, communication skills, and the use of science in effective debate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	426	Limnology	Structure and function of aquatic ecosystems, with emphasis on freshwater lakes and streams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3-4	L	Prerequisite(s): BIO 320 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	427	Fire	A survey of fire on Earth--history, ecology, behavior, and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
BIO	430	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
BIO	431	Genes, Development & Evolution	Contribution of genes, developmental processes, and evolution to pattern of phenotypic variation, including disease.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; ENG 101, 105, or 107 with C or better OR BIO 281 with C or better; BIO 282 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
BIO	432	Why People Steal,Cheat,and Lie	Explores the ecological and evolutionary causes of selfishness and cooperation in human societies. Students apply biological models to predict patterns of behavior in human populations and evaluate these models with empirical data. Develops new scientific and philosophical perspectives on human behavior by integrating ideas from complementary disciplines, including biology, psychology, anthropology, criminology, sociology and philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB	Prerequisite(s): BIO 182 or 282; Credit is allowed for only BIO 432 or BIO 494 (Why People Steal, Cheat, and Lie) OR Visiting University Student
BIO	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: MAT 117 or higher or SOS 101; junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Servcs:People&Nature)
BIO	435	Rsch Technique/Animal Behavior	Experimental and field studies of animal behavior; description and quantification of animal behavior and interpretation of behavior within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better
BIO	436	Sociobiology & Behavioral Ecol	Surveys animal and human social behavior examined from ecological and evolutionary perspectives using theoretical and empirical constructs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 331 with C or better OR Visiting University Student

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BIO	438	Marine Biology	Covers the marine habitat, the organisms that live in it and their ecology, in the open water as well as on the sea floor, from coasts to open sea. Includes aspects of oceanography, ecology and biology of marine organisms, ranging from the smallest plankton to whales, as well as issues related to the changing marine environment and conservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): with C or better: BIO 181; BIO 182; BIO 320 or 325 OR BIO 281; BIO 282; BIO 320 or 325; Credit is allowed for only BIO 438 or BIO 494 (Marine Biology) or LSC 434 OR Visiting University Student
BIO	439	Computing for Research	Works mainly with command-line programs for data analysis, with a major focus on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class trouble-shooting and for out-of-class assignments where students work on problem-solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) with C or better: BIO 181; BIO 182 OR BIO 281; BIO 282; Credit is allowed for BIO 439 or BIO 539 or EVO 539 or MCB 539 or BIO 498 (Computing Rsrch) or BIO 598 (Computing Rsrch) or EVO 598 (Computing Rsrch) or MCB 598 (Computing Rsrch)
BIO	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
BIO	443	Applid Molecular Genetics/Genom	Nature and function of the gene; emphasizes the molecular genetic disease states; molecular biology; regulation of gene expression; genomics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): LSC 347 with C or better; CHM 233 with C or better; CHM 237 with C or better
BIO	446	Principles of Human Genetics	Molecular and cellular analysis of the human genome.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ASM 301, BIO 340, LSC 347, or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASM 446 or ASM 546 or BIO 446 or BIO 546 OR Visiting University Student
BIO	448	Maternal and Child Health	Explores how genetics, nutrition, disease ecology, clinical access, legal systems, cultural practices and historical context contribute to maternal and child health. Draws from diverse fields including epidemiology, anthropology, biology, medicine, global health, public policy and sustainability to integrate a complex understanding of the myriad influences that shape maternal and child health and thereby affect our broader society. Evaluates the translation of basic science into clinical practice and public policy as well as the roles and partnerships among local, national and international organizations for improving human health worldwide. Provides up-to-date information about basic science, public policy and global health of maternal and child health to develop skills translatable in the workforce.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prereq(s): minimum 45 hours; Credit is allowed for only ASB 448 or ASB 494 (Matrnl &Child Hlth) or ASB 548 or ASB 598 (Matrnl &Child Hlth) or BIO 448 or BIO 494 (Matrnl &Child Hlth) or BIO 548 or BIO 598 (Matrnl &Child Hlth) OR Visiting University Student
BIO	450	Advanced Developmental Biology	Current concepts and experimental methods involving differentiation and biosynthetic activities of cells and organisms, with examples from microorganisms, plants, and animals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 351 with C or better
BIO	451	Cell Biotech: Cell Culture	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they will collect data, do analysis and prepare the results for a final project presentation.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 343, BIO 353, MBB 343 or MBB 347 with C or better; Credit is allowed for only BIO 451 or BIO 551 OR Visiting University Student
BIO	452	Philosophy of Bio & Medicine	Examines fundamental topics in the philosophy of biology and their implications for medicine. Examples include biological mechanisms and evidence-based medicine, species concepts and race, reductionism and the nature of individuality, and theories of function and health. Uses these topics throughout the semester to address two overarching questions about whether biology is fundamentally different from physics and whether medicine can be reduced to applications of biology.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only BIO 452 or HPS 452 or PHI 452 or BIO/HPS/PHI 394 (Philosophy of Biology and Medicine Introduction) or BIO/HPS/PHI 494 (Philosophy of Biology and Medicine) OR Visiting University Student
BIO	453	Animal Histology	Microscopic study of animal tissues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 201, 353, or 360 or MIC 220

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BIO	461	Comparative Animal Physiology	A comparative approach to understanding the function of animal physiological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	462	Endocrine Physiology	Mechanisms of action of hormones; endocrine control of homeostasis, growth, stress responses, and reproduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	465	Neurophysiology	Detailed treatment of cellular and organismal neurophysiology and nervous system function.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better
BIO	467	Neurobiology	Introduces major areas of neurobiology, from fundamental cellular and molecular processes through systems neuroscience and neural bases of behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	471	Ornithology	Biology of birds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	472	Mammalogy	Classification, structure, habits, ecology, and distribution of mammals, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	474	Herpetology	Classification, structure, habits, ecology and distribution of reptiles and amphibians, emphasizing North American forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better OR Visiting University Student
BIO	475	Adv. Human Anatomy	Continues study of the human body. Specifically, explores and differentiates anatomic concepts at an advanced level. Additional didactic assignments designed to facilitate critical evaluation of pathophysiological principles and common misconceptions of human physiology, as well as a capstone presentation project. Grades are determined by class exercises, presentations and a series of critical thinking exercises.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR BIO 360 with C or better; Credit is allowed for only BIO 475 or BIO 494 (Advanced Study Practicum: Anatomy & Physiology) OR Visiting University Student
BIO	476	Cellular & Molecular Neuro	Explores the cellular and molecular neurobiology of the central nervous system across many levels (genetic, molecular, cellular and network) by examining the principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 360 with C or better OR Visiting University Student
BIO	477	Systems & Behavioral Neuro	Explores the functions of the nervous system across many levels (genetic, molecular, cellular and network) in regard to how neural systems produce behavior, and how problems (e.g., injury, disease) of the CNS arise and can be overcome. Examines principles underlying the function of individual neurons and how these principles give rise to integrated neuronal networks. Emphasizes critical thinking and problem solving in all evaluation exercises, including daily class participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 476 with C or better OR Visiting University Student
BIO	480	Methods of Teaching Biology	Methods of instruction, experimentation, organization, and presentation of appropriate content in biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 (or PLB 200) with C or better OR BIO 281 with C or better; BIO 282 with C or better
BIO	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
BIO	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
BIO	489	SOLUR Fellow	While performing undergraduate research at ASU, students gain exposure to contemporary issues in research excellence, mentoring skills, and professional development. Goals include: enriching individual lab research experiences of each student by bringing them together in a peer-community environment; introducing students to the resources they have at their disposal (e.g., on campus, online) to facilitate research productivity and career planning; rigorously evaluating their research processes and products, in light of their eventual professional plans.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): School of Life Sciences majors; minimum 3.50 GPA OR Visiting University Student
BIO	490	Surgical Field Placement	Advanced field placement for students exploring a career in a health profession. Requires classroom sessions and fieldwork.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 390 with C or better OR Visiting University Student

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BIO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
BIO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BIO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
BIO	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
BIO	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
BIO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
BIO	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
BIO	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	502	Trans Electron Microscopy	Theory, use, and methods of preparing biological materials for transmission electron microscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Pre/Co-requisites: BIO 504
BIO	503	Bioimaging Lab	Provides a fundamental understanding of light-based microscopy through the training and use of instruments contained within the SOLS Keck Bioimaging laboratory. Examines the use of bright field, contrast, epi-fluorescent, total internal reflective fluorescence (TIRF), confocal, multiphoton and atomic force microscopy and how they are applied to various research applications. Additional focus given toward image ethics, analysis, and presentation using programs such as Adobe Photoshop and ImageJ. During the second half of the semester, students propose and develop an experimental project, based on their graduate research, in which they collect data, do analysis, and prepare results for a final project presentation.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): BIO 504, MCB 504, or BIO 598 (Bioimaging Current Techniques)
BIO	504	Bioimaging	Lecture survey of modern techniques for imaging tissues, cells, and macromolecules, including light microscopy (e.g. video, fluorescence, confocal, multiphoton, single molecule), electron microscopy (e.g. transmission, scanning, cryogenic, tomographic) and ancillary techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	506	Clinical Gross Anatomy	Dissection of the human body with an emphasis on the application of anatomical knowledge to clinical applications.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	6		Pre-requisites: Graduate student; Credit is allowed for only ASM, BIO or MCB 506
BIO	507	Advanced Evolutionary Medicine	Explores the application of the principles of evolution to the fields of medicine and public health and places disease in the context of changing environments, both exposures and the encompassing ecology of life in which an individual is imbedded. Focuses on the biological aspects of evolutionary theory through the use of molecular genetics; population genetics; and the use of evolutionary thinking and analysis with translational, clinical and public health intersections. A foundation in evolutionary medicine is useful for students with interests including but not limited to: premed, population genomics, maternal and child health, mental health, cancer, microbiome, aging, anthropology, biology, public health, global health and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit is allowed for only ASB 408 or ASB 494 (Evol Medicine) or ASB 507 or ASB 591(Evol Medicine) or BIO 408 or BIO 494 (Evol Medicine) or BIO 507 or BIO 591 (Evol Medicine)

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BIO	510	Evolution Medicine & Gbl Hlth	Fundamentally, the practice of medicine is applied biology to improve human health and well-being and is embedded within population and global scales. Integrates the life and social sciences to tackle the current and emerging global health challenges of the 21st century with an evolutionary biology lens with current medical knowledge enhancing our understanding of health. Uses topics such as human-pathogen coevolution; development and aging; human migration; diseases (infectious, metabolic and autoimmune); and physiological and behavioral mechanisms of immunity to explore the broad arena of human health within a deep time and global context.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit for only ASM 403 or ASM 494(Evol Med & Gbl Hlth) or ASM 503 or ASM 598(Evol Med & Gbl Hlth) or BIO 403 or BIO 494(Evol Med & Gbl Hlth) or BIO 510 or BIO 598(Evol Med & Gbl Hlth)
BIO	514	Statistical Models for Biology	Fundamental concepts of statistics and how to apply a range of standard statistical tools to the analysis of biological data. Uses the software applications SPSS and R to carry out these tests, and how to identify the particular situations in which each test is appropriate. Topics include: basic probability, descriptive statistics, estimation, hypothesis testing, t-tests, analysis of variance, regression, correlation, chi-square analysis, randomization tests, and nonparametric statistics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 415 or BIO 514
BIO	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
BIO	516	Foundations of Bioethics	Advanced introduction to the theoretical and normative foundations of the field of bioethics.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
BIO	518	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518 or HPS or HST 516
BIO	519	Physiological Plant Ecology	Physiological and morphological responses and adaptations of plants to their environment, emphasizing mechanisms that influence carbon and water balance, growth, and population distributions	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 519, PLB 419 or PLB 519
BIO	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521
BIO	522	Populations: Evolutionary Ecol	Principles of population biology and community ecology within an evolutionary framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	526	Sustainability Science	Addresses core ideas in sustainability science—an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btw Hum & Env Sys) or GCU 591 (Sust Sci: Int Btw Hum & Env Sys) or SOS 591 (Sust Sci: Int Btw Hum & Env Sys)

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BIO	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
BIO	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
BIO	530	Scientific Teaching	Guides graduate students to better understand issues related to undergraduate learning in science courses, and prepares students to become more effective teachers. Topics focus on emerging research that supports active and student-centered learning activities as well as methods that include the 5Es, concept-mapping, and "backward" design. Students reflect on their own teaching philosophy, and begin building an ePortfolio documenting and validating their ability to teach effectively.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 530 or 591 (Scientific Teaching)
BIO	531	Adv. Scientific Teaching	Further develops the teaching abilities of graduate students by applying knowledge into the more advanced teaching activities including large class sizes, diverse student populations, online delivery, and technology-integrated teaching. Students have more in-depth practice fully developing lesson plans, assessments and other teaching activities based on the concepts of evidence-based teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 531 or BIO 594 (Advanced Scientific Teaching)
BIO	532	Recent Papers in Discipline	Discipline-based education research is a newly emerging scholarly field that combines the knowledge of teaching and learning with the deep knowledge of discipline-specific science content. Currently, discipline-based education research is being used to transform the way we teach undergraduate science courses. Readings in recent papers in the field of discipline-based education research, spanning the disciplines of physics, chemistry, geosciences and biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	533	K-12 STEM Education & Outreach	Trains students to create, evaluate and implement K-12 science lessons for science clubs, classrooms and other outreach activities, such as those organized by the ASU Graduate Partners in Science Education.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 494 (K-12 Stem Education) or BIO 533 or BIO 598 (K-12 Stem Education)
BIO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
BIO	541	SOLS Seminar Series	Explores cutting-edge research in the life sciences as presented by distinguished experts at Arizona State University and beyond, representing a diversity of concepts and perspectives.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	542	SOLS Current Topics	Explores current topics in the life sciences by discussing scientific experiments and results with peer scientists. Practices interpreting results and determining the significance of experimental findings, and gains experience with the culture of scientific discourse by giving short presentations, asking and answering questions.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	543	Molecular Genetics & Genomics	Advanced study of genetics, focusing on the molecular basis of inheritance and gene expression in eukaryotes and prokaryotes, and study of genomics, or the high-throughput analysis of the entire organism's genes and their function. Knowledge of general genetics recommended before registering for this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	545	Populations Evolution Genetics	Mathematical models in the description and analysis of the genetics of populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	546	Principles of Human Genetics	Examines human molecular genetics from an evolutionary perspective, particularly analysis, current debates, the Human Genome Project, disease, ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ASM 446, 546, BIO 446 or 546
BIO	548	Maternal and Child Health	Explores how genetics, nutrition, disease ecology, clinical access, legal systems, cultural practices and historical context contribute to maternal and child health. Draws from diverse fields including epidemiology, anthropology, biology, medicine, global health, public policy and sustainability to integrate a complex understanding of the myriad influences that shape maternal and child health and thereby affect our broader society. Evaluates the translation of basic science into clinical practice and public policy as well as the roles and partnerships among local, national and international organizations for improving human health worldwide. Provides up-to-date information about basic science, public policy and global health of maternal and child health to develop skills translatable in the workforce.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prereq(s): degree or non-degree seeking graduate student; Credit is allowed for only ASB 448 or ASB 494 (Matrnl & Child Hlth) or ASB 548 or ASB 598 (Matrnl & Child Hlth) or BIO 448 or BIO 494 (Matrnl & Child Hlth) or BIO 548 or BIO 598 (Matrnl & Child Hlth)
BIO	549	Phylogenetic Biology&Analysis	Basic theory and general concepts of phylogenetic inference as well as practical, hands-on experience with many of the commonly used methods for inferring and interpreting phylogenetic trees.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	551	Cell Biotechnology	Fundamentals of creating and maintaining cell culture for the purpose of experimental design and analysis. Cell culture technique, cell behavior, cell signaling and regulation, histology, transgenic fluorescent protein expression, immunocytochemistry and various bioimaging techniques including live cell, epi-fluorescent and confocal microscopy. Working with established cancer-derived cell lines and primary neural disassociated cultures, students perform various experimental techniques for cell imaging preparation and acquisition. Focuses on image analysis and presentation using ImageJ. During the second half of the semester, students propose and develop an experimental project in which they collect data, do analysis and prepare the results for a final project presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 451 or BIO 551 or BIO 598 (Cell Biotechnology Laboratory)
BIO	552	Developmental Genetics	Genetic approaches to the analysis of development during the life cycle of eukaryotic organisms, and the role of genes in the unfolding of the differentiated phenotype.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
BIO	564	Cellular Physiology & Signaling	Emphasizes the molecular basis for cell structure, function and intercellular signaling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s) degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568
BIO	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
BIO	571	Evolutionary Medicine Capstone	Provides a culminating experience in which students bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that students carry out to demonstrate their ability to integrate the core concepts of evolutionary thinking and analysis; and places disease in the context of changing environments, exposures and the encompassing ecology of life in which an individual is embedded. Demonstrations weave perspectives from biology, anthropology, public health and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Evolutionary Medicine graduate certificate student
BIO	578	Environmental Leadership & Com	America remains inactive about the ramifications of critical societal challenges such as climate change, environmental hazards and living sustainably, and less than 2% of Congress has any professional background in science. Environmental issues are no longer local and solutions cannot remain provincial. Scientists must become envoys of knowledge that is global; science is now part of an unavoidable and contentious public discussion on these issues, and we need it to catalyze solutions. Increasingly, scientists who are communicators are moving into positions of leadership, engaging with society and changing their academic institutions from within. This seminar provides leadership training and important skills for early career scientists to communicate science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 578 or BIO 591 (Environmental Leadership and Communication)
BIO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	597	Capstone	Provides a culminating experience for the MS Biology degree. Students bring together knowledge learned in prior courses in a way that is meaningful and relevant to their professional goals. Each student must summarize current knowledge on an important topic in the biological sciences, and demonstrate his or her ability to integrate core concepts of biological thinking.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	610	Intro Resp Conduct Research	Introduces ethical and regulatory issues in the nine core areas of responsible conduct of research. Discusses real and hypothetical cases that tie broad ethical considerations to current concern of scientists.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	611	Topics Resp Conduct Research	Explores a single topic in the responsible conduct of research in depth. Topic changes depending on current issues in responsible conduct of research as well as the interests of the instructor and students. Possible topics include: responsible authorship; conflicts of interest; human subjects research; and misconduct, data management, and academic integrity.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
BIO	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO or HPS 620
BIO	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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BIO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BIO	100M	The Living World	Principles of biology. Cannot be used for major credit in the biological sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	130M	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SQ	
BIO	201M	Human Anatomy/Physiology I	Studies the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Cannot be used for major credit in the life sciences.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	0.25-4	SG	
BIS	343	Social Processes in Orgs	Examines social processes and human interactions within different organizational contexts and engages in experiential learning through team-based projects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
BIS	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student
BIS	350	Diversity and Organizations	Students engage in a critical analysis of individual, cultural and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours. Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
BIS	353	Interdisciplinary Leadership	Offers interdisciplinary perspectives on the theory and practice of leadership in a range of organizational environments	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing
BIS	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
BLE	220	Foundations of SEI	Examines current educational practices and historical legal issues. Prepares teacher candidates with a provisional Structured English Immersion endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): non-Educational Studies BAE majors; ENG 101, 105, or 107 with C or better OR Visiting University Student
BLE	221	Theories Acquiring& Learn Lang	Languages are tools people use and learn to use for a variety of purposes. While nearly all people naturally acquire at least one language in their lifetime, the construct of bilingualism or multilingualism can occur as either an elective or a forced process. The context or the decision that leads to second or multiple language learning can have profound effects on the way and the extent to which those languages are learned. Examines the variables affecting both language acquisition and language learning as well as some methods to better facilitate these processes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student
BLE	322	Reading Methods BLE/ESL	Instructional/assessment strategies, including systematic, research-based phonics, vocabulary, comprehension, spelling, writing, phonemic writing in Spanish/English.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	324	Soc Studies/Diverse Lang Clsm	Social studies education standards, curriculum, and instructional strategies for English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	335	Language Diversity-Classrooms	Issues in sociolinguistics and language variation in schools with a focus on classroom interaction, instruction, curriculum, assessment, and language policy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
BLE	336	Cultury Sust&Transf Pedagogies	Prospective educators examine culturally sustaining and transformative pedagogies (CSTP). Use of CSTP frames their reflection on educator positionality, attunement to cultural and community knowledge resources in field experiences, and development of their own teacher praxis plans oriented toward CSTP.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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BLE	338	Fndations Sec Lang Acquis Dev	Introduces educators to theoretical and critical perspectives related to the nature of language, language variation and language acquisition among second language learners and bi/multilinguals, with considerations for bilingualism and biliteracy development, instruction and assessment in various K-12 education settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MLFTC teacher preparation major, concentration, or certificate student; ENG 101, 105, or 107 with C or better; minimum 30 hours
BLE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
BLE	396	Clinical Experience I	Applies course content in BLE/ESL elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	397	Clinical Experience II	Applies course content in BLE/ESL elementary education classrooms grades 1-8: emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
BLE	400	Prin of Language Minority Educ	Overview of philosophical and theoretical foundations of bilingual education and ESL models of instruction. Other topics include significant legislative and judicial measures.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
BLE	407	SEI for Secondary Students	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the 7-12 classroom.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
BLE	408	SEI for Linguistically Diverse	Examines foundations, assessment, English language learner proficiency standards, and strategies (including SEI) for the K-8 classroom.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
BLE	411	Sci Curr Instr Assess BLE/ESL	Methods, management strategies, and assessment procedures for teaching science to BLE/ESL students in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	412	Math Curr Instr Assess BLE/ESL	Teaching, management, and assessment of mathematics in K-8 BLE/ESL settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	413	Language Arts in BLE/ESL Sett	Literacy and language arts instruction; assessment of reading and writing; transition literacy skills, particularly critical reading of content.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	436	Equitable Pract Diverse Class	Provides theoretical lenses to analyze the culture of schools and classrooms and equips future educators to recognize the hidden curriculum in classroom organization, student regulation and disciplinary actions, discourse, relationships, pedagogical choices, and other environmental and curricular factors that perpetuate inequities. Explores tools and approaches to transform the educational context and to advocate for just and equitable learning experiences for historically marginalized youth.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
BLE	478	Student Teaching: BLE/ESL EED	Student teaching in BLE/ESL elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
BLE	481	Reading Practicum	Applies concepts from BLE 414. Supervised school-based experiences in teaching reading to BLE/ESL students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
BLE	511	Intro/Language Minority Educ	Historical, philosophical, theoretical, and pedagogical foundations of language minority education in the United States.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	520	ESL for Children	Examines approaches to second-language development for children congruent with recent research in second-language acquisition in children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	522	Bi/Multilingual Acq & Devlpmt	Introduces educators to theory and research related to the acquisition and development of languages among second language learners, and bi/multilinguals, with considerations to language and bi/literacy development and instruction in formal schooling contexts and other learning environments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or post-baccalaureate undergraduate student
BLE	529	Lang Assess & Eval ESL/BLE St	Assessment and evaluation of linguistic minorities; test theory, score interpretation; culturally responsive assessment; assessment of language and school achievement.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BLE	531	Ling Cult Sustaining Pedagogy	Examines asset-based approaches to educating multilingual learners that acknowledge and sustain home culture and identity (including approaches to assessment, instruction, theories of learning and development and advocacy).	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Education (Educ Multiling Learners) MA or Educ Multiling Learners Certificate stndt; BLE 534; BLE 536; BLE 537 OR non-Edu (Educ Multiling Learners) MA and non-Educ Multiling Learners Cert degree- or nondegree-seeking grad stndt
BLE	534	Lang Plcy Pwr Past Present	Examines theories, concepts and findings in language policy and planning for educating multilingual learners locally, nationally and globally.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	535	Sociolinguistic Iss/Bilingual	Surveys major theoretical issues (e.g., language situations, communicative competence, language attitudes) interrelating language, social processes, and bilingual education.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	536	Ed for Social Transformation	Theoretical and practical issues concerning education for social transformation. Recognizes features, reflections, affordances and challenges to transforming education through interactions and exchanges. Also considers assessment frameworks to assist educating multilingual learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	537	Linguistics for Educators	Main theories and approaches within linguistics and their application to language learners in educational contexts. Areas include phonetics, phonology, morphology, syntax and translanguaging.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510
BLE	538	Mthd Educate Mltilingual Lmrs	Applied methods and pedagogies for educating multilingual learners. Includes pedagogies supported by second language acquisition (including multilingual perspectives); multiliteracies; and bilingualism including heteroglossic bilingual instructional practices, translanguaging practices, critical multilingual awareness and complex language/literacy use.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BLE	561	Parent Involvement in Language	Examines issues, approaches, and strategies for improving parental and community involvement in the schooling of language minority children and youth.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; minimum 9 hours in English as a Second Language MA program
BLE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BLE	597	Capstone	Reflective, experience-based integration of theory and practice; professional development for individuals working with English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MA English as a Second Language major

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BLE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
BMD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMD	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502
BMD	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMD	510	Curr Perspectives BMD Diagnost	Seminar course using external speakers who review the current state of the biomedical diagnostics industry in terms of technology, regulation or legal issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511
BMD	513	Prin Diag Tech Immunoassays	Provides a detailed understanding of the theory and applications of advanced diagnostic assay systems and devices. Students gain knowledge in immunoassay design and validation with particular attention to the manipulation of the immune system for disease recognition. This module assumes no former knowledge of immunoassays, but some knowledge would be advantageous.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 513 or BMD 598 (Principles of Diagnostic Technology 2: Immunology)
BMD	514	Molecular Diagnostics	Survey course covering topics such as multiple types of analytes including DNA, RNA and protein; a multitude of disease application areas; major molecular diagnostic platforms; development of molecular diagnostics tests; sample preparation; and future prospects for molecular diagnostics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree or nondegree-seeking graduate student; Credit is allowed for only BMD 514 or BMD 598 (Molecular Diagnostics)
BMD	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550
BMD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BMD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Diagnostics MS student; BMD 502 or BMI 502; BMD 511; BMD 513; BMD 514; BMD 667; minimum 3.00 GPA
BMD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMD	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617
BMD	667	Regulation Medical Diagnostics	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate
BMD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	100	Intro to Biomed Engineering	Introduces engineering design methods, experimental practices, data gathering, presentation and statistical analysis. Lecture/labs focus on device design and application, including hands-on experience.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	111	Engr Perspectives/Biologic Sys	Biological concepts for the emerging engineer. Introduces biological and earth systems engineering, materials, structures, fluid mechanics, bioelectricity, and the dynamic, nonlinear nature of nature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering student OR Visiting University Student
BME	121	Programming in BME	Introduces computer programming in the context of scientific and engineering problem solving. Topics include loops, functions, pointers, data structures, and algorithms in the context of a biomedical problem. Culminates in an introduction to object-oriented programming, with a look at modern wireless (iPad and iPhone) devices for biomedical applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): MAT 265 or 270 OR Visiting University Student
BME	122	Statistics for Biomedical Eng	Introduces statistics tests in the context of common biomedical experiments. Students perform basic linear regression and correlation analyses, experiment using power analysis, generate descriptive statistics, and perform statistical tests using statistical software.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
BME	182	Biomedical Prod Dsgn & Dev I	Continuation of hands-on training and implementation of medical device product design and development skills; FDA-regulated U.S. and global medical device healthcare markets and opportunities, business development in regulated environments, medical product and project management planning, exempt and Class I medical devices, medical product component and device levels, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best-industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed OR Visiting University Student
BME	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		

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BME	200	Conservation Principles in BME	Applies bioengineering analysis and problem solving of mass, energy, and charge balances to medical and biological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s) with C or better: Biomedical Engineering BSE major; BIO 181; CHM 114 or 116; PHY 121; Pre- or corequisite(s) with C or better if completed: BME 210 or MAE 215; MAT 274 or 275 OR Visiting University Student
BME	210	Programming for Biomed Engrs	Computers are ubiquitous tools in all engineering disciplines. Biomedical engineering pushes the limits of computational power in all applications—from small computers embedded in medical devices to large computer clusters used in research projects. Understanding the fundamental operation of computers, and how to efficiently and effectively program them, are critical knowledge and skills for biomedical engineers. Covers the fundamentals of computer architecture and operation, and how to program them. Utilizes the MATLAB and Python programming languages and prepares students for applying these languages for problem solving in upper-level biomedical engineering classes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3	CS	Prerequisite(s): Biomedical Engineering BSE major; MAT 265 or 270 with C or better; Pre- or corequisite(s): BME 122 with C or better if completed; MAT 266 or 271 with C or better if completed OR Visiting University Student
BME	211	MATLAB & Mathcad in BME	Introduces the basics of MATLAB and Mathcad programming in the context of biomedical engineering conservation of mass problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; CHM 114, 116 or 118 w/ C or better; BIO 181 w/ C or better; Pre- or corequisite(s): PHY 131 or 151 w/ C or better if completed; MAT 274 or 275 w/ C or better if completed OR Visiting University Student
BME	213	BME Ethics	Explores ethical issues in biomedical and medical sciences and engineering practices and includes professional ethics, medical ethics, engineering ethics and the Biomedical Engineering Society (BMES) Code of Ethics, the ethics of human and animal tissue and subjects use in biomedical science and engineering research, responsible conduct for research, ethical issues in the design and manufacture of medical devices for developing and developed countries, and the impact of biomedical engineering solutions on society and the environment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	214	FDA & Technical Communications	Develops writing skills to factually and effectively communicate all facets of biomedical product design and development activities that are required to successfully conceive, develop, and launch a medical device into the market place using the FDA quality systems best practices that are utilized by the health care technology industry.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed OR Visiting University Student
BME	235	Physiology for Engineers	Physiology of the nervous, muscular, cardiovascular, endocrine, renal, and respiratory systems. Emphasizes use of quantitative methods in understanding physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s) with C or better: Biomedical Engineering BSE major; BIO 181; CHM 114 or 116; Pre- or corequisite(s) with C or better if completed: BME 210 or CSE 110; PHY 121; PHY 122 OR Visiting University Student
BME	282	Biomedical Prod Dsgn & Dev II	Hands-on training and implementation of product design skills that combine virtual analytical model prototype development with component and sub-assembly integration to develop both virtual and physical prototypes of a medical device product at the product architecture level and verify selected product architecture specifications from design input and earlier design process verification steps.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major OR Visiting University Student
BME	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	300	Bioengineering Product Design	The fundamentals of financial and organizational structure of business and how it influences bioengineering analysis, design, and decision making; biomedical ethics and device and drug regulation; and fundamentals of business and technical management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 100 or FSE 100 with C or better; BME 213 with C or better; BME 214 with C or better; ENG 102, 105, or 108 with C or better; minimum junior standing OR Visiting University Student
BME	301	Numerical Methods in BME	Applications of numerical methods to biomedical engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student

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BME	316	Biomechanics for BME	Biomechanics provides conceptual and mathematical tools that are necessary for understanding how living things move. Focuses on human biomechanics with an emphasis on the musculoskeletal system.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; PHY 121 with C or better; PHY 122 with C or better; Pre- or corequisite(s): BME 235 or BIO 202 with C or better if completed OR Visiting University Student
BME	318	Biomaterials	Material properties of natural and artificial biomaterials. Tissue and blood biocompatibility. Uses of materials to replace body parts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): Biomedical Engineering BSE major; BIO 181 with C or better; BIO 202 or BME 235 with C or better; CHM 114 or 116 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
BME	322	Statistics for BME	Introduces parametric and nonparametric statistics tests in the context of common biomedical experiments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better OR Visiting University Student
BME	331	Transport Phenomena for BME	Transport phenomena with emphasis on momentum, energy, and mass transport in living systems, medical devices, and other therapeutic/diagnostic applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200, 212, or 294 (Conservation Principles) with C or better; MAT 274 or 275 with C or better; PHY 121 with C or better OR Visiting University Student
BME	340	Thermodynamics for BME	Thermodynamics is a branch of science dealing with processes (chemical or mechanical) and the subsequent energy and mass transfers. Studies whether a process is favorable (possible) or unfavorable (impossible) while assessing energy and mass transfer within each specific stage of the process. The operation of living systems is heavily based on the use of chemical reactions and or mechanical processes such as beating of the heart, biochemical reactions of a drug in liver, phase equilibria. Covers the fundamental principles and laws of thermodynamics. Helps students think thoroughly about the applications of thermodynamics in biological sciences and bioengineering with the main emphasis on basic concepts and problem-solving skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BME 200 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
BME	350	Signals & Systems for Bioengrs	Applies principles of calculus and ordinary differential equations to analysis and computer processing of biosignals and linear modeling of biosystems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; MAT 274 or 275 with C or better; Pre- or corequisite(s): EEE 202 with C or better if completed OR Visiting University Student
BME	360	Control in Biological Systems	Illustrates the basic principles of control through examples from evolved and synthetic biological systems. Surveying topics including feedback and feedforward control mechanisms, insulation of circuits via modularity, and discovering optimal intervention strategies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering BSE major; BIO 353 with C or better; EEE 202 with C or better; MAT 275 with C or better; Pre- or corequisite(s): BME 362 with C or better if completed OR Visiting University Student
BME	362	Methods Molecular & Cell Bio	Gives junior-level undergraduate students hands-on experience on the methods used in molecular and cellular biology lab, especially methods to engineer or analyze DNA and protein.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; Pre- or corequisite(s): BIO 353 with C or better if completed OR Visiting University Student
BME	370	Microcomputer Apps in BME	Uses microcomputers for real-time data collection, analysis, and control of experiments involving actual and simulated physiological systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; EEE 202 with C or better; BME 350 with C or better
BME	382	Biomedical Prod Dsgn & Dev III	Continuation of hands-on training and implementation of medical device product design and development skills; experimental practices, data gathering, presentation, and statistical analysis in regards to demonstration of validation and verification tools and testing, identification and selection of customer needs, translation of customer needs, product specification development, virtual and physical prototypes, prototype product specification verification, product design and development process documentation, FDA regulatory best industry practices.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): Biomedical Engineering BSE major; BME 182 with C or better; BME 282 with C or better OR Visiting University Student
BME	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		

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BME	413	Biomedical Instrumentation	Principles of medical instrumentation. Studies of medical diagnostic instruments and techniques for the measurement of physiologic variables in living systems. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3	L	Prerequisite(s): Biomedical Engineering BSE major; BIO 202 or BME 235 with C or better; BME 350 with C or better; ENG 101, 105, or 107 with C or better; Corequisite(s): BME 423 OR Visiting University Student
BME	416	Advanced Biomechanics	Mechanical properties of bone, muscle, and soft tissue. Static and dynamic analysis of human movement tasks such as locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering major; BME 316 with C or better
BME	417	Biomed Engr Capstone Design I	Technical, regulatory, economic, legal, social, and ethical aspects of medical device systems engineering design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s) with C or better: Biomedical Engineering BSE major; BME 122; BME 300; BME 301; BME 316; BME 318; BME 331; BME 360 or 370; BME 382; ECN 211 or 212; ENG 101, 105, or 107.
BME	423	Biomedical Instrumentation Lab	Lab experience with problems, concepts, and techniques of biomedical instrumentation in static and dynamic environments. Both BME 413 and BME 423 need to be taken together to secure L General Studies credit.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1	L	Prerequisite(s): Biomedical Engineering BSE major; ENG 101, 105, or 107 with C or better; Corequisite(s): BME 413 OR Visiting University Student
BME	434	App of Bioengineer Transport	Develops mathematical models of transport phenomena in physiological systems, medical devices, and pharmacokinetic analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 331 with C or better
BME	465	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME 350 or EEE 304; Credit is allowed for only BME 465 or BME 494 (Principles Magnetic Resonance) or BME 565 or BME 598 (Principles Magnetic Resonance Spectroscopy & Imaging)
BME	467	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s) w/ C or better: Biomedical Engineering major; BME 318; BME 331; BIO 353; MAT 275; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine) OR Visiting University Student
BME	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		
BME	490	Biomedical Engr Capstone II	Individual projects in medical systems or medical device design and development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4	L	Prerequisite(s): Biomedical Engineering BSE major; BME 417 with C or better; ENG 101, 105, or 107 with C or better
BME	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6		Prerequisite(s): Barrett Honors student
BME	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BME	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		
BME	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BME	521	Adv Motor Neurosci Engineers	Overview of sensorimotor brain structures. Application of nonlinear, adaptive, optimal, and supervisory control theory to eye-head-hand coordination and locomotion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	525	Surgical Techniques	Principles of surgical techniques, standard operative procedures, federal regulations, guidelines, and state-of-the-art methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	2		Pre-requisites: Graduate Engineering students only

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
BME	526	Intro to Neural Engineering	Introduces the field of neural engineering. Neural engineering, as with all engineering fields, can be thought of as applied scientific understanding, in this case, applied neuroscience. Covers aspects of neurophysiology, neuroanatomy, neurosurgery, biophysics, electronics and signal processing; integrates these knowledge areas into neural engineering applications. Covers an entire process for conducting research in neural engineering: surgical implantation of electrodes, data acquisition, processing neural signals, decoding neural data, and controlling prosthetic devices. Provides foundation for working with neural engineering applications and conducting research in neural engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BME 526 or BME 598 (Intro to Neural Engineering)
BME	527	Biomedical Device Design	Basic phenomena behind various types of biomedical devices which measure indicators using optical, thermal and other modalities. Provides an introductory coverage of the theory and history of these devices and includes some hands-on activities to use, reverse engineer and analyze data gathered from in-class activities with currently existing devices. Uses Matlab to perform most of the analysis. Preliminarily exposes students to principles of device design and testing with consideration to FDA regulations and requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): graduate Biomedical Engineering student; Credit is allowed for only BME 527 or BME 598 (Biomedical Device Design)
BME	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556
BME	561	Clinical Neuroscience	Fundamental mechanisms that underlie diseases and disorders of the central and peripheral nervous systems. Introduces assessment and pharmacological, surgical and rehabilitative management of nervous systems disorders. Prior knowledge of neural systems is helpful. Identifies the mechanisms by which key disease and trauma states impact neural systems and how clinicians identify the locus and type of damage based on clinical and imaging criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	564	Cyber Biomedical Systems	Engineering principles involved in the modeling, design and analysis of hybrid systems that involve computers controlling and interacting with biomedical systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BME 564 or BME 598 (Cyber Biomedical Systems)
BME	565	Magnetic Resonance Imaging	Provides a foundation in the fundamental concepts of magnetic resonance imaging and some applications to measure physiological processes and changes with respect to disease. Incorporates real-time demos using a bench-top MRI system. Several local MR experts present guest lectures on specialized topics. Requires a working knowledge of the fundamentals of signal analysis and Fourier transform theory and linear algebra to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Engineering graduate student, Chemistry MS or PhD student, or Physics MS or PhD student; Credit is allowed for only BME 565 or BME 465 or BME 494 (Principles Magnetic Resonance) or BME 598 (Principles Magnetic Resonance Spectro & Imaging)
BME	566	Medical Imaging Instrumentatn	Design and analysis of imaging systems and nuclear devices for medical diagnosis, therapy and research.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	567	Tissue Eng & Regenerative Med.	Covers the fundamentals of engineering and developmental biology concepts relevant to tissue engineering and regenerative medicine (TERM). Topics covered range from basic cell biology principles to nutrient exchange parameters to cell material interactions that inform engineering design of regenerative strategies. Prior knowledge of high-level engineering mathematics (up to differential equations), engineering transport concepts (particularly mass transfer), and biology is expected.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): Biomedical Engineering graduate student; Credit is allowed for only BME 467 or BME 567 or BME 598 (Regenerative Medicine)
BME	568	HumanFactors&SystDsgnAssistTech	The field of human factors engineering as it relates to the design, development and use of assistive technology for individuals with sensory, motor and cognitive disabilities. Includes lectures, guest lectures, hands-on demonstrations and class discussions of relevant and current topics related to human-centered design of assistive technology.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	3		Prerequisite(s): BME graduate student; Credit is allowed for only BME 568 or BME 598 (IGERT: Human Factors)
BME	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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BME	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-4		Pre-requisites: Graduate Bioengineering students only
BME	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BME	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Harrington Bioengineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	101	Introduction to Bioinformatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Introduces topics in translational bioinformatics, such as sequence alignment, the Human Genome Project, gene expression analysis, genome-wide association studies, next-generation sequencing.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		

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BMI	102	Intro Pop Health Informatics	Applies information and computer science and technology to public health practice, research, policy and decision support. This new scientific area focuses on the capture, management and use of electronic public health data. Introduces the field of population health informatics and the current systems that are used for population health decision making. This is not a programming course or a mathematics course. While these backgrounds are prominent in the field, this course provides the history and context of the field and enables students to develop their own population health informatics system using techniques of their choice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	110	Introduction to Python	First in a series of courses on using the Python programming language to solve biomedical problems. Introduces Python as a language for object-oriented programming and for scripting tasks. Basic concepts and techniques of computation, data structure and software development. Examples focus on healthcare-related applications. Includes a broad knowledge of computation, Python programming, standard libraries, and commonly used techniques in data manipulation. Students develop a Python program to address a biomedical challenge in a term project.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only BMI 110 or BMI 294 (Introduction to Python)
BMI	201	Intro to Clinical Informatics	Introduces existing and future applications of biomedical informatics. Overview of history and present state of the field. Provides an introduction to biomedical informatics techniques and applications used in clinical environments. Includes searching and organizing free text information, decision analysis techniques and clinical decision support systems, and clinical applications including physician order entry used in electronic medical records. Also covers challenges in clinical informatics, including sociotechnical and cognitive issues in implementation and use.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
BMI	210	Data Structures in Python	Introduces concepts of data structures and algorithms (such as recursion, sorting, arrays, trees and dictionaries) and designing and implementation of Python code to efficiently resolve problems in biomedical research, healthcare and population health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 110 OR Visiting University Student
BMI	211	Modeling Biomedical Decisions	First semester of a three-semester course sequence surveying the methods and theories underlying the field of biomedical informatics. Explores models of medical decision making, including classical decision theory, Bayesian, and cognitive models. Also includes a component discussing evaluation methods in biomedical informatics.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	221	Knowledge Representation BMI	Introduces topics in knowledge representation and modeling, including frame-based systems, logic-based systems, rule-based systems, inference, and reasoning. Overview of history and present state of the field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	310	App Development for Pop Health	Covers core object-oriented language concepts. Enables learners to successfully apply object-oriented programming language features to develop multiplatform (work in iOS, Android and Windows phones) mobile apps. Final project allows learners to apply the knowledge and skills learned to develop a health solution.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BMI 310 or CSE 335 OR Visiting University Student
BMI	311	Modeling Biomedical Knowledge	Introduces concepts of artificial intelligence and knowledge modeling using medical informatics examples. Historical foundations and motivations of AI in medical applications; problem solving, reasoning, knowledge management, and planning as applied to medical informatics problems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	312	Modeling Biomedical Data	Third semester of a three-semester course surveying the methods and theories underlying the field of biomedical informatics. Explores methods of use in the design and maintenance of biomedical databases, machine learning techniques, information retrieval in biomedicine and other methods specific to bioinformatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	330	Topics Trans Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medicine research. Topics include bioinformatics data acquisition and management, including microarrays, database modeling and integration; analysis methodologies, including statistics and data mining; and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		

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BMI	332	Team Dynamics Healthcare IT	Teaches the fundamentals of leadership, management, and team dynamics in a project-focused software engineering environment, and with a focus on informatics and healthcare applications. Teaches students about team and group dynamics, recognizing dysfunctional teams, and helping to fostering productive group and leadership skills.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	404	Clinical Environments	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and exposes students to the clinical environments in which health care providers create, manage, and use clinical information. Students attend lectures and spend a significant portion of time examining and reporting on different clinical settings throughout the semester.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
BMI	410	Database Mgt in Health Care	Database fundamentals and the use of databases in health care. Fundamental concepts in relational database design spanning both operational and analytical use cases. Students learn and practice SQL syntax. Discusses modern implementations of databases in health care; exposes students to the most common forms of modern health care data: EHR data, claims (pharmacy and medical), and health care data models (includes health care data warehouses). When possible, exposes students to real (deidentified) data and database schemas, but synthetic data may also be used that closely matches the format it is intended to represent.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BMI 410 or BMI 394 (Database Management in Healthcare)
BMI	440	Software Engineering for BMI	Provides a survey of software engineering with application to biomedical informatics. Teaches general theories, models, and specific techniques such as requirement analyses, architecture design, system modeling, software evaluation and project management. Uses specific examples from biomedical research, patient care, clinical education and public health for illustration of the concepts. Exposes students to interdisciplinary, team-oriented approach to developing software systems for biomedical and health applications.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 310 or CSE 335 OR Visiting University Student
BMI	461	Advanced Topics in BMI I	Covers current trends and cutting-edge research areas of clinical, public health, and consumer health informatics. Particular emphasis on research that is of relevance to patients, and the healthy public, covering such topics as outbreak detection and the personal health record. Also covers research on the use of technology in medical education, and the ways in which clinical decision support systems are applied in contemporary medical practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	462	Advanced Topics In BMI II	Covers current trends and cutting-edge research areas of bioinformatics, imaging informatics, and translational science. Emphasizes informatics approaches to the novel data sources that are supplied by the next generation of methods for affordable gene sequencing, and initiatives underway to accelerate the integration of novel research findings into everyday clinical practice. Includes a series on modeling and simulation, current approaches to computer-aided diagnosis of medical images, ways in which technology can support the discovery of new knowledge, and the application of telemedicine to remotely facilitate clinical care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
BMI	465	Intro to Comparative Genomics	Explores genomic sequences and hypotheses for their structure, evolutionary history, and underlying mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only BMI 465 or BIO 455
BMI	482	Capstone I	First course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of a research project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
BMI	483	Capstone II	Second course in capstone sequence for biomedical informatics majors emphasizing the development of technical skills and effective team work within the context of an applied project in biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): BMI 482 with C or better; ENG 101, 105, or 107 with C or better
BMI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
BMI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student

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BMI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
BMI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
BMI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
BMI	501	Intro Biomedical Informatics	Overview of the field of biomedical informatics for use of computers and information in healthcare and the biomedical sciences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 501 or BMI 501
BMI	502	Foundations BMI Methods I	First semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate. Credit is allowed for only BMD 502 or BMI 502
BMI	504	Intro to Clinical Environments	Course is divided into three sections. The first section covers medical and health care concepts and terms, and discuss observational techniques. In the second portion, students investigate a variety of different clinical environments and report back to the class on their findings. The final portion summarizes the key points of information technology in these clinical environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): graduate BME or BMI major; Credit is allowed for only BMI 404 or BMI 504
BMI	505	Foundations of BMI Methods II	Second semester of a two-semester course surveying the methods and theories underlying the field of biomedical informatics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 502 with C or better
BMI	506	Clinical Decision Support	The course will provide an in-depth analysis of computer-based approaches to supporting clinical decision making for providers and patients (as well as healthy individuals, for disease prevention/health maintenance). The history of the field of clinical decision support (CDS) and the spectrum of methodologies will be reviewed. Practical issues involved in successful implementations of CDS will be discussed. The roles of standards and infrastructure will be examined. Current research topics and foci will be explored.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	507	Intro Digital Image Processing	Core course with four sections for students seeking to concentrate in biomedical imaging informatics. The first section analyzes the concepts and terms of image processing and analysis. The second section evaluates key algorithms in image processing (e.g., image filtering, Fourier transform, image restoration). The third section examines advanced image analysis methods (e.g., image segmentation, mathematical morphology, image topology, shapes and boundaries, color processing, image coding and compression, wavelet, and special effects). The fourth section develops the practical applications of image processing and analysis in medicine and biology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 507 or BME 507 or BMI 507
BMI	515	App Biostats Med & Informatics	Comprehensive treatment of the statistical methods used most often to analyze quantitative data collected in medical and biomedical informatics studies, including clinical trials, epidemiologic studies, studies of the accuracy and performance of screening and diagnostic tests, and studies to develop predictive models. Students learn to use SAS statistical software to analyze biomedical data.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	516	Adv Biomedical Data Analysis	Acquisition, conversion and organization of biological data into relevant diagnostic, therapeutic, and research information using information extraction and data mining.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 501 with C or better
BMI	517	Adv Biostats Biomed Research	Covers the use of computation as a tool for biostatistical data analysis and methods development, especially for research on multivariable regression analysis of biostatistics and health science. Major topics include understanding of hypothesis testing, regression model development; multivariable regression analyses on continuous, binary and censored outcomes; how to handle statistics issues related to regression modeling such as collinearity, overfitting and missing data. Students use the SAS and R statistical programming language to display and analyze data, and to evaluate statistical procedures and algorithms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 515; Credit is allowed for only BMI 517 or BMI 598 (Biostatistics with Computational Applications)
BMI	520	Modeling Gene Reg Networks	Computational and mathematical modeling used to approximate gene regulatory networks as well as signaling pathways and inference of model parameters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 505 with C or better; BMI 516 with C or better

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BMI	540	Problem Solving in BMI	Theory and practice of software engineering principles as they apply to large- and medium-scale clinical systems from bench to bedside.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601 with C or better
BMI	550	Translational Bioinformatics	Provides an introduction to bioinformatics methods and applications used in the field of translational medical research. Topics include bioinformatics data acquisition and management, analysis methodologies, and applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BMD 550 or BMI 550
BMI	555	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515, IEE 572, or IEE 578; Credit is allowed for only BMI 555 or CSE 572 or IEE 520
BMI	560	Teaching Biomedical Informatics	Student serves as a teaching assistant with a faculty member who is teaching either a required or elective course in the Biomedical Informatics curriculum. Such courses will generally be BMI courses but with the approval of the student's faculty program advisor may include a course that is an approved elective in the BMI program but is offered in another department within the university. The experience provides a significant teaching role, either lecturing or moderating small group sessions or laboratories. Grading class homework assignments and designing/grading examinations will also typically be part of the experience. Assisting other students outside of class and being available during office hours will also generally be part of the student teacher's role. A student may also receive 1 hour of credit for participating substantively in the design of a new course, working closely with a faculty member. Generally in such circumstances the student should then serve as course teaching assistant when it is offered for the first time (separate enrollment in this course).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Biomedical Informatics PhD student
BMI	570	BMI Symposium	Students attend the BMI Symposium Speaker Series twice a month and the student journal club discussion on alternate weeks. During the journal club weeks, each student leads a discussion on a current topic pertinent to the field of biomedical informatics.	N	SEM	Y	YGB	College of Health Solutions	College of Health Solutions	1		Pre-requisite: BMI Graduate student
BMI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student
BMI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics MS student
BMI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Health Informatics MAS, Biomedical Informatics MIP, or Biomedical Informatics MS student
BMI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): graduate Biomedical Informatics student
BMI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Biomedical Informatics Masters student

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BMI	601	Health Informatics	Offers an overview of the field of health informatics. Combines perspectives from medicine and computer science for use of computers and information in health care and the health sciences. Includes an overview of health information literacy and data standards. Covers specific applications and general methodology in health informatics using current topics in the field. Discusses evaluations of health systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	602	Programming Health Care Domain	Intensive introduction to object-oriented programming concepts focused on the unique challenges such as those related to data volume, complexity, and uncertainty inherent to applications in a health care domain. Also covers the fundamentals of algorithm analysis and data structure design. Stresses a software engineering approach to abstraction for problem decomposition and solution formulation, with object-oriented and reusability concepts introduced early. Emphasizes the use of generic data structures and abstractions from template libraries for reusability, as well as modular design. In addition, also covers basic concepts of algorithms and data structures.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	603	Health Informatics Database	Thorough coverage of the foundations of database systems and their specific use and modeling in healthcare and biomedical environments. Students learn through hands-on experience with the modeling and implementation of health-related databases using the relational approach. Topics include an overview of database models and architecture, database design, SQL, XML, and data warehousing as they are applied in clinical domains. Students are encouraged to explore database-related topics of their own, choosing ones that are relevant to a bioinformatics or clinical domain.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	604	Health Info Communication	Students learn to locate, retrieve, and store information with an emphasis on electronic search, retrieval, and storage. They also learn to assess the validity and quality of information, improve the quality of information, and how to improve the quality of, protect, and effectively communicate health information.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Informatics MAS student
BMI	605	Health Info Systems & Apps	Explores the use of information systems in different health care settings, analyzing operational and strategic objectives for their deployment. Emphasizes the analysis of the different factors that influence decision making during the process of design and deployment of systems, including human factors, hardware, software, policy, communications, and the successful management of such systems. Also covers guidelines for the design and successful deployment of systems to meet those objectives and includes discussion of architectures, components, and models. Analyzes specific case studies of successfully and unsuccessfully deployed systems.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	608	Project Mgmt Interdis Teams	Introduces students to the health care team and explores tools and techniques for establishing effective interdisciplinary teams in a health care setting, emphasizing collaborative clinical decision-making and patient management. By working in small teams, the course puts into practice these techniques, allowing students to collaborate with other health professionals to solve specific problems, provide services, or develop new understandings. Also covers the concepts, skills, tools, and techniques involved in the management of information system projects, providing an introduction to the established discipline of project management, with a specific focus on how they apply to managing information systems for a biomedical setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	610	Clinical Culture & Health Care	Designed for medical informatics students who have no significant clinical experience in the U.S. Introduces medical terminology and reviews clinical environments in which health care providers create, manage and use clinical information. Students perform observations in a variety of clinical environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Informatics MAS student

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BMI	612	Applied Data Mining	Comprehensive introduction to data mining methods and algorithms used most often to analyze data collected in biomedical informatics studies, including genomics and proteomic disease association studies, clinical trials, clinical image analysis and studies of the accuracy and performance of screening and diagnostic tests. Emphasizes assessing data quality, understanding how to select an overall approach to analysis, and presenting and interpreting the results of data mining analysis. Students learn to use Excel to effectively display data collected in biomedical research studies and Weka software to analyze data using approaches that are used commonly in biomedical studies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	613	Workflow Analysis & Redesign	Provides an overview of workflow analysis and process redesign and their use in quality improvement activities, including specification. Uses case examples to highlight key concepts and measurement concepts and covers techniques. Includes the links of systems engineering to fundamentals of decision theory, statistics and optimization. Includes discussion of current successful techniques for systems engineering. System engineering seeks to enable the successful design, implementation, deployment and maintenance of successful systems. Emphasizes gathering and analysis of customer needs for the specification and documentation of required functionality early in the system's lifecycle.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	614	Curr Persp Health Informatics	Seminar course using external speakers to discuss and review the current state of the health informatics field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BMI 601
BMI	615	Human Factors Eng Biomed App	Fundamental principles of human-computer interaction and human factors and how to apply them to real-world problems through class projects, homework, and real-world design. Focuses on learning why user-friendly interfaces can greatly improve work productivity and enhance the quality of healthcare without radically changing the underlying technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	616	Clinical Decision Support	Focuses on the major problems of human decision making in health care including causes of errors, decreased quality and increased costs. Explores the role of information technology, primarily through computer-based clinical decision support (CDS), to address these problems. Explores key methods used to provide CDS, the capabilities and limitations of current approaches, and the challenges for managing and updating the knowledge needed to deliver CDS in an enterprise setting. Origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation; and the history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Students gain hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate health policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
BMI	617	Prin Evidence-based Medicine	The origins of evidence-based decision making and policy formulation; how to use the tools and approaches that have been developed to support evidence-based decision making and policy formulation. The history and evolution of systematic review and meta-analysis as a tool to inform decisions and policies based on evidence. Hands-on experience by conducting a systematic review and a meta-analysis and using the results to draw conclusions and formulate policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Health Informatics MAS student
BMI	618	Leadership & Change Clinical	Introduces tools and techniques for leading interdisciplinary teams in health care settings. Provides an opportunity for collaboration with health care professionals to solve specific problems, provide services or develop new understandings. Covers the concepts, skills, tools and techniques involved in the management of projects with a specific focus on how they apply to managing information systems projects in biomedical settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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BMI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Biomedical Informatics PhD student
BMI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student
BMI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): Biomedical Informatics PhD student
BMY	230	How Nature Works	Teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores the process of scientific discovery and how biological knowledge can inform other disciplines. Each week investigates a new topic regarding how ecosystems and organisms function—e.g., How do ecosystems cycle nutrients? How do animals move through air, water and on land? How do organisms defend themselves against disease? Covers core concepts in biology as well as how these concepts apply to other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Credit is allowed for only BIO 230 or BMY 230
BMY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	302	Principles of Life	Explores nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. Develops participants' understanding of the deep patterns found in nature, and acts as an introduction into the methodology of biomimicry—including the review and study of life's operating conditions on Earth; the six primary principles; and their related sub-principles. Gives the knowledge necessary to bring these design guidelines into practice and provides opportunity to integrate them into one's discipline.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better
BMY	304	The Practice of Biomimicry	Explores the process of nature-based design from a methodology-based approach. Deep dives into the biomimicry process and reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluation. Introduces the art of translating biological concepts into strategies for application and building a taxonomy of design principles. Includes a practicing tools component and a final multi-week group project. Offers the structure for which biomimicry can be put to practice.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): SOS 110 with B or better OR Visiting University Student
BMY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	430	Biomimicry Practicum	Allows participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have meaningful outcomes achievable within the semester, and allow the investigation of biomimicry life's principles as well as engage students in the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based with the final deliverable having an application in a real-world setting.	N	PRA	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): BMY 230; BMY 302; BMY 304
BMY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		
BMY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
BMY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		

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BMY	501	Essentials of Biomim	Offered as a sampler of the various topics (discipline, emulate, ethos, (re)connect and iSites, human-nature connection, biomimicry thinking, and life's principles) within the discipline of biomimicry. Each week is devoted to a specific topic and is led by a different instructor. Provided a basic overview of each aspect of the discipline with ample opportunity for conversation and dialogue around the specific components, with an understanding that greater depth into each topic can be learned by taking the advanced BMY courses.	N	LEC	N	OP2	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	502	Life's Principles	Life's principles are nature's universal design guidelines based on 3.8 billion years of successful strategies across all life. With instruction by Dr. Dayna Baumeister, this 16-week online course takes participants on a deep dive of life's principles, including the review and study of life's operating conditions, the six primary principles and their related sub-principles. Gives participants the experience necessary to bring these design guidelines into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMY 501
BMY	503	BIO Taught Functionally	Biomimicry teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. Explores how biologists gather and research information and how that knowledge can inform other disciplines. Also introduces the art of translating biological concepts into strategies for application, which is then carried throughout all the courses. Students learn how to work with biologists on a biomimicry team and how to weave biology and biomimicry together. The biologists in the cohort not only learn to look at nature through the function lens, but also act as subject matter experts for their interdisciplinary teams and teaching assistants.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Pre- or corequisite(s): Biomimicry MS or Biomimicry certificate student; BMY 501
BMY	504	Biomimicry Thinking	Biomimicry thinking is the practice of biomimicry from a methodology-based approach. It is a 15-week intensive in the methodology of biomimicry that reviews how biology and biomimicry can be incorporated into the four major phases of any design process: scoping, discovering, creating and evaluating. Covers the art of translating biological concepts into strategies for application and building a taxonomy of design principles.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	4		Prerequisite(s): Biomimicry MS student or Biomimicry certificate student; Pre- or corequisite(s): BMY 501
BMY	511	Biomimicry and Design	Biomimicry is innovation inspired by nature, or the conscious emulation of nature's genius. Prepares participants to design sustainable innovations using the biomimicry philosophy and methodology. Participants complete a 16-week series of lectures and assignments to demystify the design thinking process, understand how to harness the potential of approaching challenges with a design mind, distill a design challenge, understand user needs, build a bridge between biology and design, use a methodology for discovering models from nature, abstract design principles from bio-inspired strategies, and translate those principles into sustainable innovations. Participants both with a design background and without equally experience a deep immersion into the world of biomimetic design.	N	LEC	N	OPT	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	512	Biomimicry and Engineering	Prepares participants to understand the field of engineering; identify the types of engineers and what each one does; what constrains engineers' work under, materials selected by engineers, how to present biological ideas to engineers and how to integrate ideas from their discipline into sustainable engineering designs using biomimicry principles. Most examples used are of large engineered structures. These structures play critical functions in human systems, have a significant impact on the environment and last for over a 100 years, so it is important to imbed as much sustainability into their design as possible. Requires a final team project designed to put these ideas into practice.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	516	Biomimicry and Business	Addresses business topics from the biomimicry point of view, explains mechanisms and tools for comparing and contrasting business and nature. Challenges participants to question conventional ways of conducting business and come up with new approaches based on a different point of view. Recommend BMY 502 and BMY 504 to be successful in this course.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Pre- or corequisite(s): Biomimicry MS student; BMY 501

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BMY	517	Human-Nature Connection	Grounds the emerging discipline of biomimicry as a continuation of our ancestral connection with nature. Human-Nature Connection (HNC) engages participants in an exploration of the meaning and value of connecting with nature. Topics include defining humans, nature, and our connection with nature; establishing the evolutionary, personal, and socio-cultural influences on the different expressions of this connection; and illustrating the relevance of biomimicry to the human-nature connection.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BMY	530	Virtual Design Lab Prac	Practicum designed to allow participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have a meaningful outcome achievable within the semester, and should engage the scoping, discovering, creating and evaluating phases of biomimicry thinking. Deliverables are milestone based, and the final deliverable should have application in a real-world setting.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2		Prerequisite(s): BMY 501; BMY 502; BMY 503; BMY 504; Biomimicry MS student with minimum 20 hours or Biomimicry Certificate student with minimum 13 hours; Pre- or corequisite(s): Biomimicry MS or Biomimicry Certificate student
BMY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): Biomimicry MS student; BMY 501; BMY 502; BMY 503; BMY 504
BMY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
BMY	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	GNA	College of Global Futures	School of Complex Adaptive Systems	1-4		Pre- or corequisite(s): Biomimicry MS student; BMY 501
BUA	380	Small Business Leadership	Develops leadership skills needed to form, lead, and operate a small business. Emphasizes creating a vision, research, and problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	381	Small Business Acct & Finance	Accounting and finance skills needed by small business owners to acquire, allocate, and track monetary resources and evaluate performance.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student. Must not have earned credit in ACC 382.
BUA	383	Small Bus Working Relationship	Addresses communication and the people in a business—clients, employees, suppliers, competitors, governments, family, and self development.	N	LEC	N	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	3		Pre-requisites: Non-business student with a minimum ASU cumulative GPA of 2.00 and a minimum of 56 earned hours, OR Non-degree student with a minimum ASU Cum GPA of 2.00, OR Graduate student.
BUA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Morrison School of Agribusiness	1-4		
BUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
BUS	384	Business Operations & Planning	Planning and executing plans—the what, when, where, how, and who from product/service/project idea to pay back or completion.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): SCM 300 or 303 OR Visiting University Student

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BUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 45 hours
BUS	424	Sales and Negotiations	Principles and techniques of selling, merchandising and negotiations applicable for all businesses and organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): MKT 300
BUS	434	Business Risk Management	Strategies to manage business risk: derivatives, insurance, self-insurance and public policy.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303 OR Visiting University Student
BUS	436	Frontiers in Risk Management	Highlights practices and challenges faced by firms in terms of identifying, measuring and communicating a variety of business and financial risks, as well as designing and implementing risk management strategies as a critical component of the overall strategic management process. Emphasizes a variety of financial and nonfinancial risks in a holistic framework. Develops an understanding of the risk management practices and challenges faced by firms in a variety of business settings and industries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): FIN 300, 302 or 303 OR Visiting University Student
BUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAP	120	Intro to Counseling	Provides an introduction to and broad overview of the field of counseling. Covers several counseling topics related to ethics, prevention, intervention and treatment, as well as multicultural counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
CAP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	220	Self in Multicultural Society	Covers current theories and research on culture, race and ethnicity, gender and other specific aspects of cultural diversity in a multicultural society. Explores themes, theories, topics and research related to power, privilege and oppression in the United States.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	
CAP	240	Counseling Skills	Provides an introduction to counseling skills and intervention techniques used in treatment. Focuses on active listening, self-awareness and other related skills.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	260	Careers in Counseling & Ap Psy	Provides a broad overview of the various career opportunities in counseling and applied psychology fields.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): CAP 120 or PSY 101
CAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CAP	310	Addictions I - Fdn. & Princ.	Covers the history, overview and principles of addiction as well as symptoms of co-occurring mental health issues prevalent in individuals with addictions and substance abuse disorders. Students also learn basic screening and assessment tools used to detect, evaluate and manage risks associated with individuals who have co-occurring disorders	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120 OR Visiting University Student
CAP	315	Trauma & Crisis Intervention	The role of counselors in traumatic events, crises and situations. Also introduces students to counseling skills and techniques particularly specialized for crises such as child abuse, partner violence, war, natural disasters and many others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120
CAP	320	Theor. Counseling&Psychotherapy	Provides the theoretical foundations and knowledge related to the principles of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108; CAP 120; CAP 240
CAP	325	ProfPrac & Ethics	Discusses ethical issues (confidentiality, informed consent, integrity, respect) and professional codes of conduct in the counseling field.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240 OR Visiting University Student
CAP	330	Group Counseling	Provides an overview of theories, techniques and approaches to group counseling and therapy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	335	Addiction Group Counseling	Offers an overview of the role and efficacy of group therapy in substance abuse treatment. Students learn about the different types of substance abuse treatment groups; screening and criteria for groups; group development and stages of treatment; and group leadership skills and techniques (e.g., motivational interviewing). Through weekly discussions, journal reflections and experiential activities, students learn the various techniques used in group substance abuse treatments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	340	Multicultural Counseling	Provides an overview of multicultural theory, research and practice. Topics include acculturation, identities, prejudice and other related topics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220
CAP	342	Community Outreach Prev. & Int	Provides an understanding of the methodologies in community outreach and prevention treatment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 220

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CAP	351	Issues Assess Diagnosis Trtmnt	Builds upon previous coursework. Provides students with an understanding of the major screening, assessment and diagnostic approaches for substance abuse and addictions. Students obtain knowledge of (1) models, (2) instruments, and (3) diagnostic criteria, and will be able to link this knowledge to treatment planning and interventions for addictions. Please note: the goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field. The goal of this course is not to diagnose or treat individuals with disorders. Rather, it is designed to give students a basic understanding of diagnostics and evidence-based treatments to inform work in the mental health field.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 310 with C or better
CAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
CAP	400	Advanced Research Methods	Builds upon introductory research methods and provides students with a strong foundation of research knowledge in counselling. Covers critical reading and analysis of peer-reviewed journal articles, types of research methodologies and proposal development.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; PSY 290
CAP	420	School Counseling	Provides an overview of counseling in school settings. Covers the role of school counselors in supporting youth and adolescents in many areas such as developmental disabilities/mental illness, as well as ethical and legal issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 240
CAP	440	Addictions II - Treat & Recov.	Builds upon previous course work. Covers philosophies and models of treatment, recovery, relapse prevention and continuing care in substance abuse counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): CAP 120; CAP 310
CAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 45 hours
CAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
CAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
CAP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 45 hours
CAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
CAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		
CAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-6		Prerequisite(s): Barrett Honors student
CAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-7		
CAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	501	Fundamentals Cmplx Sys Science	The enormous diversity of biological, social and technological systems is the product of evolution. As Darwin put it poetically: "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved." In short, complexity is the product of evolutionary processes. This, in turn, implies that understanding complexity requires us to understand its evolutionary origins. This course is a comprehensive introduction to the evolutionary history of complex systems and the principles and mechanisms that guide this dynamic. Covers the consequences of evolutionary history of complex systems, such as vulnerability to failure or limits of the potential of these systems to change and adapt.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	502	CAS Computation	Most systems are complex. Complex systems share a number of critical features across all domains, including the fact that all complex systems process information and perform computations in the broadest sense. Explores the informational and computational dimensions of complex systems with an emphasis on how complex systems acquire, process, store and transmit information in a systematic way across the social, behavioral and life sciences and engineering.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	503	Fund Cmplx Sys Sci: Collect.	From neurons in a brain to fish in a school to people in an economy, collectives are all around us. These are complex systems in which we understand in some detail how the individual components behave and interact, but the behavior we are interested in is at the larger scale of the aggregate. The behavior of systems like these is challenging to predict and understand largely due to the sheer number of interacting components, as well as the unintuitive way that contributions from individuals scale up to have large collective effects. Complex systems science has developed an array of conceptual tools to help understand collective behavior. Explores these foundational concepts, including emergence, scaling laws, dynamical modes and coarse-graining. Uses these tools to de-mystify powerful aggregate-scale effects, from impressive feats of swarm intelligence to potentially harmful instabilities and hysteresis.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	520	Agent-Based Modeling	Agent-based modeling is a method to study the macro-level consequences of micro-level interactions of agents representing individuals, households, firms or other type of actors. Agent-based modeling is used to study the dynamics of complex adaptive systems across different domain areas. Covers the basics of agent-based modeling including programming computer simulations and how this method is used to study complex adaptive systems in different application areas. Examines the method for scientific research, especially the various ways of doing model analysis. Students perform individual assignments.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	521	Methods Complex Sys Science	Network science within the framework of complex adaptive systems. Begins with general introductions to different kinds of networks and their basic network properties. Then progresses to the mathematics and algorithms of network analysis while learning about computational feasibility and the importance of random graph comparisons. Each week students are responsible for readings and a write-up of that week's topics. These write-ups help build toward the final assignment incorporating all topics covered in this class. Upon completion, students should feel confident incorporating networks and their associated complexity into their research and worldview.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	522	Dynamic Mtds Complex Sys Sci	Focuses on the mechanisms through which complexity emerges in evolving and dynamical network architectures. Some of the best-known examples include gene expression networks, adaptive ecological networks, and neural networks for cognitive information processing. Complex systems theory deals with dynamical systems with a large number of interacting variables. Therefore, after an introduction to graph and network theory, the course covers the basic concepts of dynamical systems theory: continuous and discrete systems, attractor dynamics, bifurcation, and chaos. After introducing information theory, devoted to the fundamentals, the second part focuses on applications, especially to network dynamics. Students acquire familiarity through the analysis of concrete examples of both deterministic and random dynamics in the form of Boolean networks and random walks.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	523	Methods CMLPX Sys Sci: Stats	Because complex systems involve a large number of interacting components, observational studies of these systems typically generate data sets of high dimension. Examples include the hundreds or thousands of distinct neurons in a brain, genes in a cell, people in a society, firms in an economy, or texts in a corpus. To make sense of such data, a diverse set of data analytic tools has been developed to summarize key properties at the population level (statistics) and characterize predictable lower-dimensional patterns (dimensionality reduction). Provides a guided tour of such tools most relevant to complex adaptive systems. With a solid foundation in inferential statistics, students encounter PCA-type linear projections, nonlinear manifold techniques, topic modeling, clustering methods, network statistics, as well as more abstract foundations for how these methods work and when they fail. Students hone their data skills by applying state-of-the-art open-source software to real-world datasets.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	540	Socioecological Complex Syst	We live in a world that is neither wholly human nor wholly natural. Human decisions and actions combine with biological processes and physical forces transform cities, rural landscapes, ecosystems and biogeography, river systems, coastlines and the atmosphere. By emphasizing the importance of networks and feedbacks, complexity science is especially helpful in providing insight into the complex interactions between the human and natural components of the socioecological systems that are so critical to our lives and wellbeing. Examines key concepts for understanding socioecological system dynamics from a complex systems perspective. Explores how methods drawn from complexity science can trace the complex web of feedbacks between social, biological and geophysical processes and help to better understand and plan for change and stability in socioecological systems. Also looks at how complexity science can help contribute to relevant policy and governance for SES.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	541	Complex Urban Systems	Despite occupying only a tiny fraction of the world's area, cities house over half of earth's human population, consume over two thirds of global energy, and emit over 70% of global CO2 emissions. It is estimated that the combined ecological footprint of earth's urban areas already exceeds the entire area of our planet, and still globally 3 million more people migrate to cities every week. Cities are also the global engines of innovation, wealth creation, and production efficiencies. Thus, cities are both drivers of unsustainable behavior and our best hope for innovating sustainable solutions. Examines key concepts for understanding the complexity of urban systems, and explores how methods drawn from complexity science can be applied to urban structures and dynamics to better understand both past and future outcomes. Shows how complexity science might contribute to relevant policy and governance of cities and whether such a contribution is advisable.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	542	Sustainability, Cmplx Systems	Sustainability challenges are complex challenges. Sustainability as a problem of complexity explores in a systematic way the interconnected nature of sustainability challenges and presents a complex systems science-based framework for developing sustainability solutions.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	543	Complexity Economics	Complexity economics is the study of economic systems as evolving, complex systems. These systems consist of interacting individuals who perceive their environments, and take actions based on multiple criteria, which in turn affect their environments and the decisions available to other individuals. Complexity economics is not an extension of conventional, neo-classical economic theory and practice, which is based on the concepts of equilibrium, optimization and aggregation. Complexity economic attempts to understand economic phenomena through concepts of evolution, emergence, path dependency and the interdependent relationships between heterogenous individuals whose actions shape their environments. This offers a new basis for theory and practice that better reflects not only real problems and scenarios, but also how individuals make decisions and how those decisions have consequences for both the environment and society.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	544	Innovation in Complex System	Innovation is a central property of complex systems. Without innovation there would be no evolution of complex systems. Explores the dynamics of innovation in complex systems across a number of different domains, including biological, social, cultural and technological innovations. Focuses on the common principles and differences guiding innovation dynamics. Also focuses on unintended consequences of innovation, such as cascading effects and innovation traps and investigates why certain systems fail to innovate. Identifies common features of innovation across complex systems.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	545	Disease as a Complex System	Disease and failure are properties of complex systems. All organisms, groups, societies, technologies, ecosystems and the planetary system are complex systems. Disease can be seen as a failure in complex system function and has, at its root cause, the breakdown of complex regulatory structures that maintain function and facilitate adaptation. Comprehensive introduction into the origins, mechanisms and consequences of disease in a number of complex systems ranging from organisms to the planet and the technosphere. Explores disease, failure and health of these systems and investigates the underlying complex systems properties that are responsible for these different states. Identifies common features of failure across complex systems.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	546	Bio-Inspired AI & Optimization	Provides a survey of a variety of algorithms for optimization and multiagent control that are inspired by natural systems. Algorithms inspired by biological or physical systems can often be viewed as idealized models of those antecedent systems. Consequently, also explores potential problems (and solutions) in these algorithms that are analogous to fundamental but less well-known issues in the biological and physical systems that inspire them.	N	LEC	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	College of Global Futures	School of Complex Adaptive Systems	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
CAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Global Futures	School of Complex Adaptive Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School of Complex Adaptive Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CAS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Complex Adaptive Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	232	Human Development	Lifespan development from conception through adulthood, with emphasis on family influences. Recognition of individuality within the universal pattern of development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
CDE	244	Children with Health Challenge	Provides a comprehensive introduction to family-centered care, psychosocial assessment of the hospitalized and chronically ill child, and techniques to support their coping. Utilizes the principles/theories of child development, and introduces the role of a child-life specialist in the promotion of effective coping through play, preparation and education among children, youth and families facing challenges related to health care and hospitalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Credit is allowed for only CDE 244 or CDE 294 (Children Facing Health Care Challenges) OR Visiting University Student
CDE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 24 hours; SOC 101, PSY 101, FAS 101, or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
CDE	337	Early Childhood Intervention	Explores how child development theory affects practice with children and families, emphasizing development of young children and early intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
CDE	338	Child Development Practicum	Supervised practicum in the Child Development Lab preparing students for work in child care centers and agencies serving young children and families.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	2-4		Prerequisite(s): minimum 45 hours
CDE	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
CDE	356	Race & Child Development	Reviews the current research and literature about the particular role of race in child development. Even though race is not a valid biological construct, it has significant social implications as it shapes how children interact and are treated by others. Through primarily class discussions/activities, presentations and papers, addresses: (1) What are the research and theoretical issues in studying race? (2) What does race and racism mean? (3) How does race influence developmental processes?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): APA 200 or APA 210 or 30 hours. Credit is allowed for only APA 356 or CDE 356 or APA 394 (Race and Child Development)
CDE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PGS 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
CDE	430	Infant/Toddler Devel in Family	Examines the development of infants/toddlers, the socialization processes of families, and the interactions of these processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 30 hours

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CDE	450	Child Dysfnc in the Family	This course will provide a focused study of the development of dysfunction within the family context. Other contextual influences will also be considered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 232, PGS 101, or SOC 101 with C or better; minimum junior standing OR Visiting University Student
CDE	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
CDE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
CDE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
CDE	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
CDE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
CDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
CDE	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)
CDE	531	Theoretical Issues Child Devel	Major developmental theories, related research, and their application to family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	533	Research Issues in Child Devel	In-depth exploration and critique of research focusing on child development in a family setting.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	534	Risk & Resilience in Children	Integrates child development, family theory, and research to understand risk and resilience in children and adolescents.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: CDE 531; FAS 500
CDE	570	Child Development for IFP	Examines development during infancy and early childhood with an emphasis on social and emotional development, mental health, and early parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	571	Infant Mental Health for IFP	Surveys the biological and environmental risk factors that jeopardize the mental health of infants and young childre; overview of prevention and intervention strategies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	572	Assessment for IFP	Developmentally appropriate assessment of mental disorders and developmental disabilities in infants, toddlers, and preschool children and parent-child relationships.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	573	Cultural Competence for IFP	Examines cultural issues impacting parent-child relationships and child rearing and the effectiveness of infant mental health and early intervention services on families of various ethnic and cultural backgrounds.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	574	Observation&Reflection for IFP	Strategies for observing infant behavior and parent-child relationships and skills for reflective, relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	575	Adv Observation for IFP	Advanced strategies for observing infant behavior and parent-child relationships and skills for reflective relationship-based intervention.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	576	Appl Research Methods for IFP	Survey and critical examination of child development, parent-child relationships, family relationships, and early intervention research and the application to IFP.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-IFP student
CDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	610	Gender Development	Examines current theories and research concerning the various aspects of gender and developmental change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	612	Children's Peer Relationships	Studies scientific theory, research, and evidence on peer relationships and social competence from early childhood through adolescence.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite(s): CDE 531 with C or better
CDE	634	Prevention & Child Development	Advanced training in research and theory-based approaches to developing and evaluating prevention programs for children at risk.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite: CDE 534
CDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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CDE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CDH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CDH	501	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives—whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
CDH	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CDH	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CED	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	250	Career Development	Covers models of the individual, the world of work, and decision making with emphasis on individual application.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
CED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
CED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
CED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
CED	501	Res & Eval. in Counseling	Introduction to the basic models of research and evaluation in the field of counseling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CED 501 or 591 (Res. & Eval. in Counseling)
CED	502	Counseling data analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate counseling research problems using statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CED 502 or CED 591 (Counseling Research Data Analysis)
CED	522	Theories of Counseling/Psychoth	Presents major theories of psychological intervention as well as underlying personality theory upon which they are based.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	523	Psychological Tests	Standardized tests in the study of the individual, with emphasis on test score interpretation in counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	527	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CED	529	Lifespan Human Development	Issues and models of human development as it occurs across the lifespan.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CED	534	Occupations and Careers	The world of work, career development, education, and training for occupational entry and mobility.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	545	Analysis of the Individual	Theory and methods commonly used in studying the individual. Observational methods, diagnostic interviews, structured, and semi-structured methods for assessing personality.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	567	Group Dynamics and Counseling	Group process factors, theory, and diversity issues determining effective interaction in small groups. Emphasis placed on lecturettes, self awareness, and experiential components.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Counseling MC or MED student OR Counseling Psychology PhD student
CED	577	Counseling Prepracticum	Focus on racial, social, and cultural factors in the development of helping relationships through integration of cognitive and affective self-awareness with counseling skills.	N	LEC	N	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student
CED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CED	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671
CED	672	Couple Family Counseling	Couple and family counseling theories. Emphasizes a systems-communication model utilizing cocounseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student
CED	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Counseling Graduate student

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CED	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate student
CEE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	HU	Credit is allowed for only CEE 181, FSE 181, or SOS 181
CEE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CEE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student
CEE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CEE	281	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	300	Engineering Business Practice	Engineering economic principles, cost/benefit analysis, project financing and delivery, management of engineering design, business practices, ethical and professional responsibilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	L	Prerequisite(s): Engineering BSE major; ENG 101, 105, or 107 with C or better; MAT 267 with C or better; minimum junior standing OR Visiting University Student
CEE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212 or CNE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CEE	341	Fluid Mech for Civil Engineers	Fundamental principles and methods of fluid mechanics forming the analytical basis for water resources engineering. Conduit and open channel flow.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engr BSE major; CEE 212 with C or better; CEE 213 with C or better OR Environmental Engr BSE major; EVE 214 with C or better; Pre- or corequisite(s): CEE 384 or MAE 384 with C or better if completed OR Visiting University Student

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CEE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering BSE, Construction Engineering BSE, or Environmental Engineering BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student
CEE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CEE	361	Intro to Environmental Engr	Concepts of air and water pollution; environmental regulation, risk assessment, chemistry, water quality modeling, water and wastewater treatment systems designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 with C or better; CHM 114 or 116; Pre- or corequisite(s): IEE 380 OR Visiting University Student
CEE	372	Transportation Engineering	Fundamental background of highway and traffic engineering in the areas of planning, design, and operations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 212 with C or better; CEE 213 with C or better; Pre- or corequisite(s): IEE 380 OR Visiting University Student
CEE	384	Numerical Methods for Engrs	Numerical methods and computational tools for selected problems in engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	CS	Prereq(s) with C or better: Fulton Engr undergrad; MAT 274 or 275; MAT 242 or 343 (or 342 for non-MAE major); Pre- or corequisite(s): MAT 267 or 272 with C or better if completed; Credit allowed for only MAE 384 or CEE 384 OR Visiting University Student
CEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3	(L or HU) & H	Prerequisite(s): Civil Engr BSE major; CEE 300 with C or better; ENG 101, 105, or 107 with C or better OR non-CEE junior or senior; ENG 101, 105, or 107 with C or better; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CEE	412	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 412 or 511 OR Visiting University Student
CEE	420	Steel Structures	Behavior of structural components and systems. Design of steel members and connections. Load and resistance factor design methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 420 or CNE 420 OR Visiting University Student
CEE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CEE	423	Structural Design	Analysis and design of reinforced concrete steel, masonry, and timber structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 421 with C or better; Pre- or corequisite(s): CEE 420 with C or better if completed
CEE	432	Developing Software Engr Appls	Matrix and computer applications to structural engineering and structural mechanics. Stiffness and flexibility methods, finite elements, and differences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; Credit is allowed for only CEE 432 or CEE 532

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CEE	440	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student
CEE	441	Water Resources Engineering	Applies the principles of hydraulics and hydrology to the engineering of water resources projects; design and operation of water resources systems; water quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Environmental Engineering BSE major; CEE 341 with C or better
CEE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CEE	462	Unit Operations Environ Engr	Design and operation of unit processes for water and wastewater treatment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 with C or better OR Environmental Engineering BSE major; EVE 302 with C or better OR Visiting University Student
CEE	466	Urban Water System Design	Capacity; planning and design of water supply; domestic and storm drainage; and solid waste systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 341 with C or better; CEE 361 with C or better OR Environmental Engineering BSE major; CEE 341 with C or better; EVE 261 with C or better OR Visiting University Student
CEE	467	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 361 or MIC 220 with C or better OR Environmental Engineering BSE major; EVE 303 with C or better; Credit is allowed for only CEE 467 or CEE 567 OR Visiting University Student
CEE	470	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): CEE 361; Credit is allowed for only CEE 470 or CEE 494 (Sustainable Environmental Biotechnologies) or CEE 570 or CEE 598 (Sustainable Environmental Biotechnologies) OR Visiting University Student
CEE	474	Transportation Systems Planning	Transportation systems modeling procedures, travel characteristics analysis, traffic predictions, transportation systems management, and transit planning methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; CEE 384 with C or better OR Visiting University Student
CEE	475	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 372 with C or better; Credit is allowed for only CEE 475 or CEE 576
CEE	481	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 321 with C or better; CEE 351 with C or better; CEE 372 with C or better; Credit is allowed for only CEE 481 or CEE 585
CEE	483	Highway Matl, Constr, Quality	Properties of highway materials, including aggregates, asphalt concrete, and portland cement concrete; construction practice; material delivery, placement, and compaction; quality control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 351 with C or better; CEE 372 with C or better; CEE 353 with C or better; Credit is allowed for only CEE 483 or CEE 583 OR Visiting University Student
CEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		
CEE	485	Sustainable CEE Systems Engrg	Provides working knowledge of operations research methodologies, both the traditional and more modern metaheuristic techniques, to evaluate sustainable civil engineering systems and quantitatively evaluate project alternatives involving single or multiple goals.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering BSE major; CEE 300; MAT 242 with C or better

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CEE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	4	L	Prereq(s): ENG 101, 105, or 107 with C or better; Civil Engr; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR Constr Engr; CEE 321, CNE 321; CEE 351, CNE 351 OR Envir Engr; CEE 341; EVE 302; EVE 303; Credit is allowed for only CEE 486 or CNE 486
CEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6		Prerequisite(s): Barrett Honors student
CEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-6	L	Prerequisite(s): Barrett Honors Engineering student; ENG 101, 105, or 107 with C or better
CEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		
CEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-3		
CEE	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)
CEE	506	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
CEE	507	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree-or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS596 (Urban Infrastr Anatomy & Sustain Dev)
CEE	511	Pavement Analysis and Design	Design of flexible and rigid pavements for highways and airports. Surface, base, and subgrade courses. Cost analysis and pavement selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 412 or CEE 511
CEE	512	Pavement Performance and Mgmt	Pavement management systems, including data collection, evaluation, optimization, economic analysis, and computer applications for highway and airport design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil Engineering or Construction Engineering graduate student
CEE	513	Pavement EMR	Provides the necessary information for pavement engineers to evaluate, identify, and select reliable and cost-effective rehabilitation alternatives for existing Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) pavements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	514	Bituminous Materials and Mix	Types of bituminous materials used in pavement mixtures. Chemical composition, physical properties, desirable aggregate characteristics, optimum asphalt contents, superpave asphalt binder, mixture design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Graduate Civil Engineering student

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CEE	515	Properties of Concrete	Materials science of concrete. Cement chemistry, mechanisms of hydration, interrelationships among micro- and macro-properties of cement-based materials. Mechanical properties, failure theories, fracture mechanics of concrete materials. Cement-based composite materials and the durability aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	516	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil, Environmental, and Sustainable Engineering graduate student; Credit is allowed for only CEE 516 or SOS 534
CEE	521	Stress Analysis	Introduces tensors: kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE graduate student; Credit is allowed for only CEE 521 or MAE 520
CEE	523	Structural Damage	Fundamental mechanisms of damage in infrastructural materials from both imposed mechanical and environmental loading. Covers assessment of damage through noninvasive tools involving stress-wave, electrical, electro-chemical, radiographic and optical techniques. Methods for strengthening of structural elements and selected methods of design of strengthening systems for concrete and steel structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil or Construction Engineering student; Credit is allowed for only CEE 523 or CEE 598 (Structural Damage Evaluation and Strengthening)
CEE	526	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Engineering student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527
CEE	527	Advanced Concrete Structures	Ultimate strength design. Combined shear and torsion. Serviceability. Plastic analysis. Special systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	530	Prestressed Concrete	Materials and methods of prestressing. Analysis and design for flexure, shear, and torsion. Prestress losses due to friction, creep, shrinkage, and anchorage set. Statically indeterminate structures. Design of flat slabs, bridges, and composite beams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	532	Developing Software Engr Appls	Fundamentals of engineering software development and object-oriented programming. Programming in C++. Development of matrix toolbox. Introduces finite element method. Computer graphics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student; Credit is allowed for only CEE 432 or CEE 532
CEE	533	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
CEE	536	Structural Dynamics Civil Engr	Free vibration and forced response of discrete and continuous systems, exact and approximate methods of solution, response spectra, computational techniques, special topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Construction Engineering or Engineering CEE graduate student
CEE	540	Groundwater Hydrology	Physical properties of aquifers, well pumping, subsurface flow modeling, unsaturated flow, numerical methods, land subsidence, and groundwater pollution.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	541	Surface Water Hydrology	Hydrologic cycle and mechanisms, including precipitation, evaporation, and transpiration; hydrograph analysis; flood routing; statistical methods in hydrology and hydrologic design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	543	Water Resources Systems	Theory and application of quantitative planning methodologies for the design and operation of water resources systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	545	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models and systems. Rain-runoff models. Hydrologic design. Concepts, properties and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS, MSE or PhD major; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology)
CEE	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 546 or GLG 546 or GLG 598 (Advanced Watershed Hydrology)

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CEE	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
CEE	550	Soil Behavior	Physicochemical aspects of soil behavior, stabilization of soils, and engineering properties of soils.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	551	Advanced Geotechnical Testing	Odometer, triaxial (static and cyclic) back pressure saturated and unsaturated samples, pore pressure measurements, closed-loop computer-controlled testing, in-situ testing, and sampling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	552	Soil Improvement	Physical, chemical and biological methods for improving (modifying) the properties of the ground for engineering purposes; the applicability of these techniques to different ground conditions (e.g., sand, silt, clay) and design objectives (e.g., erosion control, stability, liquefaction mitigation); design of ground improvement programs for common ground modification techniques used in practice.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering student; Credit is allowed for only CEE 552 or CEE 598 (Soil Improvement)
CEE	553	Advanced Soil Mechanics	Applies theories of elasticity and plasticity to soils, theories of consolidation, failure theories, and response to static and dynamic loading.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	554	Shear Strength/Slope Stability	Shear strength of saturated and unsaturated soils strength-deformation relationships, time-dependent strength parameters, effects of sampling, and advanced slope stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	555	Advanced Foundations	Deep foundations, braced excavations, anchored bulkheads, reinforced earth, and underpinning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	557	Geoenvironmental Engineering	Environmental site assessment, solid waste management, waste containment system design, soil and groundwater remediation, soil erosion control, brownfields development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	558	Unsaturated Soil Mechanics	Advanced unsaturated soil mechanics theory, including introduction of stress-state variables and constitutive relationships for unsaturated flow and stress-strain applications. Knowledge of CEE 351 or equivalent material is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	559	Geotechnical Earthquake Engr	Characteristics of earthquake motions, selection of design earthquakes, site response analyses, seismic slope stability, and liquefaction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Engineering CEE or Construction Engineering graduate student
CEE	560	Soil/Groundwater Remediation	Presents techniques for remediation of contaminated soils and groundwaters with basic engineering principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	561	Phys-Chem Treat/Water & Waste	Theory and design of physical and chemical processes for the treatment of water and wastewaters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	562	Environ Biochem/Waste Treatmnt	Theory and design of biological waste treatment systems. Pollution and environmental assimilation of wastes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3-4		Pre-requisite: Engineering CEE Graduate student
CEE	563	Environmental Engineering Chem	Analyzes water, domestic and industrial wastes, lab procedures for pollution evaluation, and the control of water and waste treatment processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	564	Contaminant Fate and Transport	Fate and transport processes with emphasis on governing equations and parameters relevant to the migration of chemicals in the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	565	Adv Environ Biotechnology	Emerging topics in environmental biotechnology and related problem-solving techniques.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); CEE 562 and 567; Credit is allowed for only CEE 565 or 598 (Advanced Environmental Biotechnology)
CEE	566	Water Reuse and Reclamation	Reuse and reclamation of water, tertiary treatment technologies of water for reuse applications, cloth filtration and UV disinfection, agricultural reuse and engineering, landscape irrigation, industrial reuse, environmental restoration, groundwater recharge, direct and indirect potable reuse, water reuse planning and dual distribution systems, storage requirements.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 566 or CEE 598 (Water Reuse & Reclaim)
CEE	567	Environmental Microbiology	Overview of the microbiology of natural and human-impacted environment, microbial detection methodologies, waterborne disease outbreaks, risk assessment, and regulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Engineering CEE Graduate student; Credit is allowed for only CEE 467 or 567
CEE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CEE 569 or CHE 469 or CHE 569

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CEE	570	Sust. Environmental Biotech	Introduces principles of green chemistry and green engineering and their integration in the design of sustainable bioengineering and biotechnology applications that protect environmental quality and human health.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisites: Civil, Environmental and Sustainable Engineering MS, MSE or PhD student; Credit is allowed for only CEE 470, 494 (Sustainable Environmental Biotechnologies), 570 or 598 (Sustainable Environmental Biotechnologies)
CEE	572	Life Cycle Assess Civil Engin	Concepts of the life cycle assessment (LCA) framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposure to tools and data sources occur throughout the course; presents approaches for evaluation of sensitivity and uncertainty of results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): graduate Civil Engineering or Construction Engineering major
CEE	573	Transportation Operations	Driver, vehicle, and roadway characteristics; traffic control devices; traffic engineering studies; and transportation system management measures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student
CEE	576	Highway Geometric Design	Design of visible elements of roadway, design controls, at-grade intersections, freeways, and interchanges.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Engineering CEE Graduate student; Credit is allowed for only CEE 475 or 576
CEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	581	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student; Credit is allowed for only CEE 581 or SOS 552
CEE	582	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): Civil, Environmental, and Sustainable Engineering graduate student; Credit is allowed for only CEE 582 or SOS 515
CEE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Prerequisite(s): Civil, Environmental, and Sustainable Engineering or Construction Engineering graduate student; Credit is allowed for only CEE 483 or CEE 583
CEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student
CEE	585	Civil Engineering Project Mgmt	Civil engineering project management and administration, planning and scheduling, cost estimating and bidding strategies, financial management, quality control and safety, and computer applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	3		Prerequisite(s): MS, MSE or PhD Civil, Environmental and Sustainable Engineering major. Credit is allowed for only CEE 481 or CEE 585
CEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Engineering CEE Graduate student
CEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil, Environmental, and Sustainable Engineering Graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering MS or MSE student
CEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-4		Prerequisite(s): Civil, Environmental, & Sustainable Engr MS, Civil, Environmental, & Sustainable Engr MSE, Civil, Environmental, & Sustainable Engr PhD, Construction Engr MSE, Environmental Engr MS, or Sustainable Engr MSE graduate student
CEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering MS or MSE student
CEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-12		Pre-requisite: Civil Engineering PhD student
CEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Pre-requisite: Civil Engineering PhD student
CEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1		Pre-requisite: Civil Engineering PhD student
CEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Civil, Environmental and Sustainable Eng Program	1-15		Prerequisite(s): Civil Engineering PhD student
CEL	100	Great Ideas Politics & Ethics	Introduces fundamental debates and ideas of politics in both the West and beyond. Surveys ancient, medieval and modern thinkers in the Greek, Jewish, Christian and Muslim traditions, tracing their influences on contemporary debates with focus on the great questions of human nature, social and political life, and the relationship between religion and politics. Studies both the ideas and historical statesmanship of such figures as Plato, Cicero, Tertullian, Aquinas, Saadyah Gaon, Maimonides, Al-Farabi, Ibn Rushd (Averroes) and Al-Ghazali, as well as various leaders and writers from modernity in America and abroad. Includes separate discussion to encourage active learning; expects students to write analytical papers and make a class presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 100 or CEL 194 (Great Ideas of Politics and Ethics)
CEL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	200	Great Debates in Amer Politics	Introduces fundamental ideas and debates about liberty and equality in American thought from the colonial era to the present, focusing on major political figures and issues--ideas that continue to shape political debates in 21st-century America, thus providing crucial foundations for future leadership roles in either public affairs or the private sector. A major theme is the tension between liberty and equality and between constitutionalism and democracy, in three centuries as a democratic, commercial republic.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 200 or CEL 294 (Great Debates in American Politics and Economics)

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CEL	235	Debating Amer Constitutionalism	Examines the arguments and questions raised during the debates over the 1787 Constitution, which provide resources to understand and contribute to contemporary political debates. Reviews fundamental issues such as political power, federalism, republicanism, representation, separation of powers, protection of rights, slavery and the character of the people and their leaders.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Credit is allowed for only CEL 235 or CEL 294 (Federalists, Anti-Federalists & Enduring Debate)
CEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	300	Debating Capitalism	Explores and debates the politics, economics and morality of "capitalism"--the system of society that allows space for markets, profit-seeking and money-making. Readings cover the period from antiquity to modern commercial society. Authors studied include Aristotle, the Apostles, Aquinas, Locke, Franklin, Smith, Marx and Weber. Also serves as a broad introduction to the study of political economy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 300 or CEL 394 (Capitalism and Great Economic Debates) OR Visiting University Student
CEL	305	Pol Philosophy & Statesmanship	Examine the themes of justice and leadership in democracy and war through the texts of classical political thinkers, including Plato's Republic, Aristophanes' Clouds, Aristotle's Politics and Ethics, and Thucydides' account of The Peloponnesian War. Investigates questions of political leadership, ambition and the common good. Proceeds through discussion and student-led presentations of the big questions these texts raise.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 305 or CEL 394 (Classical Political Philosophy & Statesmanship)
CEL	320	Debating Modern Pol Liberty	Examines crucial debates in modern political thought, especially in the United States. A focus is defining what is distinctive about "modern thought," with recourse to Tocqueville's Democracy in America on the difference between ancien régime monarchies and modern liberal democratic polities. Other primary readings include works from such seminal moderns as Machiavelli, Hobbes and Locke, but America (not Europe) is the ultimate focus. Queries the core documents and ideas of the American Founding, and discerns the complex interplay of classical republican and liberal intellectual traditions. Close reading of The Federalist and selected Anti-Federalist writings prepare for a broader re-examination of the American political tradition, concluding with the ongoing dispute among progressivism, socialism and conservatism.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 320 or CEL 394 (Mod Political Thght:Orgns & Debats abt Mod Liberty)
CEL	345	Modern Economic Classics	Explores the ideas and writings of the leading economic thinkers of the last 100 years. Emphasizes those thinkers who have had a major impact on public policy. Thinkers covered include Keynes, Hayek, Schumpeter, Polanyi, Galbraith, Friedman and Piketty. Also attends to the way economics and, more generally, social science have increasingly shaped public policy over the course of the last century.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 345 or CEL 394 (Cissscs of Mod Ecnmic Thght:Smith to Hayek & Beyond)
CEL	350	Philosophy, Politics&Economics	Prepares the foundation for students to become active participants, as citizens and leaders, in a liberal democratic society that faces an uncertain future. Provides familiarity with core conceptual tools provided by philosophy, politics and economics, and an appreciation for the foundation they provide together to address social and political uncertainties we face today as well as in the future. Reliance on any one disciplinary set of tools and skills is useful, of course, but the real challenges of any liberal democracy are met by neither technocratic nor bureaucratic solutions. They require an awareness of the relevance of ethics, politics and economics, as well as an appreciation for the limitations of each and the necessity of thinking through their interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 350 or CEL 394 (Philosophy, Politics and Economics) OR Visiting University Student

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CEL	375	Politics, Leaders & Revolution	Examines political thought and political leadership in the era of the American, French, Haitian and Latin American Revolutions. Begins with a look at Enlightenment political thought, focusing on natural rights, constitutionalism and political economy. Then considers leading political ideas connected with each of the great upheavals that began with the American Revolution and ended, 50 years later, with the independence of Latin America. Examines the record of political leadership during the same episodes, via biographies of figures such as Washington and Jefferson, Siéyes and Robespierre, Toussaint and Napoleon, Bolivar and San Martin.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 375 or CEL 394 (Politics & Leadership in the Age of Revolution)
CEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
CEL	475	Statesmanship & Am Strategy	Discusses great ideas and figures in political leadership and statesmanship, from ancient Greece and early modern Europe to America's founding and the present global uncertainty, especially the major arguments about war, peace and international affairs—ideas that shape foreign policy and grand strategy debates in the 21st century, thus providing crucial foundations for future leadership roles. Major thinkers and episodes include Thucydides, Plutarch, Montesquieu, George Washington, Lincoln, Truman and the Cold War, and Reagan, as well as contemporary debates about America's post-Cold War strategies for its leadership role in global affairs. Incorporates a Marshall brief (a policy presentation) and a group simulation exercise.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CEL 475 or CEL 494 (Statesmanship and American Grand Strategy)
CEL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		
CEL	485	Capstone	Integrates theory and practice by studying selected topics of the intellectual foundations for leadership with exemplars of leadership and statesmanship, culminating in a research presentation and paper.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 60 hours
CEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		
CEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-6		
CEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-7		
CEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-3		
CEL	501	Literary Leaders	Examines literary leaders, both in respect to depictions of leadership in works of classical and compelling literature, as well as literary authors who led the way and set the standards in their respective genres.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 501 or CEL 598 (Literary Leaders)

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CEL	503	Political Philosophy & Justice	Provides an overview of the four major periods of political thought—ancient, medieval, modern and post-modern—and engages students in close readings of classic texts from each of these periods. The concept of justice serves as an organizing theme, complemented by analyses of other political concepts such as virtue, the common good, natural law, rights, liberty and equality. Texts include: Plato's Republic, Aristotle, Politics, St. Thomas Aquinas' Summa Theologica, Machiavelli's The Prince, Thomas Hobbes' Leviathan, John Locke's Second Treatise of Government, Hamilton, Madison, Jay's The Federalist and John Rawls' A Theory of Justice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	510	Classic Texts in Nat Sci & Phi	Studies the development of natural philosophy and theories of scientific knowledge from Plato and Aristotle to Newton and Darwin. Gives particular attention to the period known as the Scientific Revolution, inspired most famously by Francis Bacon. Explores the relationships among natural philosophy, epistemology, moral philosophy and political philosophy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	513	Classic Txts in Ldrshp/Stsmnshp	Encounters classic texts featuring analyses and discussions of important historical leaders and their actions. These texts both situate examples of leadership and statesmanship in their historical context, and highlight timeless principles of wise and effective leadership. Texts include Thucydides' History of the Peloponnesian War, Plutarch's Lives, Cicero's On Duties, Shakespeare's histories, and the writings and speeches of Abraham Lincoln.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 513 or ENG 513
CEL	520	Classic Txts in Fnds of Logic	Provides an introduction to the principles of logical thought through close readings of Euclid's Elements and Aristotle's Organon. Students learn and demonstrate Euclidean geometric proofs in class, and reflect in discussion upon the relationship between Euclidean geometry and the logical principles analyzed in Aristotle's works.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-4		
CEL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Civic & Economic Thought and Leadership	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CEN	503	Algo for Comp-Aided Desn of DI	Provides the algorithmic underpinnings of CAD (Computer-Aided Design) tools for digital systems—from high-level algorithmic specifications down to an optimized network of logic cells. Covers the underlying theory and algorithms that have been incorporated into many commercial tools over the past two decades. Covers behavioral to RTL (Register-Transfer Level) synthesis, and from RTL to logic, including combinational and sequential network optimization, gate and interconnect timing models, retiming of sequential networks, clock tree design and optimization. To be successful in this course, students need an undergraduate background in combinational and sequential logic design, discrete mathematics, and a strong background (preferably at the graduate level) in fundamentals of data structures and algorithms; strong experience in programming (C or C++) and coding and documentation standards. (All code developed in class is in Python).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Scie or Comp Engrn or Elect Engrn graduate student; Credit is allowed for only CEN 503 or CEN 591 (Digital Logic Synthesis&Verifi) or CEN 598 (Algo Synth & Opt Digital Sys) or CSE 591 (Digital Logic Synthesis&Verifi)
CEN	571	Hardware Accele and FPGA Compu	Graduate students collaboratively work on challenging class projects that focus on designing and optimizing hardware accelerators for computationally intensive algorithms to advance real-life applications. Topics include energy-delay models, timing, circuit optimization, architecture techniques, architecture flexibility, DSP arithmetic, data flow control, and field-programmable gate (FPGA) essentials. In order to be successful in this course, students should have prior knowledge of at least one of the following topics: (1) digital integrated circuits and VLSI systems; or (2) a domain of computational algorithms, e.g., digital signal processing, machine learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, or Electrical Engineering graduate student; Credit is allowed for only CEN 571 or CEN 598 (Hardware Acceleration and FPGA Computing)
CEN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CEN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CEN	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CEN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		
CGF	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-6		Prerequisite(s): Barrett Honors student
CGF	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-7		
CGF	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-3		
CGF	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CGF	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	College of Global Futures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHE	211	Intro to Chemical Processing	Applies chemical engineering analysis and problem solving to chemical processes material and energy balance methods and skills.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHM 116 with C or better; MAT 266 or 271 with C or better OR Visiting University Student
CHE	231	IntroTransport Phenom I:Fluids	Transport phenomena, with emphasis on fluid systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 211 with C or better; MAT 267 or 272 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed
CHE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		

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CHE	334	Intro TP II:Heat/Mass Transfer	Applies heat and mass transport principles. Design of heat exchangers and continuous contactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; MAT 275 with C or better OR Visiting University Student
CHE	342	Intro Applied Chem Thermodyn	Applies conservation and accounting principles with nonideal property estimation techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
CHE	352	Chemical Engineering Lab I	Engineering lab equipment, data collection and analysis; strengthens ability to generate written reports and oral presentations; reinforces teamwork skills; strengthens and extends the understanding of earlier technical contents in the curriculum; strengthens abilities in recognizing and understanding key issues associated with lab and process safety.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 334 with C or better; CHE 342 with C or better; ENG 101, 105, or 107 with C or better; PHY 131 with C or better OR Visiting University Student
CHE	384	Numerical Methods Chem Eng	Study and application of numerical methods in solving problems commonly encountered in chemical engineering. Emphasizes chemical engineering applications using MATLAB and Excel. Roots, linear algebraic equations, matrices, curve fitting, differentiation, integration, ordinary and partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s) w/C or better: Chm Engr BSE major; MAT 242, 342, 343; MAT 274, 275; Pre- or coreq(s): MAT 267, 272 w/C or better if completed; Credit allowed for CEE 384, CHE 384, CHE 394 (Num Mths for Chm Eng), or MAE 384 OR Visiting University Student
CHE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		
CHE	432	Principles Chem Engr Design	Multicomponent distillation, engineering economics, equipment sizing and costs, plant operation economics, process safety, and simulation and optimization techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	433	Modern Separations	Design of modern separation equipment in chemical engineering other than fractionation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better
CHE	442	Intro Chemical Reactor Design	Applies kinetics to chemical reactor design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CHE 334 with C or better; CHE 342 with C or better; Credit is allowed for only CHE 442 or CHE 505
CHE	451	Chemical Engineering Lab II	Operation, control and design of experimental and industrial process equipment; strengthens abilities in recognizing and understanding key issues associated with lab and process safety; group research projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 352 with C or better; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	461	Process Dynamic Control	Process dynamics, instrumentation, and feedback applied to automatic process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	CS	Prerequisite(s): Chemical Engineering BSE major; CHE 384 with C or better; CHE 433 with C or better; CHE 442 with C or better OR Visiting University Student
CHE	462	Process Design	Applies economic principles to optimize equipment selection and design; process safety; development and design of process systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3	L	Prerequisite(s): Chemical Engineering BSE major; CHE 432 with C or better; CHE 433 with C or better; CHE 442 with C or better; ENG 101, 105, or 107 with C or better
CHE	468	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prereq(s): Chem Eng BSE mjr; CHE 231 w/ C or better; CHM 233 w/ C or better; Credit for only CHE 468 or CHE 568 or CHE 494(PolyPrin & Proc) or CHE 598(PolyPrin & Proc) or CHM 494(PolyPrin & Proc) or CHM 598(PolyPrin & Proc) OR Visiting University Student
CHE	469	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engr BSE major; CHE 342 OR Civil Engr BSE major; CEE 361 OR Environmental Engr BSE major; EVE 302 OR Materials Scie & Engr BSE major; MSE 330; Credit is allowed for only CEE 569 or CHE 469 or CHE 569 OR Visiting University Student

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CHE	473	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 231 with C or better; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells) OR Visiting University Student
CHE	475	Biochemical Engineering	Applies chemical engineering methods, mass transfer, thermodynamics, and transport phenomena to industrial biotechnology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisite: CHE 334 and 442
CHE	477	Inorganic Membrane & Thin Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): CHE 433 or MSE 420; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Films) or CHE 598 (Inorganic Membrane and Films)
CHE	478	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chem Engin BSE major; CHM 116 w/ C or better; CHE 231 w/ C or better; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Tech) or CHE 598 (Biomass Energy Conversion Tech) OR Visiting University Student
CHE	479	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Chemical Engineering BSE major; CHE 342 with C or better; CHE 442 with C or better; Credit is allowed for only CHE 479 or CHE 494 (Microbial Bioprocess Engineering) or CHE 598 (Microbial Bioprocess Engineering)
CHE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		
CHE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CHE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
CHE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
CHE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
CHE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-3		

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CHE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MSE 518, EEE 518, MAE 518, MSE 475, or CHE 518
CHE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
CHE	543	Thermodynamics of Chemical Sys	Classical and statistical thermodynamics of nonideal physicochemical systems and processes; prediction of optimum operating conditions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	544	Chemical Reactor Engineering	Reaction rates, thermodynamics, and transport principles applied to the design and operation of chemical reactors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	561	Advanced Process Control	Dynamic process representation, linear optimal control, optimal state reconstruction, and parameter and state estimation techniques for continuous and discrete time systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
CHE	568	Polymer Principles&Processing	Covers relevant polymer synthesis techniques, molecular and structural characterization methods, elastic deformation and viscoelasticity models related to processing, and block polymer morphology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 468 or CHE 568 or CHE 494 (Polymer Principles & Proc) or CHE 598 (Polymer Principles & Proc) or CHM 494 (Polymer Principles & Proc) or CHM 598 (Polymer Principles & Proc)
CHE	569	Air Quality Engineering	Chemical and physical processes by which air pollutants are generated and controlled with an emphasis on urban air quality.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CEE 569 or CHE 469 or CHE 569
CHE	573	Fuel Cells and Biofuel Cells	Provides a comprehensive analysis of fuel cell technologies. Begins by discussing the different types of fuel cells and the thermodynamic and kinetic fundamentals that control their performance. Discusses the materials and techniques used to characterize fuel cells. Finishes with a specific analysis of biofuel cells and their applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 473 or CHE 494 (Fuel Cells & Biofuel Cells) or CHE 573 or CHE 598 (Fuel Cells & Biofuel Cells)
CHE	577	Inorganic Membrane and Film	Synthesis and properties of various types of inorganic membranes and thin films, with focus on the sol-gel process and its use for synthesis of porous materials and thin films. Inorganic membranes and thin films represent a new research area of great importance for chemical engineers, materials scientists and chemists. They are finding increasing applications in separation processes, chemical reactor systems, fuel cells and batteries of impact on energy and environment. Requires prior knowledge of inorganic chemistry, physical chemistry, calculus, thermodynamics, mass transport, basic materials science, and separation processes to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHE 477 or CHE 577 or CHE 494 (Inorganic Membrane and Film) or CHE 598 (Inorganic Membrane and Film)
CHE	578	Biomass Energy Conversion Tech	Fundamentals and applications of biomass conversion process technologies. Gives a brief review on fundamentals of engineering thermodynamics, the chemistry of plant materials and reaction kinetics. Focuses on surveying the state-of-the-art technologies for cost-effective biomass conversion to biofuels including liquid fuels (bioethanol and biodiesel) and gaseous fuels (methane, hydrogen and synthesis gas). Considers both biological and thermochemical processes for the conversion of biomass to biofuels and chemicals. Also covers applications of biofuels in transportation, energy production in power plants and fuel cells, and economics, environmental impact, and policy issues relevant to biofuels. The course is of value to engineering students who are interested in the technologies of the developing field of biofuels, as well as engineers, managers and policymakers.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 478 or CHE 578 or CHE 494 (Biomass Energy Conversion Technology) or CHE 598 (Biomass Energy Conversion Technology)

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CHE	579	Microbial Bioprocess Eng	Investigates the application of basic chemical engineering principles to the design and understanding of biochemical and biological processes. Discusses enzyme kinetics and enzymatic processes; specifically emphasizes the development and application of whole cell bioprocesses for the production of chemicals, food, biofuels and pharmaceuticals, as well as applications in bioremediation. In addition to traditional topics such as the stoichiometry and kinetics of microbial growth, bioreactor design/operation, and downstream processing, also introduces contemporary topics of metabolic engineering and synthetic biology. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Introduces fundamental biochemical engineering concepts, primarily to chemical engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CHE 579 or CHE 598 (Microbial Bioprocess Engineering)
CHE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): graduate CHE major
CHE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
CHE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-4		Prerequisite(s): Ira A. Fulton Engineering graduate student
CHE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-12		Pre-requisites: Chemical Engineering Master's degree student
CHE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
CHE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Chemical Engineering Program	1-15		Pre-requisites: Chemical Engineering Doctoral student
CHI	101	First-Year Chinese I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student
CHI	102	First-Year Chinese II	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 101; Credit is allowed for only CHI 102 or MND 102 OR Visiting University Student

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CHI	110	Intensive Chinese I	Adopts different pedagogical approaches to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, appropriate cultural information related to language use is also an important component of instruction. Trains students to be able to function successfully in Chinese culture. Students don't simply learn to "speak Chinese" or read and write characters as some form of party trick. Teaches a practical skill set that allows students to communicate and behave appropriately in Chinese culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only CHI 101 or CHI 102 or CHI 110
CHI	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
CHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	201	Second-Year Chinese I	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 102 or 110 with C or better; Credit is allowed for only CHI 201 or CHI 210 or MND 201 OR Visiting University Student
CHI	202	Second-Year Chinese II	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 201; Credit is allowed for only CHI 202 or MND 202 OR Visiting University Student
CHI	205	Chinese Calligraphy	Introduces styles and techniques of Chinese writing. Requires no knowledge of Chinese or Japanese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
CHI	210	Intensive Chinese II	Intensive 2nd-year college-level Modern Standard Chinese designed for students who are highly motivated and have successfully completed at least 1st-year college-level Modern Standard Chinese language course or equivalent. Reviews and reinforces 1st-year Chinese grammatical patterns and introduces new ones in order to further develop students' communicative competence in listening, speaking, reading and writing in modern Chinese. Introduces over 500 new characters and presents and expands an equal number of spoken vocabulary items. Students increase their vocabulary, consolidate their grammar, describe objects and express ideas more accurately and fluently.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): CHI 102 with B or better or CHI 110 with C or better; Students who have credit for CHI 201 or CHI 202 may not enroll in CHI 210
CHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	301	Third-Year Chinese I	Expansion of proficiency in listening comprehension, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student
CHI	302	Third-Year Chinese II	Continuation of CHI 301.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): CHI 301 with C or better OR Visiting University Student
CHI	307	Intro to Literary Chinese I	Reading in various genres of pre-20th century literature (wen-yen), with analysis of the structure of the classical writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 202, CHI 210, JPN 202, or KOR 202 with C or better OR Visiting University Student
CHI	308	Intro to Literary Chinese II	Continuation of CHI 307.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): CHI 307 with C or better
CHI	321	Chinese Literature	Masterworks of the tradition from the 7th century BCE through the 13th century. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
CHI	322	Chinese Literature	Masterpieces from the later tradition and its transition to modern times. Readings, lectures, and examinations are in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
CHI	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
CHI	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336

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CHI	338	Daode Jing: Way to the West	At 5,000 words, the Daode Jing [Tao-te ching, "the Scripture of the Way and its Powers," attributed to the Sage Laozi] is perhaps the shortest religious book in the world. It is also the most widely misinterpreted. In China, Daoists, Buddhists and Confucians have each taken its short, pithy statements as warrant for their very different belief systems. In the West, missionaries, new-age pundits, hippies, rock-stars, mystics and LSD advocates each claim to understand the "true meaning" of Laozi's mystical words. But "the farther one travels, the less one knows..." Students read representative samples of these explanations to understand why this brief book of wisdom has endured for over 2000 years. Requires no knowledge of Chinese. Presents all Chinese texts in the translations of the instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338 or REL 338 OR Visiting University Student
CHI	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
CHI	345	Chinese Film and Civilization	Screening and discussion of recent films from China, Taiwan, and Hong Kong in the context of modern Chinese civilization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346
CHI	348	Pathways into Chinese Culture	Introduces some important aspects of China's cultural history and traditions. Provides an overview of Chinese history and culture and reviews major developments in science and technology. Incorporates current social and cultural topics and reviews through the lens of historical context. Classroom activities enable students to gain a better understanding of traditional Chinese culture with respect to both elite and popular culture. Conducted in Mandarin and is designed for the students who are currently enrolled in CHI 301 and CHI 401 or whose Chinese proficiency level in all four skills (speaking, listening, reading and writing) are at the intermediate mid to intermediate high level according to ACTFL guidelines.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 202 or 210 with C or better OR Visiting University Student
CHI	380	The Chinese Language	Introduces the Chinese languages from linguistic perspectives. Topics include the linguistic structure and characteristics (phonetics, phonology, morphology and syntax) of the Chinese language; linguistic history and dialects of Chinese; and its relationship with culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
CHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	401	Fourth-Year Chinese I	Focuses on solidifying and improving students' knowledge of modern Mandarin. Emphasizes learning strategies to increase reading and listening comprehension, as well as further strengthening oral fluency and written skills. Surveys a wide variety of original text and media materials, in both full-form and simplified characters. Conducted in Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 302 with C or better OR Visiting University Student
CHI	402	Fourth-Year Chinese II	Continuation of CHI 401.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 401 with C or better OR Visiting University Student
CHI	407	Chinese Acad & Prof Prps I	Part of the Chinese Flagship program; course has a three-fold objective: (1) to improve language proficiency in all four language skills; (2) to support other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; and (3) to develop the use of explicit language learning strategies that support professional-level literacy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 402 with C or better OR Visiting University Student
CHI	408	Chinese Acad & Prof Prps II	Part of the Chinese Flagship Program. Improves language proficiency in all four language skills; supports other Flagship courses by introducing specific vocabulary, literary genres, key reference materials; develops the use of explicit language learning strategies that supports professional level literacy. All course work in Mandarin Chinese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): CHI 407 with C or better
CHI	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451

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CHI	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
CHI	470	Modern Chinese Lit & Culture	Readings in modern Chinese literary texts, including prose, fiction, and poetry. Course content changes with instructor.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302 with C or better
CHI	482	History of Chinese Language	Introduces the history of the Chinese language. Graduate/advanced undergraduate-level introductory course on the historical changes of the sounds, writing system, grammar, and other aspects of the Chinese language. Topics include the historical phonology of Chinese, development of graphs (Hanzi), some topics of syntactic changes in texts, morphology, lexicography, cultural implication of language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): CHI 302; CHI 308 OR Visiting University Student
CHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
CHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
CHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
CHI	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501
CHI	502	Academic Writing	Trains graduate students in research methodology and conventions in academic writing. Centers on fine tuning students' command of the various components in English expository essays within the academic field of East Asian studies. Also addresses various contexts in academic writing, such conferences and proposals targeting audiences beyond the disciplinary boundaries of East Asian studies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 502 or JPN 502
CHI	514	Advanced Classical Chinese	Close readings in selected premodern texts, with focus on special grammatical features, and increased vocabulary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	561	Readings Traditional Xiaoshuo	Introduces major issues, texts, and resource materials for the study of narrative forms, including short stories and longer works of fiction. Focuses on the period from 1400 to 1900. One year of university-level classical Chinese or equivalent proficiency; three years of university-level modern Chinese recommended.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
CHI	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		

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CHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	101	Introductory Chemistry	Elements of general chemistry. Adapted to the needs of students in nursing and kinesiology and those preparing for general chemistry. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	
CHM	107	Chemistry and Society	General chemical principles and concepts presented in context of social and technological issues, e.g., energy, pollution, global warming, and others. This lecture course may be combined with the laboratory CHM 108 for those interested in lab course credit. Cannot be used for major credit in chemical or biochemical sciences. Both CHM 107 and CHM 108 must be taken to secure SQ credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	
CHM	108	Chemistry and Society Lab	Experiments in chemical principles presented in chemistry and society lectures (CHM 107). Students must complete both CHM 107 and CHM 108 to receive an SQ (General Studies).	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or Corequisite(s): CHM 107 OR Visiting University Student
CHM	111	Gen Chem Lab for Majors I	Laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 117 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Suitable for students who have completed introductory chemistry at the high school level. Both CHM 117 and CHM 111 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 117 with C or better OR Visiting University Student
CHM	112	Gen Chem Lab for Majors II	Continuation of CHM 111 laboratory course in general chemistry for chemistry and biochemistry majors intended to complement CHM 118 lecture course. Covers a diverse range of laboratory experiments appropriate to chemistry and biochemistry majors designed to reinforce chemical principles and to develop a broad range of chemical synthesis skills. Uses modern analytic and characterization techniques to study the physical and chemical properties of substances. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Prerequisite(s): Biochemistry, Biophysics or Chemistry major; CHM 111 with C or better; Pre- or corequisite(s): CHM 118 with C or better
CHM	113	General Chemistry I	Principles of chemistry. Adapted to the needs of students in the physical, biological, and earth sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better or ALEKS score of 61 or higher OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265 or 270 with C or better if completed OR Visiting University Student
CHM	114	General Chemistry for Engrs	Chemical principles with emphasis toward engineering. Students without high school chemistry or are chemical engineering majors must enroll in the CHM 113, 116 sequence instead of CHM 114.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 101 with C or better or ALEKS score of 61 or higher OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
CHM	116	General Chemistry II	Continuation of CHM 113. Equilibrium theory, thermodynamics, kinetics, electrochemistry, nuclear chemistry, descriptive chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4	SQ	Prerequisite(s): CHM 113, 114, or 117 with C or better OR Visiting University Student
CHM	117	General Chemistry for Majors I	Lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the CHM 111 laboratory course. Covers electronic structure of atoms and molecules, intermolecular forces, bonding models, molecular geometry, physical states of matter, gas laws, and chemistry of condensed matter and modern materials. Highlights chemical reactivity, periodic trends and descriptive chemistry. Both CHM 111 and CHM 117 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prereq(s): Biochemistry, Biophysics or Chemistry major; CHM 101 w/ C or better or ALEKS score of >=61 or Pre- or coreq(s): MAT 170, 171, 210, 251, 265, or 270 w/ C or better if completed OR Visiting University Student

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CHM	118	Gen Chemistry for Majors II	Continuation of CHM 117 lecture course in general chemistry for chemistry and biochemistry majors and is complemented by the major's CHM 112 laboratory course. Topics include thermodynamics, properties of solutions, chemical equilibrium, aqueous chemistry, acids and bases, electrochemistry, chemical kinetics, nuclear chemistry, coordination chemistry. Both CHM 118 and CHM 112 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): Biochemistry, Biophysics, or Chemistry major; CHM 117 with C or better
CHM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		Pre-requisites: Biochemistry or Chemistry major; Maximum 45 hours
CHM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	231	Elementary Organic Chemistry	Surveys organic chemistry, with emphasis on the reactivity of basic functional groups. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	SQ	Prerequisite(s): CHM 101, 114, 116, or 118 with C or better OR Visiting University Student
CHM	233	General Organic Chemistry I	Chemistry of organic compounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	234	General Organic Chemistry II	Continuation of CHM 233.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 233 or 333 with a C or better; Credit is allowed for only CHM 234 or CHM 334 OR Visiting University Student
CHM	235	Elementary Organic Chem Lab	Organic chemistry experiments in synthesis, purification, analysis, and identification. Both CHM 231 and 235 must be taken to secure SQ General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	SQ	Pre- or corequisite(s): CHM 231 with C or better if completed OR Visiting University Student
CHM	237	Gen Organic Chemistry Lab I	Microscale organic chemical experiments in separation techniques, synthesis, analysis and identification, and relative reactivity.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 233 with C or better if completed; Credit is allowed for only CHM 237 or CHM 337 OR Visiting University Student
CHM	238	Gen Organic Chemistry Lab II	Continuation of CHM 237.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 237 or 337 with C or better; Pre- or corequisite(s): CHM 234 with C or better if completed; Credit is allowed for only CHM 238 or 338 OR Visiting University Student
CHM	240	Math Methods in Chemistry	Introduces mathematical/computational methods in chemical kinetics, thermodynamics, quantum chemistry. Mathematical-based computer lab.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	CS	Prerequisite(s): CHM 116 or 118 with C or better; Pre- or corequisite(s): MAT 272 or 267 with C or better if completed
CHM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	302	Environmental Chemistry	Explores major environmental issues, problems, and solutions from analytical and chemistry perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better OR Visiting University Student
CHM	303	Environmental Chemistry Lab	Lab in environmental chemistry to complement CHM 302. First-hand experience with sampling methods, analytical techniques, and environmental lab methods. Both CHM 303 and CHM 348 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 302 with C or better if completed OR Visiting University Student
CHM	325	Analytical Chemistry	Advanced principles and theory of quantitative analysis, including stoichiometry, equilibria, photometric methods, electrochemistry, separation processes, statistical data analysis, and applications to advanced topics in analytical chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better OR Visiting University Student
CHM	326	Advanced Analytical Chem Lab	Practical methods of quantitative analysis for chemistry majors, including titrimetric, gravimetric, and photometric analysis, and analytical separation processes, statistical data analysis, and applications to advanced topics in chemical analysis.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): CHM 325 with C or better if completed OR Visiting University Student
CHM	327	Instrumental Analysis	Principles of instrumental methods in chemical analysis. Electroanalytical and optical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 325 with C or better; CHM 326 with C or better; Pre- or corequisite(s): CHM 346 with C or better if completed OR Visiting University Student
CHM	328	Instrumental Analysis Lab	Experiments in chemical analysis by electroanalytical and optical techniques.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	2		Pre- or corequisite(s): CHM 327 with C or better if completed

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CHM	341	Elementary Physical Chemistry	Thermodynamics, equilibrium, states of matter, solutions, and chemical kinetics. For students in premedical, biological, and educational curricula.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 114, 116, or 118 with C or better; CHM 231, 233, or 333 with C or better; MAT 251, 265, or 270 with C or better; PHY 101, 112, or 131 with C or better; Credit is allowed for only BCH 341 or CHM 341 OR Visiting University Student
CHM	343	Elementary Physical Chem Lab	Physical chemistry experiments.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Pre- or corequisite(s): BCH 341 or CHM 341 with C or better if completed; Credit is allowed for only CHM 343 or CHM 348 and CHM 349 OR Visiting University Student
CHM	345	Physical Chemistry I	Introduces quantum chemistry with application to electronic structure and dynamics of atoms and molecules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 116 or 118 with C or better; CHM 240 OR PHY 201 OR both MAT 274 or 275; MAT 242, 342 or 343 with C or better; MAT 267 or 272 with C or better; PHY 131 or 151 with C or better OR Visiting University Student
CHM	346	Physical Chemistry II	Introduces equilibrium and statistical thermodynamics. Laws of thermodynamics, equations of state, multicomponent chemical and phase equilibria, and electrochemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 345 with C or better
CHM	348	Physical Chemistry Lab I	Lab experiments in spectroscopy and computational chemistry. To secure L General Studies credit the following must be taken: CHM 303 & CHM 348 or CHM 348 & CHM 349 & CHM 452.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 345 with a C or better if completed OR Visiting University Student
CHM	349	Physical Chemistry Lab II	Lab experiments in thermodynamics, electrochemistry, and computational chemistry. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 346 with C or better if completed OR Visiting University Student
CHM	385	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
CHM	392	Intro to Research Techniques	Instrumental methods and philosophy of research by actual participation in chemical research projects.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	433	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, and Woodward-Hoffmann rules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better; CHM 234 or 334 with C or better; Credit is allowed for only CHM 433 or CHM 531 OR Visiting University Student
CHM	435	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 361 or BCH 461 or CHM 460; CHM 234 or CHM 334; Credit is allowed for only CHM 435 or CHM 535 OR Visiting University Student
CHM	442	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): CHM 101, 114, 116, or 118 with C or better; Credit is allowed for only CHM 442 or CHM 494 (Practical Nuclear Magnetic Resonance Spectroscopy) or CHM 542
CHM	452	Inorganic Chemistry Laboratory	Preparation and characterization of typical inorganic substances, emphasizing methods and techniques. CHM 348, CHM 349 and CHM 452 must be taken to secure L General Studies credit.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): CHM 453 with C or better if completed OR Visiting University Student
CHM	453	Inorganic Chemistry	Principles and applications of inorganic chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341 or 346 with C or better OR Visiting University Student
CHM	460	Biological Chemistry	Structure and function of macromolecules and their involvement in the processing of energy and information by living cells.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): CHM 234 or 334 with C or better; CHM 346 with C or better

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CHM	471	Solid-State Chemistry	Crystal chemistry, thermodynamics and electrochemistry of solids, nonstoichiometric compounds, diffusion and solid-state reactions, crystal growth, and selected topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre- or corequisite(s): CHM 346 with C or better if completed; Credit is allowed for only CHM 471 or CHM 571
CHM	480	Methods of Teaching Chemistry	Organization and presentation of appropriate content of chemistry; preparation of reagents, experiments, and demonstrations; organization of stock rooms and laboratories; experience in problem solving.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		
CHM	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
CHM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		
CHM	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Molecular Sciences	3	L	Prerequisite(s): CHM 302, GLG 321, or GLG 481 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CHM 489 or GLG 489 OR Visiting University Student
CHM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6		Prerequisite(s): Barrett Honors student
CHM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CHM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		
CHM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-3		
CHM	501	Current Topics in Chemistry	Varies by topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	520	Chemical Biology	Chemical biology, broadly defined, is the application of chemical tools toward the study biological problems. The purpose of this class is to provide the foundation for translational research involving cross-disciplinary approaches to tackling significant problems in the biosciences. This one-semester class will cover topics ranging from traditional molecular biology and biochemistry to state-of-the-art techniques in genomics and proteomics. Particular emphasis will be placed on modern concepts in enzymology. The class will be taught using a combination of current literature and text-based materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate students (degree and non-degree); Credit is allowed for only BCH 520 or CHM 520
CHM	524	Separation Science	Addresses principles and applications for all areas of chemical separations. Emphasizes separations principles in microfluidics and its interface with nanotechnology and traditional electronic materials.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	531	Advanced Organic Chemistry I	Reaction mechanisms, reaction kinetics, linear free energy relationships, transition state theory, molecular orbital theory, and Woodward-Hoffmann rules.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisite: degree- or nondegree-seeking graduate. Credit is allowed for only CHM 433 or CHM 531
CHM	535	Medicinal Chemistry	Principles of medicinal and pharmaceutical chemistry. Drug design, synthesis, and mechanism of action.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate degree or non-degree seeking students; Credit is allowed for only CHM 435 or 535
CHM	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
CHM	541	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 541 or MSE 524

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CHM	542	Practical NMR Spectroscopy	Covers the practical operation of NMR spectrometers, common ¹ H/ ¹³ C/X nuclei NMR spectroscopy, safety around NMR spectrometers and basic NMR data processing, handling and analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 442 or CHM 542 or CHM 598 (Practical Nuclear Magnetic Resonance Spectroscopy)
CHM	543	Computational Chemistry	Provides basic concepts and practical experience in computational chemistry as applied to molecules and solids. Systematically covers theoretical background and applied aspects of electronic structure methods/simulation, and related visualization techniques. Provides weekly laboratory session will provide hands-on experience with state-of-the-art molecular and solid-state simulation/visualization packages, with an emphasis on their reliability, predictive capability and practical limitations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	546	Molecr Spectroscopy/Group Thry	Applies quantum mechanics to the general problem of the interaction of light with molecular systems. Angular momentum and group theory. Symmetry classifications. Overview of the formalism and experimental techniques in different resonant-based spectroscopies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	553	Advanced Inorganic Chemistry	Principles of modern inorganic chemistry applied over the entire periodic system. Bonding theory, chemical reactivity, spectroscopic and magnetic properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560
CHM	571	Struct, Bond, Symmetry in Mtls	Principles of structural and materials chemistry, emphasizing crystal chemistry. Symmetry of periodic structures (space groups), factors determining bond lengths and coordination geometries, and the role of structure in determining physical properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 471 or 571
CHM	581	Structure of Matter/Properties	Models of matter and its properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581
CHM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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CHM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Molecular Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CHM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Molecular Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	100	Optimizing Health&Performance	Explores concepts, attitudes, research and practices associated with the optimization of health and performance. Students gain practical and foundational knowledge regarding evidence-based practice, nutrition, physical activity, executive function, strategies and cognition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): College of Health Solutions undergraduate student OR Visiting University Student
CHS	101	The ASU Experience	Required, one-hour course designed to introduce all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university. Covers several core topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions student
CHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	201	Intl Indigenous Health	This course aims to develop student's understanding of core concepts in the health and well-being of Indigenous peoples worldwide, with particular focus on the Aboriginal and Torres Strait Islander peoples in Australia and Indigenous peoples in United States (or the Americas more broadly). The course highlights the differences in distribution of disease and health disparities between Indigenous and non-Indigenous peoples and develops an understanding of underlying interrelated physical, psycho-social, cultural and other determinants of Indigenous peoples' health. Students will be provided with examples of evidence-based research and health practice to learn about the ways in which Indigenous health and well-being can be supported.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	260	Health Professions Terminology	Prepares students for a field in the health care field and covers medical terms related to all the major body systems including: muscular system, skeletal system, respiratory system, circulatory system, digestive system, reproductive system and urinary system.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only CHS 260 or KIN 294 (Health Professions Terminology)
CHS	280	Exptl Comm Hlth & Research	Provides experiential learning in community health and/or research. Gives students the opportunity to develop professionally; enhance their health education; take ideas and concepts beyond the classroom; and gain experiences and real-world perspectives in research, clinical or community-based settings. Students interact with faculty, researchers and/or professionals in the field across a range of observations and activities.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): College of Health Solutions student or Edson College of Nursing and Health Innovation student OR Visiting University Student
CHS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	300	An Exploration of Well-Being	An engaging, multidisciplinary, scientific and practical exploration into factors influencing the well-being of individuals and society. Students experiment with mindsets, habits, strategies and skills to develop greater awareness and curiosity about lifelong well-being and success.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student

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CHS	301	Epidemiology Intl Pub Health	Epidemiology and its use in public health research and practice. This course introduces students to epidemiological principles and methods. It aims to enable students to apply an epidemiological approach to the study of disease and illness, to interpret and assess the quality of evidence of a range of study designs and report on epidemiological research.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	303	Health Promotion	Health Promotion is a fundamental component of any approach to public health and population health, whether it be research, policy or practice. The World Health Organization defines health promotion as the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions. (http://www.who.int/topics/health_promotion/en/). This course provides an overview of health promotion including examination of the social determinants of health, health literacy and foundations in health promotion. During the course students will explore the role of health promotion in addressing a range of current global health issues and their relevance to the field of public health. Students will examine contemporary perspectives on health and health promotion contributions to public health and population health responses. The course enables students to gain an understanding of how health can be defined from different perspectives, and develop core knowledge of health promotion including its foundation theories, principles and concepts. The course will equip students with the capacity to engage in public health and population health through the essential health promotion skills and understandings.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	304	Communicable Disease	This course will introduce students to the burden of infectious or communicable disease worldwide. Students will learn about the theory of transmission modes, surveillance, outbreak investigation, current disease prevention, control and management strategies, and emerging and re-emerging infections. Key case studies covering different types of communicable diseases will be used to illustrate these important concepts. Current and future challenges in communicable disease control will be highlighted.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	305	Princ Prvent & Pub Hlth Surv	Disease surveillance and population health monitoring represents one of the most important tools for public health, for early disease detection and prevention, and the monitoring and evaluation. Early detection of and rapid response to a public health threat has huge potential to save lives and costs from preventing hospitalizations and deaths. This course provides an overview of different types of surveillance systems and the sources of data that are used in such systems. Students learn to assess challenges and limitations associated with different types of public health surveillance systems and develop the skills to examine the tools and approaches that can be used to improve the effectiveness of public health surveillance systems. The course looks at principles of disease prevention more broadly. Public health prevention measures are discussed including immunization and screening, using case studies for both communicable and non-communicable diseases. The role of epidemiological and social factors is also considered.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major; Pre- or corequisite(s): CHS 301; CHS 304; HCD 300
CHS	306	Public Hlth Policy & Programs	The overall aim of this course is to enable students to develop their understanding of both public health policy and programs as a part of public health practice. Students will learn about the concept and role of policy and the key concepts, models and approaches to designing and evaluating public health programs. Case studies from multiple countries and contexts will be used as teaching material.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major

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CHS	307	Health Leadership	The course aims to develop students understanding of different approaches to leading and managing at different levels in health services in local and international contexts to improve individual, community and population level outcomes. Students will be introduced to the common and overlapping skills and features of effective health leadership within public health agency settings requiring coordinated system-wide action through to health care management in more clinically focused patient delivery settings. Topics include management and leadership theories and models; systems perspectives and strategic thinking; influence, power and leading change; managing interprofessional teams and motivating staff; conflict management and improving health worker performance.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	308	Comparative Health Systems	Principles and practice of health system analysis, the sources and utilization of information relating to health services, and frameworks for assessing health systems performance. Examines the constitutional, legal, economic, social and political environments within which health care systems operate. Compares different models of health system funding and operation. Reviews different health services organization and management, health service financing arrangements and the health workforce.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
CHS	309	Globl Chron Disease Prvnt&Ctrl	This course aims to enhance students' understanding of the major non-communicable diseases-specifically so-called "lifestyle diseases" including cardiovascular disease, cancer, type II diabetes, chronic lung disease- and the interaction between their associated lifestyle behaviors such as unhealthy diet, physical inactivity, tobacco use and alcohol use. Students will examine the concept of the epidemiological transition to provide insights into trends in the burden of lifestyle diseases and injuries globally and in developing countries. This course will help students to evaluate prevention and control approaches to lifestyle diseases, and to critique the modern social environment and lifestyle behaviors with respect to global health. Topics include: the global burden of disease, the epidemiological transition, injury prevention, health systems, global tobacco control, obesity, and global action plan on non-communicable diseases.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	340	Health Theory	Health theories help to frame health and health outcomes in our society. Applies health theories to medical problems in order to explore the different levels of influence on behavior: individual, social network, community, health system and policies. Helps students take a deeper look at the intersections between people and their environment as well as understand how influence on our health is constructed all around us.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 OR Visiting University Student
CHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	1-4		
CHS	401	Ethics in Public Health	This course provides an overview of ethical considerations and issues pertinent to public health and health care. Students will examine ethical theories and principles, and key legal concepts, and their application to health care and public health contexts. The course enables students to identify and analyse the ethical challenges of balancing the interests of individuals and communities within a health care context which is costly, complex and increasingly globalized. While the focus is on public health ethics which includes health policy and promotion, clinical and research ethics will also be examined as integral components of contemporary, cutting-edge health care service and delivery.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): Bachelor of International Public Health major
CHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 45 hours; minimum 2.00 GPA
CHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
CHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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CHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
CHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		Prerequisite(s): minimum 45 hours
CHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): minimum 45 hours
CHS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CHS	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	105	Computer Apps&Info Technology	Introduces business information systems from a business intelligence perspective and the uses of application software with emphasis on database and spreadsheet packages for efficient and effective problem solving.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	
CIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		
CIS	235	Intro to Information Systems	Survey course introducing the competitive and strategic uses of information systems, how information systems are transforming organizations and their management, and the issues, difficulties, and opportunities facing the technology professional and business manager today.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105, 200 or 220 with C or better; MAT 210, 270, 211 or 271 with C or better; Credit allowed for only CIS 235 or CIS 236 OR Visiting University Student
CIS	236	Honors Information Systems	Introduces strategic leveraging of IS solutions and surveys different facets of IS in order to gain an understanding of how business problems are addressed and opportunities realized.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3	CS	Prerequisite(s): Barrett Honors student
CIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	300	Web Design and Development	Focuses on Web site development, including target audience, image presentation, page/content topic organization, site navigational functionality, implementation needs, and future needs. Web site design and development practice using business software products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR post-baccalaureate undergraduate student, OR non-degree student; minimum 2.00 GPA, OR graduate student OR Visiting University Student
CIS	308	Advanced Excel in Business	Covers advanced Excel skills using an applied focus on different types of decisions one may analyze using spreadsheet capabilities; graphs and charts to communicate complex analytics; pivot tables to slice and dice data for reporting.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	309	Business Process Management	Flow charting, swimlane diagramming, process simulation using modern tool suites. Teaches the types of process evaluation decision analytics most commonly used and covers applied process analysis in a variety of contexts.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	310	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of temporal, geospatial, topical and network business data while also making it easier to digest and utilize for business users.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	311	Business Agile Project Mgmt	Overview of project management emphasizing the fundamentals, analytics and value that support project decision making. Covers how and why projects are selected within organizations, the purpose of projects, and the way that they should be properly managed using industry best practices and frameworks. Includes classical (Waterfall), modern (Agile), and hybrid project management techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better OR Visiting University Student
CIS	312	Bus Mobile Commerce & Monetize	Teaches students the entire mobile commerce process starting with recognizing what it is, what it does, how to build it and the business value of it. Familiarizes students with software development platforms and ecosystems, strategies for development and deployment, and monetization strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): CIS 105 or 236 with C or better; Credit is allowed for only CIS 312 or CIS 294 (Business Mobile App Development and Monetization) OR Visiting University Student

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CIS	315	Intro Business Data Analytics	Overview of analytics in the business context; concepts of strategic and operational analytics; overview of concepts like dimensional modeling, the Model Lifecycle, data mining, big data, KPIs and metrics, ERP and analytics, in-database/memory analytics; real-time analytics and data stream analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	325	Programming for Bus Analytics	Manipulating, processing, cleaning and crunching data with a focus on utilizing scripting and programming tools toward business applications. Also a practical, modern introduction to extraction, transformation and loading of enterprise data for business applications.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major or Comp Info Systems BS major or Business (Info Security) major; CIS 235 or 236 with C or better; ECN 221 or 231 with C or better; MAT 211, 266, or 271 with C or better OR Visiting University Student
CIS	340	Bus Info Systems Development I	Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to plan and analyze the needs of modern business information system development.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Computer Information Systems BS major; ACC 241, 242 or 271 with C or better; CIS 235 or 236 with C or better; ECN 221 with C or better; MAT 211, 266 or 271 with C or better OR Visiting University Student
CIS	345	Bus Info Systems Development II	Provides a clear understanding of the Systems Development Life Cycle (SDLC) tools, techniques, and methodologies used to design, implement, and support modern business information systems development.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Computer Information Systems BS major; CIS 340 with C or better OR Visiting University Student
CIS	355	Bus DataWarehouse Data Modelin	SQL, stored procedures and data warehouse architectures; data warehouse requirements definition, design and analysis; overview of the steps in building information-enabled business models; role of data warehousing in data mining and analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS or Data Science BS major; CIS 365 with C or better OR Visiting University Student
CIS	360	Business Database Concepts	Database theory, design, and application, including the entity-relationship model; the relational, hierarchical, and network database models; and query languages.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W. P. Carey Accountancy BS or Business (Information Security) BA major; ACC 231, 232 or 261 with C or better; ACC 241, 242 or 271 with C or better; CIS 105 or 236 with C or better OR Visiting University Student
CIS	365	Business Database Systems	Focuses on business database and data warehousing systems, development and management. Topics include capturing business requirements using data modeling, SQL, data security, operational and analytical data stores and data integrity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS, Computer Information Systems BS, or Data Science BS major; CIS 235 or 236 with C or better OR Visiting University Student
CIS	375	Business Data Mining	Building predictive analytics (e.g., SEMMA, KDD); exposure to logistic regression, machine learning and decision tree methods; Understanding lift factors, ROC curves; hands-on use of mining software; business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; WPC 300 with C or better OR Data Science BS major; CIS 235 with C or better; DAT 300 with C or better OR Visiting University Student
CIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
CIS	401	Cyber Risk Management	Covers the activities, decisions, risks and controls associated with enterprise business processes. Specific focus on the activities in the sales-to-cash (revenue cycle) and purchase-to-pay (expenditure cycle) processes. Students understand how IT enables performing those processes more efficiently and effectively. In addition to identifying internal controls necessary for accurate, complete performance of processes, also covers the fundamentals of cybersecurity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 320 or CIS 235 or CIS 236 or CSE 310 or IEE 305 with C or better; Credit is allowed for only ACO 401 or CIS 401 OR Visiting University Student
CIS	402	Privacy, Ethics and Compliance	Covers the activities, mechanisms and challenges associated with implementing the principles of privacy into corporate structures. Also provides an overview of the privacy regulatory landscapes as well as emerging challenges with privacy. Specific focus areas include the Generally Accepted Privacy Principles framework and the implementation of privacy controls via the use of process and technology.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): ACO 401, CIS 401, or CSE 465 with C or better; Credit is allowed for only ACO 402 or CIS 402 OR Visiting University Student

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CIS	405	Business Intelligence	Business intelligence (BI) is a term describing a broad category of applications, technologies, architectures and processes for gathering, storing, accessing and analyzing data to provide business users with timely information to enable better insights into project and process management and evidence-based decision making. BI is based on techniques for data decision capture, cleansing, validation, warehousing and analytics to help decision makers improve decision outcomes. Provides a capstone understanding of the concepts of managing data resources and the development of business intelligence capabilities using data visualization, data warehousing, data mining, online analytical processing decision support systems and other advanced BI topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s) CIS 105 or 236 with C or better OR Visiting University Student
CIS	415	Big Data Analytics in Business	Applications of machine learning, data and text mining for big data, Hadoop, cloud-based solutions, fundamentals of big data programming, social media and big data, NoSQL, GIS, business case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 315 with C or better; CIS 325 with C or better OR Data Science BS major; CIS 235 with C or better; DAT 301 with C or better OR Visiting University Student
CIS	425	Enterprise Web Technologies	Modern Web application technologies for the enterprise. Covers development of Web applications for handling business transactions and strategies including the use of cloud-based applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 340 with C or better; CIS 360 or 365 with C or better OR Visiting University Student
CIS	430	Mobile Platforms for Business	Mobile application development for the enterprise to address mobile transactions and consumer engagement. Covers business frameworks, app development; and management of devices, applications and services in today's multi-platform environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 345 with C or better; CIS 425 with C or better OR Visiting University Student
CIS	440	Capstone in Information System	Offers a capstone experience integrating concepts from the business as well as the technology curricula. Students analyze, propose and develop a full technology solution for a business enterprise.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3	L	Prerequisite(s): W.P. Carey Computer Information Systems BS major; CIS 401 with C or better; CIS 425 with C or better; ENG 101, 105, or 107 with C or better
CIS	450	Enterprise Analytics	Model lifecycle analysis, analytics governance, aligning governance, aligning firm and analytics strategy, big data security issues, enterprise search, applied projects.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): Business Data Analytics BS major; CIS 355 with C or better, CIS 375 with C or better, CIS 415 with C or better OR Visiting University Student
CIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey CIS BS student
CIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-6		Prerequisite(s): Barrett Honors student
CIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Information Systems	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-3		Prerequisite(s): Business Data Analytics BS or Computer Information Systems BS major
CIS	502	Info Systems & Innovations	Organizational, strategic, and technical issues of the management of information. Evaluation, design, and use information systems as competitive advantage.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey MBA degree program student

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CIS	503	DecisionMaking w/DataAnalytics	Presents frameworks and approaches to equip students to recognize patterns in data and models, recommend actions and implement organizational changes. Students learn multiple concepts to improve decision making in organizations including the curation of data repositories for cross-functional analytics, recognition of decision biases, recommendation and communication of business process changes, and the establishment of iterative processes for decision analytics. Readings address decision-making dilemmas and challenges facing managers in analytics-rich business environments. Students get an immersive experience in analyzing the individual biases inherent in decision making, the informational requirements and the data analytics governance requirements to ensure effective deployment and continuous renewal of analytics culture at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	2.5-3		Prerequisite(s): W. P. Carey MBA student; WPC 501 with C or better
CIS	505	Intro to Enterprise Analytics	Ensuring the foundational understanding of contextualized analytics within the business enterprise continuum by covering how data flows and is managed across the landscape of enterprise business processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	506	Information Management	Addresses central issues in managing information to achieve competitive advantage and support innovation. Specific topics covered include data quality, data modeling using both entity relationship models and star schemas, data governance, document management, document search, enterprise performance management and visualization techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): graduate W. P. Carey major
CIS	508	Data Mining I	Charting a roadmap for data-driven decision making and getting a practical understanding of how IT tools and techniques can allow managers to extract predictive analytics and patterns from primarily numeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	509	Data Mining II	Uses tools and techniques to analyze unstructured data that are applied to business problems to support informed decision making and the extraction of predictive analytics and patterns from primarily nonnumeric data.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Pre-req for CIS 509
CIS	510	Bus Process & Workflow Analysis	Builds foundations for process analysis by focusing on information, documents, people, roles and business rules. Provides an introduction to various techniques and tools of process analysis, including an understanding of organizational issues in rolling out change initiatives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 510 or CIS 591 (Business Process Workflow Analysis)
CIS	512	Business Intelligence	Understanding how organizations make use of Business Intelligence (BI) to gain a sustainable competitive advantage. Builds the foundations for evidence-based managerial decision making. Covers technologies for data warehousing and data mining from a managerial perspective. Covers contemporary topics such as real-time BI, business analytics, and business performance management with the help of case studies, audio-video content, guest speakers, online forums to generate creative thinking and discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	1-4		Prerequisite(s): W.P. Carey graduate major
CIS	515	Deep Learning App in Business	Deep learning applications have become an integral part of our lives over the last decade. Alexa, Amazon Go, Waymo, Apple Face ID, and Facebook's face recognition applications are all powered by deep learning networks. Applications based on deep learning models cover a wide spectrum of industries including retail, automotive, manufacturing, health care, banking, insurance, agriculture, security and surveillance. Hands-on look at the latest models, trends and challenges of deep learning applications in business.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	525	Strategic Value of IT	Instills balanced and disciplined view of IT and business with their interplay. Assigns cases and assignments involving the symbiotic relationship of IT and business to provide real-world exposure for critical thinking and engaging discussion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 525 or CIS 591 (Strategic Value of Information Technology)
CIS	540	Information Security & Control	Provides a broad survey of information security and controls, utilizing the COBIT framework to illustrate how information security and controls contribute to effective IT governance. Develops an understanding of the issues associated with information security and effective IT governance, with particular emphasis on how management contributes to the effectiveness of an organization's information security program.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major. Credit is allowed for only CIS 540 or CIS 591 (Information Security & Controls)

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CIS	541	Business Data Visualization	The design of insightful business data visualizations and dashboards to improve business decision making. Applies advanced data visualization techniques to make sense of large data sets including temporal, geospatial, topical and business data while also making it easier to digest, present and utilize for business needs and users.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	545	Managing Enterprise Systems	Investigates major categories of enterprise systems, factors driving software adoption and keys for successful implementation. Pays special attention to evaluating the potential impact of emerging technologies on business environments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 545 or CIS 591 (Enterprise Systems)
CIS	560	IT Services & Project Mngmt	Provides an overview of the project management process groups and knowledge areas (defined by the PMBOK) and focuses on the application of key concepts, tools and techniques for delivering on-time, on-budget IT project and services that meet end-user needs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 560 or CIS 591 (IT Services and Project Management)
CIS	565	AI and Business	Explores modern artificial intelligence (AI) technology, applications, techniques and their implications for business. People, process and technology factors related to the innovation and adoption of AI in the commercial enterprise and how it shapes the competition and society in the future. Also covers implications for information systems professionals as it pertains to managing the AI infrastructure (robots, algorithms, platforms).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate student
CIS	575	Emerging Technologies	Explores decision models and frameworks applied to assess, evaluate and implement emerging technologies. Explains the principles of sustaining and disruptive technological innovation on the adoption and diffusion of emerging technologies. Discusses the technical, industrial and legal parameters that enable convergence and commoditization of technologies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Information Systems	3		Prerequisite(s): W.P. Carey graduate major; Credit is allowed for only CIS 575 or CIS 591 (Emerging Technologies in IT)
CIS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student
CIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: Specific W.P. Carey Graduate student
CIS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-4		Pre-requisite: Specific W.P. Carey Graduate student
CIS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Information Systems	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-12		Pre-requisite: W.P. Carey Info Systems PhD student
CIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Information Systems	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CIS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Information Systems	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	502	Theory/Pract/Commun/Persuasion	Theoretical exploration of communicative and persuasive practices as applied in various contexts. Surveys classical, modern, and contemporary theories of persuasion.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	505	Methods/Appl Commun Research	Examines the intellectual, practical, and ethical dimensions of engaging in applied research. Emphasizes empirical and quantitative methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	506	Humanistic Inq/Field Rsrch/Com	Examines interpretive, critical, and rhetorical approaches to communication and advocacy, including hermeneutics, ethnography, and cultural studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	515	Ethical Issues/Commun Advocacy	Examines the ethical issues or concerns related to communication advocacy. Variable topics; examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	516	Mediation and Dispute Resoluti	Examines advocacy's role in fair negotiation and effective and successful dispute resolution. Examines research, theory, and/or practice.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	520	Communication Campaigns	Explores public communication strategies aimed at advocating for general or specific audiences and/or for particular issues and causes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student; CMN 502 or 522 with C or better
CMN	522	Argumentation and Advocacy	Introduces various models of argumentation and their applications to various spheres of advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts students
CMN	531	Communication and Social Chang	Examines human communication and technologies of communication as agents of social change within groups, communities, organizations, and/or cultures.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	532	Advocacy/Interpersonal Setting	Examines particular relational contexts in which advocacy plays a pronounced role (e.g., personal, family, and service provider relationships).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	550	Advocacy in Orgtional Settings	Examines issues of upward influence, the expression of dissent, and grievance systems within organizational contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	551	Democracy & Power in Orgs	Examines structural, historical, relational, and symbolic dimensions of organizational communication and discourses that foster or impede communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): Communication Studies MA student
CMN	557	Communication and Technology	Assesses technology's role in the social dynamics of human interaction. Emphasizes the impact of technology with regard to communication advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	565	Globalization and Advocacy	Explores the forces leading to increased intergroup contact and their impact on social, economic, and political dynamics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	570	Comm/Advocacy Social Context	Variable topics course exploring the intersection of communication and advocacy in specific contexts not addressed in other elective courses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisite: Communication Studies Master of Arts student
CMN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student

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CMN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisite: Communication Studies Master of Arts student
CMN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CMN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Communication Studies MA student
CMN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CMN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Communication Studies MA student
CNE	210	Engr Mechanics I: Statics	Force systems, resultants, equilibrium, distributed forces, area moments, fluid statics, internal forces, friction, and stability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): FSE 100 with C or better; MAT 266 or 271 with C or better; PHY 121 with C or better; PHY 122 with C or better; Corequisite(s): MAT 242; Credit is allowed for only CEE 210 or CNE 210 OR Visiting University Student
CNE	212	Engr Mechanics II: Dynamics	Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210 or CNE 210 with C or better; MAT 242 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 212 or CNE 212 OR Visiting University Student
CNE	213	Intro to Deformable Solids	Strain-displacement and stress-strain-temperature relations. Stresses and deformations due to axial, shear, torsional and bending moments. Buckling, stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): CEE 210, CNE 210, or EVE 214 with C or better; MAT 274 or 275 with C or better; Credit is allowed for only CEE 213 or CNE 213 OR Visiting University Student
CNE	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CNE	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Credit is allowed for only CON 243 or CNE 243
CNE	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student
CNE	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296

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CNE	321	Structural Analysis and Design	Statically determinate and indeterminate structures (trusses, beams, and frames) by classical and matrix methods. Introduces structural design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering BSE or Construction Engineering BSE major; CEE 212 or CNE 212; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 321 or CNE 321 OR Visiting University Student
CNE	351	Geotechnical Engineering	Index properties and engineering characteristics of soils. Compaction, permeability and seepage, compressibility and settlement, and shear strength.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engr BSE, Construction Engr BSE, or Environmental Engr BSE major; CEE 212 or CNE 212 with C or better; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 351 or CNE 351 OR Visiting University Student
CNE	353	Civil Engineering Materials	Structure and behavior of civil engineering materials, including steel, aggregate, concrete, masonry, asphalt, wood, composites. Atomic structure and engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Civil Engineering or Construction Engineering or Environmental Engineering BSE major; CEE 213 or CNE 213 with C or better; Credit is allowed for only CEE 353 or CNE 353 OR Visiting University Student
CNE	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engrg BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CNE	400	Earth Systems Engr & Mgmt	Introduces earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	(L or HU) & H	Prerequisite(s): Civil Engr BSE major; CEE 300 with C or better; ENG 101, 105, or 107 with C or better OR non-CEE junior or senior; ENG 101, 105, or 107 with C or better; Credit is allowed for only CEE 400 or CNE 400 OR Visiting University Student
CNE	421	Concrete Structures	Behavior of concrete structures and the design of reinforced and prestressed concrete members, including footings. Partial design of concrete building system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE major or Construction Engineering BSE major; CEE 321 or CNE 321 with C or better; CEE 353 or CNE 353 with C or better; Credit is allowed for only CEE 421 or CNE 421 OR Visiting University Student
CNE	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student
CNE	452	Foundations	Applies soil mechanics to foundation and retaining wall systems, including bearing capacity, settlement, and lateral earth pressure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Civil Engineering BSE or Construction Engineering major; CEE 351 or CNE 351 with C or better; Credit is allowed for only CEE 452 or CNE 452 OR Visiting University Student
CNE	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engr major, senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student
CNE	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student

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CNE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Construction Engineering	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CNE	486	Integrated Civil Engr Design	Requires completion of a civil engineering design in a simulated practicing engineering environment. Limited to undergraduates in their final semester.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	4	L	Prereq(s): ENG 101, 105, or 107 with C or better; Civil Engr; CEE 321; CEE 341; CEE 351; CEE 353; CEE 361; CEE 372 OR Constr Engr; CEE 321, CNE 321; CEE 351, CNE 351 OR Envir Engr; CEE 341; EVE 302; EVE 303; Credit is allowed for only CEE 486 or CNE 486
CNE	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students
CNE	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Construction Engineering	3	L	Prerequisite(s): Constr Mgmt BS major, Constr Engr BSE major, BIS major w/ Constr Mgmt emphasis, or Constr Mgmt minor; CNE 453 or CON 453; ENG 101, 105, or 107 w/ C or better; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
COE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
COE	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
COE	503	Intro to Qualitative Research	Terminology, historical development, approaches (including ethnography, ethnomethodology, critical theory, grounded theory, and hermeneutics), and qualitative versus quantitative social sciences; methods of inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
COE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
COM	100	Intro to Human Communication	Topics-oriented introduction to basic theories, dimensions, and concepts of human communicative interaction and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	
COM	110	Elements Interpersonal Comm	Demonstration and practice of communicative techniques in establishing and maintaining interpersonal relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	124	Media and Culture	Introduces contemporary intercultural issues as expressed through various media in American society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	C	
COM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Pre-requisite: Maximum 24 earned hours
COM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	207	Intro to Communication Inquiry	Bases of inquiry into human communication, including introduction to notions of theory, philosophy, problems, and approaches to the study of communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	222	Argumentation	Philosophical and theoretical foundations of argumentation, including a comparison of models of advocacy and evidence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
COM	225	Public Speaking	Verbal and nonverbal communication in platform speaking. Discussion and practice in vocal and physical delivery and in purposeful organization and development of public communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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COM	230	Small Group Communication	Principles and processes of small group communication, attitudes, and skills for effective participation and leadership in small groups, small group problem solving, and decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	
COM	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
COM	241	Intro to Oral Interpretation	Communication of literary materials through the mode of performance. Verbal and nonverbal behavior, interface of interpreter with literature and audience, and rhetorical and dramatic analysis of literary modes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	250	Communication & the Workplace	Introduces the study of communication in the workplace, including topics such as successful organizational communication strategies, supervisor and peer relationships, workplace conflict, new media and technology, professionalism, organizational morale, work-life well-being and employee socialization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	259	Comm Bus & the Professions	Interpersonal, group, and public communication in business and professional organizations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): non-Communication student; minimum 25 hours OR Visiting University Student
COM	263	Elements Intercultural Comm	Basic concepts, principles, and skills for improving communication among persons from different minority, racial, ethnic, and cultural backgrounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	277	Sport Communication	Explores, synthesizes and evaluates the connection between communication and sport by examining the role and place of sport in community building, identity formation and media representations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Credit is allowed for COM 277 or COM 294 (Examination of communication in the sport context) or COM 294 (Sport Communication)
COM	281	Communication Activities	Participation in forensics or interpretation cocurricular activities.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		
COM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		
COM	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	300	Comm in Interdiscipl Studies	Examines and analyzes communication in the context of other academic disciplines. Open to BIS majors only.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): BIS student; ; minimum sophomore standing; minimum 2.00 GPA; COM 100 with C or better; COM 225 with C or better OR COM 259 with C or better OR Visiting University Student
COM	302	Representations of Veterans	Surveys the cultural history of veterans' representations from the early mythical verses about the Trojan War produced by Homer in the Odyssey (800 BC) to contemporary self-representations in social media platforms such as YouTube. Examines the various motives societies have for promoting specific kinds of representations of veterans, the veteran culture and their experiences. This course does not presume to offer a singular vision of the veteran experience. Instead, it seeks to expose students to the diversity of ways in which veterans are represented and self-represented. Readings and assignments provide an intersectional understanding of the veteran community, and the veteran and military cultures. By looking at the axis of race, gender, sexuality and class, students examine why specific modes of representations persist over time and encourage them to use this course as a starting point for future studies in any number of disciplines.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
COM	308	Adv Research Methods in Comm	Advanced communication research methods, including quantitative, qualitative, and critical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 207 with C or better; ENG 101, 105, or 107 with C or better; MAT 117 or an MA general studies course with C or better; minimum 2.00 GPA OR Visiting University Student
COM	309	Rhet/Interp/Methods-Commun	Examines humanistic and qualitative approaches to communication. Introduces textual, interactional and ethnographic methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better; minimum 2.0 GPA OR Visiting University Student
COM	310	Relational Communication	Explores communication issues in the development of personal relationships. Current topics concerning communication in friendship, romantic, and work relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student

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COM	312	Comm, Conflict & Negotiation	Theories and strategies of communication relevant to the management of conflicts and the conduct of negotiations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	314	Inner-City Families	Examines issues and concerns that confront inner-city families. Blends theory and application. From a theoretical perspective, examines issues that affect families who live in the inner city (e.g., race and poverty), as well as specific skills and programmatic elements that are needed to work with families in an urban setting. In terms of application, provides an intensive service-learning-based experience. Engages students in specific service to an embedded inner-city organization for a minimum of 3 hours per week. Students work with the professor to determine appropriate service placements.	N	PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100
COM	316	Gender and Communication	Introduces gender-related communication. Examines verbal, nonverbal, and paralinguistic differences and similarities within social, psychological, and historic perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	317	Nonverbal Communication	Study of communication using space, time, movement, facial expression, touch, appearance, smell, environment, objects, voice, and gender/cultural variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA; minimum 45 hours OR Visiting University Student
COM	319	Persuasion/Social Influence	Variables that influence and modify attitudes and behaviors of message senders and receivers, including analysis of theories, research, and current problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	320	Communication and Consumerism	Critical evaluation of messages designed for public consumption. Perceiving, evaluating, and responding to political, social, and commercial communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	321	Rhetorical Theory and Research	Historical development of rhetorical theory and research in communication, from classical antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & H	Prerequisite(s): COM 100 with C or better; ENG 101, 105, 107, or 111 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	323	Comm Approach Popular Culture	Critical analysis of popular culture within social and political contexts; emphasizes multicultural influences and representations in everyday life.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	C	Prerequisite(s): COM 100 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	324	Rhetoric and Media Criticism	Critical examination of media arts, including cinema, television, and video. Applies rhetorical, textual, and interpretive methods of criticism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Pre-requisite: Minimum 2.0 GPA
COM	325	Adv Public Spk & Presentations	Social and pragmatic aspects of public speaking as a communicative system; strategies of rhetorical theory and the presentation of forms of public communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	L	Prerequisite(s): COM 225 with C or better; ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	326	Court Room Oratory	Increases knowledge and appreciation of the role of communication in the development of legal and public policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		
COM	327	Civil Communication	Offers a theoretical understanding of civil communication and methods for applying civil communication practices in a variety of contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	328	Communicating Science:Publ Spk	Applies the fundamentals of public speaking and communication theory to technical and scientific presentations. Prepares students to communicate science and technology subject matter through presentations to the general public. Students adapt complex messages for a variety of audiences through traditional and multimodal presentations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only COM 328 or COM 394 (Communicating Science) or LSC 394 (Communicating Science)
COM	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Dm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Dm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Dm Wrk:Pg to Stg&Scrn) OR Visiting University Student
COM	341	Social Contexts Performance	Adaptation and performance of literature for the community outside the university. Research into the practical uses of performed literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA
COM	342	Oral History and Storytelling	Examines the formation of culture and history through research, presentations, the collection of oral history, and the telling of stories.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 101 or 102; Credit is allowed for only COM 342 or CMN 394 (Storytelling and Oral History) or COM 394 (Storytelling and Oral History) OR Visiting University Student

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COM	353	Professional Communication	Introduces both verbal and written professional communication styles and technologies in preparation for communication-related internships and careers.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	362	Urban Comm Latinx City	Explores and reflects on the impact of mediated representations of Latinx ethnic enclaves in the configuration of notions of community, citizenship and sense of belonging. Also looks at the role of media in identity formation as a way of engaging and challenging cultural, social and political ideologies and struggles in urban contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 362 or COM 394 (Urban Communication: Reinventing the Latinx City) or TCL 362 or TCL 394 (Urban Communication: Reinventing the Latinx City) OR Visiting University Student
COM	363	Latinxs and the Media	The rapid growth of Latinx-media within the U.S., and transnational/regional media in the Americas, is unprecedented. Local and global organizations serving Latinx communities are increasingly acknowledging the importance of preparing professionals and academics with an understanding not only of Latino communities, but also of media industries and communication issues that impact those communities. Examines the production, distribution, and consumption of Latinx Media and images in the United States (U.S.). Focuses on a wide range of mediated cultural production with an emphasis on visual media such as television, film, advertising and digital/social media. Pays special attention to the influence of the so-called Latinx market, the configuration of national, racial and ethnic identities, politics, cultural production and the ways it challenges and/or reproduces competing cultural ideologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 363 or COM 394 (Latinos and Media) or TCL 394 (Latinos and Media) OR Visiting University Student
COM	364	Cultural Communicology	Basic introduction to cultural communicology, focusing on its relationship to general systems theory and semiotics (the study of signs and sign systems). Focuses on lived-experience as a semiotic interrelation between culture and communication. General systems theory and semiotic theory are used to study culture as a living condition of communicative relations among humans and within their environment. Emphasizes practical applications to real-world problems. Examines communication as a confluence of intrapersonal, interpersonal, group and transcultural networks of codes and messages. Uses comparative cultural contexts as a basis for applied analysis.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): COM 100; Credit is allowed for only COM 364 or COM 394 (Cultural Communicology) OR Visiting University Student
COM	371	Language, Culture, &Comm	Cultural influences of language on communication, including social functions of language, bilingualism, biculturalism, and bidialectism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & C & G	Prerequisite(s): COM 263 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	377	Comm, Terrorism, & Nat'l Sec	Surveys strategic communication and its relationship to terrorism challenges facing the United States and the rest of the world. Begins with a look at language and definitions, how strategic communication functions are traditionally conceptualized, and the scope and extent of the terrorism problem. Focuses on the contemporary problems of terrorism, including its extent, tactics, and strategies and strategies that aim to combat it. Concludes with a look at new frontiers in the terrorism struggle, including new media and communication approaches.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA
COM	382	Classroom Apprenticeship	Nongraded credit for students extending their experience with a content area by assisting with classroom supervision in other COM courses.	N	PRA	N	YGB	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	383	Communication and Mentoring	Explores the role of communication in face-to-face and online mentoring relationships with an emphasis on message shaping, nonverbal communication, professionalism and audience analysis. Applies practice and theory from a variety of lower-division communication courses (public speaking, professional and business, small group, intercultural and interpersonal) to prepare students for mentoring roles in the Communication Assessment Learning Lab (CALL) on ASU's west campus. During the semester, students (individually and as a member of a group) are engaged in creating and delivering both online and in-person public speaking tutorials.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100 or 110 or 230 or 259 or 263 with B or better; COM 225 with B or better; Credit is allowed for only COM 383 or COM 498 (Call Lab Mentorship) OR Visiting University Student
COM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student

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COM	400	Communication in Professions	Specialized study of communication processes in professional and organizational settings.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU & C	Prerequisite(s): Interdisciplinary Studies or Business Communication student; COM 259 or COM 100 and 225 with C or better; minimum 2.00 GPA; minimum sophomore standing OR Visiting University Student
COM	407	Adv Critical Methods in Comm	Examines critical approaches relevant to communication, including textuality, social theory, cultural studies, and ethnography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 407 or COM 507 OR Visiting University Student
COM	408	Quant Research Meth in Comm	Advanced designs, measurement techniques, and methods of data analysis of communication research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 308 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 408 or COM 508 OR Visiting University Student
COM	410	Intrprsnl Com Thy & Resrch	Survey and analysis of major research topics, paradigms, and theories dealing with message exchanges between and among social peers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 308 with C or better; COM 110 or 310 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	411	Communication in the Family	Broad overview of communication issues found in marriage and family life, focusing on current topics concerning communication in the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 207 with C or better; minimum 2.00 GPA; Credit is allowed for only COM 411 or CMN 598 (Communication in the Family) OR Visiting University Student
COM	413	Resilient Rels & Communities	Explores resilience in individuals, relationships and communities, placing specific emphasis on the psychological, social and cultural factors that determine how people cope, recover and even thrive after experiencing major adversity or disruption and how resilience is defined, enacted and sustained through communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): min junior standing; min 2.00 GPA; Credit is allowed for COM 413 or COM 494 (Resilient Comm & Relationships) or CMN 598 (Resilient Comm & Relationships) or PSY 598 (Resilient Comm & Relationships) OR Visiting University Student
COM	414	Crisis Communication	Role of communication in crisis development and intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	415	Risk Communication	Understanding how risk is constructed and assessed across social spheres, developing familiarity with dominant approaches to framing risk and the principles and professional practices of risk communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA; minimum junior standing; Credit is allowed for only COM 415 or COM 494 (Risk Communication) OR Visiting University Student
COM	416	Gender and Race in the Media	Explores how the mass media constructs gender and race and perpetuates views of minorities and varied nationalities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	417	Communication and Aging	Critical study of changes in human communicative patterns through the later adult years, with attention on intergenerational relationships and self-concept functions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA
COM	420	Rhetoric & Community Advocacy	Critical rhetorical study of local communities and advocacy, including fieldwork guided by rhetorical theory; the intersection of media, rhetoric and advocacy; and reflexivity in rhetorical fieldwork. Examines rhetoric in the context of community advocacy and through participant observation within social controversies.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 308 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 420 or COM 494 (Rhetoric and Community Advocacy)
COM	421	Rhetoric of Social Issues	Critical rhetorical study of significant speakers and speeches on social issues of the past and present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 308 or 309 with C or better; COM 321 or 323 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	422	Advanced Argumentation	Advanced study of argumentation theories and research as applied to public forums including: political, business, and legal contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	L	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; minimum junior standing; minimum 2.00 GPA OR Visiting University Student
COM	423	Facilitating Collab & Dialogue	Explores processes of collaboration, dialogue, deliberation and participative decision making. Examination of both philosophical and scientific perspectives on to these processes as they relate to communication in various settings (community relations, dispute resolution, social work, policing and politics) and in personal relationships and family life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only CMN 598 (Facilitating Collaboration and Dialogue) or COM 423 or COM 494 (Facilitating Collaboration and Dialogue) OR Visiting University Student
COM	424	Television Studies & Criticism	Surveys critical and historical approaches to television as a medium; to television research; and to television's effects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.00 GPA

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COM	426	Political Communication	Theories and criticism of political communication; including campaigns, mass persuasion, propaganda, and speeches. Emphasizes rhetorical approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	427	Crime and Media	Examines the relationships among crime and discourse, media representations of crime and criminals, and the structural deficiencies in society that perpetuate relations of domination and oppression based on class, race, gender and sexuality.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 427 or CRJ 427 or COM 494 (Crime, Communication and Media) or CMN 598 (Crime, Communication and Media) OR Visiting University Student
COM	428	Graphic Novels	Rhetorical analysis, with a focus on the graphic novel as both persuasive product and practice. Explores the communicative, persuasive and cultural effects of this medium and specifically offers vocabulary and tools for critically viewing its influence on popular culture.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only COM 428 or COM 494 (Graphic Novels and Popular Culture) OR Visiting University Student
COM	429	Semiotics/Visual Communication	Semiotic analysis of mediated forms of communication, including film, television, and photography. Includes the political and aesthetic dimensions of images.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student
COM	430	Leadership Group Communication	Theory and process of leadership in group communication, emphasizing philosophical foundations, contemporary research, and applications to group situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	432	Forgiveness and Reconciliation	Examines various communication processes related to forgiveness and reconciliation with a focus on constructive, prosocial responses to interpersonal relationship hurt and disappointment.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only COM 432 or COM 494 (Forgiveness and Reconciliation) or COM 494 (Forgiveness, Mindfulness, and the Healthy Self) or CMN 598 (Forgiveness and Reconciliation) OR Visiting University Student
COM	441	Performance Studies	Theory, practice, and criticism of texts in performance. Emphasizes the interaction among performer, text, audience, and context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; COM 308 with C or better; minimum 2.00 GPA
COM	442	Identity, Perf, Human Comm	Explores communication dimensions of self and others as performance. Examines topics that include gender, race, sexuality, age, and ethnicity through performance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 225 with C or better; COM 241 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	445	Narrative Performance	Theory and practice of performing narrative texts (e.g., prose fiction, oral histories, diaries, essays, letters). Includes scripting, directing, and the rhetorical analysis of storytelling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	HU	Prerequisite(s): COM 241 with C or better; minimum 2.00 GPA
COM	446	Perform Lit Written by Women	Explores, through performance and critical writing, literature written by women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	(L or HU) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	450	Organizational Communication	Offers advanced exploration of organizational communication principles through analyses of scholarship and contemporary case studies. Topics include workplace culture, networking, leadership, management, nonprofits, virtual organizing, work-life balance, organizational change, power, control and ethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB	Prerequisite(s): COM 250 with C or better; COM 308 or 309 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	451	Comm and Work Relationships	Communication principles and practices associated with supervisory, peer, and client relationships.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 100; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
COM	452	Communication of Happiness	Examines how communication behaviors relate to constructing happiness and wellbeing. Topics include gratitude, forgiveness, social support, appreciation, social networks and communicative contagion of mood intersecting with issues of dyadic, group and organizational communication. Auxiliary readings come from a variety of disciplines, including psychology, management, sociology, positive organizational scholarship and appreciative inquiry. Course activities include reading, field exercises, journal writing, exams, project presentation(s) and paper(s).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA; minimum junior standing OR Visiting University Student
COM	453	Communication Training/Develop	Examines the procedures and types of communication training and development in business, industry, and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	454	Rhetorical/Critical Approaches	An historical and contemporary account of how public relations messages build corporate identities and persuade audiences by shaping public values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA; Credit is allowed for only COM 454 or CMN 598 (Rhetorical&Critical Approaches to Public Relations)

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COM	455	Surveillance & Popular Culture	Surveys representations of surveillance in popular culture.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CMN 598 (Surveillance, Film and Culture) or COM 455 or COM 494 (Surveillance, Film and Culture) or STC 598 (Surveillance, Film, and Culture)
COM	456	Political Comm Campaigns	Theory and research related to political campaign communication. The persuasive process of political campaigning, the role of the media, the candidate and image creation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): minimum 2.00 GPA
COM	457	New Media	Explores how new communication and information technologies affect communication and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 207 with C or better OR minimum junior standing; minimum 3.0 GPA OR Visiting University Student
COM	458	Media and Everyday Life	Considers media in the routine, habitual and somewhat unconscious aspects of our lives, particularly mobile media transported in and out of public and private spaces.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 458 or COM 494 (Media and Everyday Life) Visiting University Student
COM	459	Social Media Networks	A network-based perspective plays an increasingly important role in our understanding of contemporary communication process of which much has shifted from a hierarchical, densely bounded group basis to a personalized, lateral network. Especially, along with the popularity of social media, social networking has become a key term that characterizes our everyday life. Discusses the role of new media technologies in evolving networked society, and how online networks are intertwined with our offline life. Covers theories and computerized methods that help understand online network structure. Includes lectures and discussions on theoretical issues with hands-on exercises of analytic methods.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; minimum 2.50 GPA; MAT 142 or higher with C or better; Credit is allowed for only COM 459 or COM 494 (Social Networks)
COM	463	Intercultural Comm Globl Cntrt	Survey and analysis of major theories and research dealing with communication between people of different cultural backgrounds, primarily in international settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3	SB & G	Prerequisite(s): COM 263 with C or better; COM 308 with C or better; minimum 2.00 GPA OR Visiting University Student
COM	464	Communicative Sexualities	Grounded in the discipline of communication, provides an introduction to the qualitative research practice of semiotic phenomenology. Examines sexuality as a personal, social, historical, and cultural phenomenon, wherein communication is studied as the mediating force through which meanings are ascribed to sexuality and sexual experience. Sexuality is studied as it manifests among a wide variety of people, practices, and contexts. U.S. American culture provides the primary cultural context. Addresses basic questions including: How do we understand sexuality? How have we come to know what we know about sexuality? How do we understand the relationship between sexuality as personal desire, and sexuality as social norm in specific cultural contexts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): minimum junior standing; minimum 2.50 GPA OR Visiting University Student
COM	465	Intercultural Comm Workshop	Experientially based study of communication between members of different cultures designed to help students improve their intercultural communication skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	467	Digital Rhetoric	Critical rhetorical study of intersection of public advocacy, deliberation, argumentation and digital media. Examines a variety of digital media as they intersect with theories of rhetoric. Explores digital technology through a blending of criticism upon and creation of digital artifacts.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): COM 207 with C or better; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): junior or senior standing; Credit is allowed for only COM 467 or COM 494 (Digital Rhetoric)
COM	471	Global Media&Cultural Identity	Explores theory and practices of global media production, dissemination and consumption. Surveys the ways in which local, regional and global sociocultural and political forces interplay to shape cultural identities and media consumption.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 2.50 GPA; Junior standing OR Visiting University Student
COM	477	Sport, Culture, and Discourses	Introduces sport as a global economic and cultural force, and as a foundational discourse experienced largely through media. Facilitates the understanding of sport as a major cultural and socializing institution and, thus, as a key site for the construction of knowledge, understandings, ideologies, and identities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA

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COM	482	Communication Instr and Train	Explores instructional communication practices applied to professional training settings. Considers verbal, nonverbal and technological aspects of instructional communication with an emphasis on training professional and community audiences.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 2.50 GPA OR Visiting University Student
COM	483	Advanced Com & Mentoring	Students serve as peer mentors in the Communication Assessment Learning Lab (CALL) with instructional emphasis on speaker apprehension, listening, the dynamics of group communication and leadership. Through experiential learning, mentors employ ethical peer tutoring practices by coaching undergraduates in managing public speaking apprehension, speech development and organization. Further, mentors provide on-the-spot feedback to undergraduates relating to delivery techniques, style, nonverbal communication, persuasive strategies and the use of presentational material.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): COM 383 with C or better OR Visiting University Student
COM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): COM 225 with C or better; COM 308 with C or better; minimum 56 hours; minimum 2.00 GPA or New College communication student with minimum 2.80 GPA
COM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
COM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
COM	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-6		Prerequisite(s): Barrett Honors student
COM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-7		
COM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-3		Prerequisite(s): minimum 2.00 GPA
COM	501	Research Methods in Comm	Critical analysis of systems of inquiry in communication, focusing on the identification of variables and approaches to conducting research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student
COM	504	Theories and Models in Comm	Theory construction, metatheoretical concerns, models, construct definition, and comparative analysis of current theories in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications graduate student
COM	507	Qual Rsrch Methods in Comm	Qualitative research methods, including interviewing, field methods, and other nonquantitative techniques for analyzing communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications Graduate student; Credit is allowed for only COM 407 or 507
COM	508	Quant Rsrch Methods in Comm	Empirical research designs, measurements, and statistical strategies and techniques in analyzing and evaluating experimental and descriptive research in communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Pre-requisites: Communications Graduate student. Credit is allowed for only COM 408 or COM 508
COM	510	Transmedia Narratives	Explores the history, production, distribution and consumption of transmedia narratives as an emergent multiple-platform dynamic of storytelling. Focuses on digital storytelling, the dynamics of nonlinear narrative and immersive audience experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	514	Communication and Gender	Investigate the role that gender and identity plays in communication and the life of the organization. Provides a theoretical overview of the topics as well as opportunities for personal reflection and discussion. Students acquire the background and practical skills necessary to recognize the barriers to effective communication, and a variety of tools and strategies with which to manage interactions within organizations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 514 or COM 598 (Communication and Gender)

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COM	515	Communication in the Workplace	Provides an in-depth review of the core concepts and areas of organizational communication to advance students' understanding of the role of communication in workplace interactions and professional achievement. Throughout the coursework, students learn and discuss key scholarly perspectives, which enable them to (a) better articulate the changing nature of modern work, (b) analyze their own work experiences, and (c) improve their adaptability at work by applying their knowledge of communicative interactions. In addition to theoretical discussions, students investigate contemporary issues and case studies with respect to the nature of the modern workplace.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 515 or COM 598 (Communication in the Workplace)
COM	517	Conflict Transformation	Focuses on the principles and perspectives of conflict, including discussions on the practices that push toward conflict transformation. Engages in application activities that allow students to apply such practices to theory, online simulated activities, and personal experiences. Course readings, which include both academic and research-based applied texts, address perspectives of conflict and the impact of power, relationship and context on conflict episodes, among other topics. Requires students to engage in online simulated activities and reflect on their experiences and the relevance of theory to those experiences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 517 or COM 598 (Communication and Conflict Transformation)
COM	518	Global Contexts	Globalization is a profound influence on contemporary societies, including facilitating greater opportunities for communication across regional and international borders. As mediated content and networks grow at unparalleled rates, new flows of information and knowledge connect families, communities and nations. Yet, at the same time, sociocultural differences and digital divides exist to widen gaps in our relationships and development processes. Develops a critical understanding of the relationships between culture and communication technologies in the changing infrastructures, networks and boundaries of our increasingly globalized world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 518 or COM 598 (Communication in Global Contexts)
COM	519	Social Influence	Studies social influence and persuasion in the discipline of communication from a social scientific perspective. Examines significant processes and factors whereby human communication can effectively impact the perspectives, attitudes and behaviors of others.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 519 or COM 598 (Social Influence and Persuasion)
COM	520	Crisis Management	Explores the crucial role of strategic communication principles and practices throughout the stages of crises that impact organizations and their stakeholders. By mastering these principles and practices, equips students to constructively evaluate and engage in the consequential communication that accompanies each organizational crisis stage. Explains how communication can prevent, cause, exacerbate and remedy organizational crises. Summarizes the elements that constitute a crisis for organizations and organized communities. Differentiates the various stages that comprise the two primary organizational crisis models. Evaluates an organization's preparation for, response to, and recovery from an actual crisis event.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 520 or COM 598 (Crisis Management and Communication)
COM	521	Negotiation	Focuses on the theory and practice of negotiating as well as how theory and practice influence one another. Course readings, including both academic and research-based applied texts, address principles of effective negotiating and the impact of emotion, sex and culture on practice, among other topics. Students engage in a variety of applied negotiation activities and reflect on their experiences and the relevance of theory to their experiences (and vice versa) in written assignments and class discussion boards.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COM 521 or COM 598 (Negotiation Theory and Practice)

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COM	530	Training and Development	Provides an in-depth review of the core concepts relevant to training and development informed by adult learning theories and situated within contexts relevant to the human communication discipline. Purposefully designed to advance students' understanding of the role of communication and human interaction in training and development especially in workplace contexts. Throughout the coursework, students learn and discuss key scholarly perspectives, which enable them to (a) more deeply appreciate and understand the training and development cycle components, (b) reflect on and analyze their own experiences as participants in training and development sessions, and (c) create and implement learner-centered training and development plans grounded by theoretical frameworks.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communication MA student; COM 501 with B or better; COM 504 with B or better; Credit is allowed for only COM 530 or COM 598 (Training and Development)
COM	540	Conducting Comm Research	Develops the skills necessary to conduct communication research in the workplace. Students develop a research proposal for a project that they could conduct at their current jobs or a job they would like to have. They may choose to develop a proposal for their capstone project or a project that they would like to conduct in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; minimum four completions of COM 598; minimum 3.00 GPA
COM	550	Capstone	Culminating experience of the Master of Arts in Communication. The capstone course allows each student to develop a project that answers a question or solves a problem tailored to his or her interests, needs and goals. Develops final products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): COM 501; COM 504; COM 540; minimum four completions of COM 598; minimum 3.00 GPA
COM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Pre-requisite: Communications Graduate student
COM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	604	Theory Construction in Comm	Review and analysis of philosophical problems inherent in communicative research and of metatheories designed to deal with these problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	607	Contemporary Rhetorical Method	Analysis of issues in the practice of rhetorical communication research, including criticism and scholarship.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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COM	608	Multivar Stat Anlys Data Comm	Statistical analysis of communication research data. Multivariate procedures used in communication research and methods of causal analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	609	Adv Qual Research Meth Comm	Analysis of issues in the practice of qualitative communication research, including data gathering, fieldwork issues, analysis strategies, and reporting results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	3		Prerequisite(s): Communications PhD student
COM	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): Communications graduate student
COM	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1		Prerequisite(s): degree- or nondegree-seeking graduate student
COM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	Hugh Downs School of Human Communication	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	100	Introduction to Construction	Introduces construction industry sectors and professionals. Additional content includes developing personal competencies required of construction professionals.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	101	Const/Culture: a Built Environ	Analyzes the cultural context of construction, emphasizing its centrality in the evolution and expansion of built environments as expressions of ethical and historical value systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	HU & H	
CON	106	Intro to Con Mat for Built Env	Effects of concrete-making materials (aggregates, cements, admixtures, etc.) on the properties of fresh and hardened concrete. Discusses concrete mixture proportioning along with the calculations and statistical analysis of strength testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4	SQ	
CON	221	Applied Statics	Vectors, forces and moments, force systems, equilibrium, analysis of basic structures and structural components, friction, centroids, and moments of inertia.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): MAT 170 or higher with C or better; PHY 111 with C or better; PHY 113 with C or better OR Visiting University Student
CON	223	Strength of Materials	Analyzes strength and rigidity of structural members in resisting applied forces. Stress, strain, shear, moment, deflections, combined stresses, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		Prerequisite(s): CON 221 with C or better; CON 252 with C or better OR Visiting University Student
CON	241	Surveying	Theory and fieldwork in construction and land surveys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better; Credit is allowed for only CEE 281 or CNE 241 or CON 241 OR Visiting University Student
CON	243	Heavy Constr Equip, Mthd, Matl	Emphasizes Horizontal construction. Fleet operations, maintenance programs, methods, and procedures to construct tunnels, roads, dams, and the excavation of buildings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Credit is allowed for only CNE 243 or CON 243
CON	244	Working Drawing Analysis	Provides the ability to read and understand architectural plans; to understand drawing symbols, dimensions, abbreviations, and terms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	2		
CON	251	Microcomputer Appls for Constr	Applies the microcomputer as a problem-solving tool for the constructor. Uses spreadsheets, information management, and multimedia software.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): MAT 170 or higher with C or better OR Visiting University Student
CON	252	Bldg Constr Meth, Matl, Equip	Emphasizes Vertical construction. Methods, materials, codes, and equipment used in building construction corresponding to the division of the CSI Master Format.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		

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CON	271	Construction Safety	Safety procedures and equipment. OSHA requirements for construction. Biological aspects of construction safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Credit is allowed for only CNE 271 or CON 271 OR Visiting University Student
CON	273	Electrol Constrctn & Proj Mgmt	Electrical construction, design, estimating, scheduling and project management. Electrical safety, blueprints and symbols, theory, sequence of installation. National Electrical Code (NEC).	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		
CON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	296	Summer Field Internship	Participation as interns on construction projects to observe and experience the daily activities.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; CON 271 or CNE 271; Credit is allowed for only CON 296 or CNE 296
CON	310	Testing of Material for Constr	Structural and behavioral characteristics, engineering properties, measurements, and application of construction materials. Not open to engineering students.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Construction Management BS major; CON 221 with C or better; Pre- or corequisite(s): CON 223 with C or better if completed OR Visiting University Student
CON	343	Adv Hvy Equip Operations	Reviews the principles of horizontal construction. Emphasizes fleet operations, maintenance programs, methods and procedures to construct tunnels, roads, dams and the excavation of buildings.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 252; minimum junior standing; Credit is allowed for only CON 343 or CON 394 (Advanced Heavy Equipment Operations) OR Visiting University Student
CON	345	Mechanical Systems	Design parameters and equipment related to heating and cooling systems for mechanical construction. Biorelated aspects of mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 221 with C or better; CON 252 with C or better; PHY 111 or 121 with C or better; PHY 113 or 122 with C or better OR Visiting University Student
CON	383	Construction Estimating	Analyzes construction drawings and specifications. Utilizes advanced technical and ethical practices in estimating process. Quantity surveying techniques for CSI divisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	4		Prerequisite(s): Cons Mngmt BS major; CON 252 OR Cons Engrng BSE major; CNE 243 or CON 243 OR Interdisc Studies BIS major or Cons Mngmr minor; CON 243 or 252; Credit is allowed for only CNE 383 or CON 383 OR Visiting University Student
CON	384	Env Aspects of Heavy Const	Methods, measures and analysis related to control of erosion, dust generation and storm water discharge during projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): BS Construction Management major. Pre- or corequisite(s): CON 243. Credit is allowed for only CON 384 or CON 394 (Environmental Aspects of Heavy Construction)
CON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Pre-requisite: Engineering BS or BSE student
CON	424	Structural Design	Economic use of concrete, steel, and wood in building and engineered structures. Design of beams, columns, concrete formwork, and connections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; Pre- or corequisite(s): CON 310 OR Visiting University Student
CON	441	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prereq(s): Con Engrn BS or Con Mngmt BSE major; min junior standing; Credit is for only CON 441 or CON 541 or CEE 494(Pub Wrks Cap Con) or CON 494(Pub Wrks Cap Con) or CEE 598(Pub Wrks Cap Con) or CON 598(Pub Wrks Cap Con) OR Visiting University Student
CON	446	Marketing for Construction	Provides key marketing practices to include strategic planning, marketing collateral, networking, business development, and interview preparation for project pursuits. Covers all aspects of service-based marketing topics and practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): COM 225; CON 221 with C or better OR Visiting University Student

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CON	448	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS or Civil (Sustainable Engineering) BSE major; min senior standing; Credit is for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustainability in Construction) OR Visiting University Student
CON	450	Geotechnical Appls for Constr	Soil formation, engineering properties and use as building materials. Soil's influence on construction of built environment, including specifications and biological aspects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS major; CON 223 with C or better; CON 310; Credit is allowed for only CNE 450 or CON 450 OR Visiting University Student
CON	451	Innovative Project Delivery	Studies design and construction interaction; the RFP (request for proposal) and RFQ (request for quote) process; risk allocation issues; developing successful project proposals, procurement and selection.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management, Construction Engineering, Civil Engineering, or Architectural Studies major; senior standing; Credit is allowed for only CON 451 or CON 494 (Alt Project Delivery Mthds) or CON 551
CON	453	Construction Technology	Building information modeling, including current computer programs and technology planning strategies for advanced project deliveries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Mgmt major, Interdisc Studies major (Construction Mgmt concentration), or Construction Mgmt minor; CON 251 OR Construction Engrn major; senior standing; Credit is for only CNE 453 or CON 453 OR Visiting University Student
CON	454	Trenchless Construction Methods	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods and materials required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 243 or CON 243; Credit is allowed for only CON 454 or CON 554 OR Visiting University Student
CON	455	Construction Project Mgmt II	Advanced topics in administrative procedures, planning processes, and coordination required to successfully complete construction projects on time and budget.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CNE 495 or CON 495; Credit is allowed for only CNE 455 or CON 455 OR Visiting University Student
CON	457	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 457 or CON 557 OR Visiting University Student
CON	465	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing and efficient practices.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 465 or CON 565
CON	467	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): junior or senior standing; Credit is allowed for only CON 467 or CON 567 or CON 494 (Advanced Procurement Systems)
CON	483	Advanced Building Estimating	Concepts of pricing and markup, development of historic costs, life cycle costing, change order and conceptual estimating.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Visiting University Student
CON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): Construction Management BS major with CON 296 or CNE 296 OR Construction Engineering BSE major with CON 271 or CNE 271; Credit is allowed for only CON 484 or CNE 484
CON	486	Heavy Construction Estimating	Methods analysis and cost estimation for construction of highways, bridges, tunnels, dams, and other engineering works.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction BS major; CON 383 with C or better OR Construction Engineering BSE major OR Visiting University Student

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CON	487	Project Controls	Project staff roles and responsibilities, project documentation process and control, project control processes to manage quality, schedule and budget, quantity tracking and earned value management, and financial management of a construction project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre- or corequisite(s): CON 495 OR Visiting University Student
CON	488	Heavy Con Earthworks	Geotechnical issues with respect to foundation grading, forming and location for various types of infrastructure and transportation projects. Also includes streets, highway and embankment developments, retaining wall system, mechanically stabilized earth walls, and required quality control methods for these activities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Management BS or Construction Engineering BSE major; Pre- or corequisite(s): CON 243; Credit is allowed for only CON 488 or CON 494 (Heavy Construction Earthworks)
CON	491	Construction Project Capstone	Develops understanding and knowledge of topics and concepts required to be a construction manager. A construction project is the basis for applying cost estimating, scheduling, safety, communications and other construction management skills.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 383; CON 495; Pre- or corequisite(s): CON 455; Credit is allowed for only CON 491 or CON 494 (Construction Project Capstone)
CON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6		Prerequisite(s): Barrett Honors student
CON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		
CON	495	Construction Plan & Scheduling	Various network methods of project scheduling, such as AOA, AON Pert, bar-charting, line-of-balance, and VPM techniques. Microcomputers used for scheduling, resource allocation, and time/cost analysis.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	CS	Prerequisite(s): Construction Mngmt BS major, Construction Engineering BSE major, BIS major with Construction Mngmt emphasis, or Construction Mngmt minor; CNE 383 or CON 383; Credit is allowed for only CNE 495 or CON 495 OR Visiting University Students
CON	496	Construction Contract Admin	Surveys administrative procedures of general and subcontractors. Studies documentation, claims, arbitration, litigation, bonding, insurance, and indemnification. Discusses ethical practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3	L	Prerequisite(s): Constr Mgmt BS major, Constr Engr BSE major, BIS major w/ Constr Mgmt emphasis, or Constr Mgmt minor; CNE 453 or CON 453; ENG 101, 105, or 107 w/ C or better; Credit is allowed for only CNE 496 or CON 496 OR Visiting University Student
CON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-3		
CON	501	Construction Research Methods	Data collection methodologies, applied parametric and nonparametric statistics, data analysis techniques, technical writing, and data presentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Construction Graduate student
CON	502	Front-End Planning	Principles and applications for effective early planning of capital facilities, including: finance, economics decision making, risk management, team alignment and front-end planning processes and tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Civil Engineering or Construction or Construction Engineering student; Credit is allowed for only CEE 502 or CON 502 or CON 598 (Front End Planning) or CEE 598 (Front End Planning)
CON	508	Engineer and Construct Failure	Engineering, construction and ethics failures. Focuses on failures in the built environment. Students tailor the assignments and projects to their specific engineering or construction discipline.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prereq(s): degree- or nondegree-seeking graduate student; Credit allowed for only CON 508 or FSE 508 or CEE 598 (Engineering and Construction Failures) or CON 494 (Engineering and Construction Failures) or CON 598 (Engineering and Construction Failures)
CON	509	Advanced Concrete Materials	Properties of Portland cement concrete materials at an advanced level by examining the influence of constituent materials (cements, aggregates and admixtures) on the properties and behavior of fresh and hardened concrete under various types of loading and environmental conditions.	N	LEC	N	OP3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 509 or CON 494 (Advanced Concrete Materials) or CON 598 (Advanced Concrete Materials)

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CON	510	Sustainable Bio-Based Constr	State of the art on sustainable bio-based construction for buildings and infrastructure. Helps students gain knowledge on the following topics related to construction: various types of emerging bio-materials, novel technologies and processes in bio-material development, emerging technologies for characterization and diagnosis.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Civil, Enviro or Sustainable Engr MS, MSE, or PhD student or Construction Engineering MSE, Construction Mgmt PhD, or Construction Mgmt & Tech MS student; Credit is allowed for only CON 510 or CON 598 (Sustain Bio-based Construction)
CON	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511
CON	530	Facil Operations & Maintenance	Operations, maintenance and energy management requirements of various types of facilities and built environments. Ethical practices	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 430, 494 (Facilities Management/Operations & Maintenance), 530 or 598 (Facilities Management/Operations & Maintenance)
CON	531	FM Building Energy Mgt	Understand and learn energy management techniques in facilities management. Identifying and performing efficiency evaluations on various types of heating, ventilation and air conditioning systems in typical buildings. Concepts and methods of managing, adjusting and balancing equipment and systems for maximum facility performance. Facilities organizations best practices to maximize energy savings and performance, such as insulation usage, lighting optimization, energy management systems and commissioning procedures. Identification of ancillary benefits to energy-efficient building systems such as indoor air quality, sustainability and energy audits.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CON 531 or CON 598 (Facility Management Building)
CON	532	Facilities Project Management	Understand and learn project management techniques in facilities management. Stakeholder analysis, including roles, responsibilities and risk considerations. Asset owner and manager considerations within project components and deliverables. Development of project scope, requirements, schedules, budgets and communication plans from a facility manager's perspective. Best practices of facilities organizations for managing contract types, contract governance and performance management.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only CON 532 or CON 598 (Facility Project Management)
CON	534	Retrofit Construction	Focuses on energy efficiency retrofits in existing commercial buildings. Defines retrofit and why we retrofit. Examines current industry practices, impacts of retrofit construction on finances and the environment, and independent student investigation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed only for CON 534 or CON 598 (Retrofit Construction)
CON	540	Construction Productivity	Productivity concepts. Data collection. Analysis of productivity data and factors affecting productivity. Means for improving production and study of productivity improvement programs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction MS or Construction Engineering MSE major
CON	541	Public Works Capital Con	Practices and policies employed in delivering capital construction projects by government agencies at various levels. The full lifecycle of the typical public works capital construction project from planning, through design and construction, to operations and maintenance. Additional lecture topics include sustainability, strategic planning, risk management and safety.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate Construction Engineering or Construction Management student; Credit is allowed for only for CON 441 or CON 541 or CEE 494/CON 494 (Public Works Capital Construction) or CEE 598/CON 598 (Public Works Capital Construction)
CON	545	Construction Project Mgmt	Theory and practice of construction project management. Roles of designer, owner, general contractor, and construction manager.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction or Construction Engineering graduate student
CON	548	Sustainable Construction	Studies the principles associated with sustainable construction: problem definition, definition of sustainability, measures of sustainability, examination of current industry practices, financial and resource impacts of sustainable construction, independent student investigation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Civil, Environmental & Sustainable Engineering or Construction Engineering or Construction Management graduate student; Credit is allowed for only CON 448 or CON 548 or CON 598 (Sustainable Construction) or CON 598 (Sustain in Constrn)

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CON	551	Alternative Proj Delivery Meth	Design/construction interaction; conceptual estimation and scheduling; the RFQ/RFP process; legal, insurance, risk allocation issues; procurement and selection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 451 or CON 494 (All Project Delivery Mthds) or CON 551
CON	554	Trenchless Construction Methds	Theory and practice of trenchless construction methods. Types of equipment, roles of site personnel, engineering design, contractual issues, and safety. Lecture, class projects, and site visits. Knowledge of heavy construction equipment, methods, and materials required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): Construction Engineering OR Construction Management graduate student
CON	557	Prin of Lead for Proj Mngrs	Individual, organizational and process/structure leadership in project setting. Four-step leadership transformational model for project leaders. Project leadership tools and applications to motivation, conflict management, team building and delegation of risk.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 457 or CON 494 (Prin Lead & Management) or CON 557 or CON 598 (Prin Lead and Mgmt)
CON	565	Ded Logic, Lead and Ind Struc	Simple, logical explanations of construction and other industries. State-of-the-art supply chain, profit maximizing, and efficient practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only CON 465 or CON 565
CON	567	Advanced Procurement Systems	Development of multicriteria decision procurement model for selecting the performing contractor.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CON 467, 567 or 494 (Advanced Procurement Systems)
CON	570	Intro to Adv Tech Facilities	Introduces advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. The constructor's viewpoint, including: planning, structures, mechanical, and tool installation. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	571	Const Adv Tech Facilities	Construction issues for advanced technology facilities such as cleanrooms, data centers, research labs, and hospitals. Issues include scheduling, cost estimating, project management, mechanical, safety, commissioning and tool hookup. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): CON 570 with C or better
CON	575	Info Technology in Constructn	Uses virtual construction methodologies to improve the construction enterprise using communications, facility modeling, and decision making. Site visits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	589	Construction Co Financ Control	Financial accounting and cost control at the company level in construction companies. Accounting systems. Construction project profit calculations. Financial analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	3		Pre-requisite: Engineering MS, MSE or PHD student
CON	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-4		Prerequisite(s): Construction Engineering OR Construction Management graduate student

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CON	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Pre-requisite: Construction Masters student
CON	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	700	Research Methods	Course on research methods in a specific discipline.	N	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student
CON	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CON	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Del E. Webb Construction	1-15		Pre-requisite: Construction Doctoral student
CPI	101	Introduction to Informatics	Concepts, tools, techniques, and applications of informatics. Includes overview of programming, data management, visualization, modeling, and social implications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	111	Game Development I	Introduces video game design, art theory, and concepts as they apply to video game development. Basic art principles used in game development. Covers the fundamental video game art principles of 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets. Also includes game design, game production, asset production, and game programming. Hands-on experience by creating 2-D game prototypes belonging to different video game genres and evaluating the techniques.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	CS	
CPI	200	Math Foundation of Informatics	Practical introduction to the mathematics necessary for studies in informatics. Topics include discrete math, analytic geometry, calculus, and linear algebra.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	MA	Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 243 with C or better OR Visiting University Student
CPI	211	Game Development II	Introduces the basics of 3D game development by using a game engine. Focuses on the pipeline of 3D game development including environment and contents creation, scripting to control components, and graphics user interfaces development. Develops several 3D games for multi platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 111 with C or better OR Visiting University Student
CPI	220	App Data Struct and Algorithms	Thorough grounding in applied knowledge and skills related to algorithms and data structures used in the development of software designed to solve complex problems. Overview of computational and critical thinking skills that can be called upon to analyze and solve complex problems in multiple domains.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	221	Advan Obj Orient Prin w/Java	Advanced object-oriented programming using the Java language. Design concepts and problem solving.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 220 with C or better
CPI	310	Web Information Mgt System	Relational database design, entity-relationship modeling, relational algebra, SQL, database access through Web, Web data management, introduction to XML, fundamentals of Web application development, Web server architectures, lecture, in-class lab activities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student

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CPI	311	Game Engine Development	State-of-the-art techniques for computer game design and programming with an emphasis on 3-D graphics and interaction. Focuses on a practical, example-driven approach to learning the unique art of 3-D game development. Topics include graphics game engines, textures, shader programming, artificial intelligence, physics, modeling, sound effects, and techniques for user interfaces.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better; CSE 205 with C or better OR Visiting University Student
CPI	321	Fundamentals of Game Art	Introduces art theory and concepts as they apply to video game development. Covers 2-D and 3-D composition, color theory, modeling, and lighting techniques. Demonstrates practical application of these art fundamentals in establishing style guides, concept art, storyboards, and in-game assets.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	350	Eval of Informatics Systems	Methods for evaluation of informatics systems, including design of computational and human experiments, ethnography, and analytic techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): GIS 270, GIS 470, IEE 380, STP 226, STP 231, or STP 420 with C or better OR Visiting University Student
CPI	360	Decision Making & Problem Solv	Practical use of database systems, computer graphics, and modeling to inform decision making.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		
CPI	411	Graphics for Games	Examines real-time rendering of high-quality interactive graphics. Studies advances in graphics hardware and algorithms that make this possible. Examples of techniques and topics include nonphotorealistic rendering, occlusion culling, level of detail, terrain rendering, shadow generation, image-based rendering, and physical simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better
CPI	421	3-D Modeling and Texturing	Provides working knowledge of 3-D modeling, texture mapping, and paint concepts for the creation of 3-D video games art assets. Students work on concepts such as 3-D lighting, high polygon mesh rendering, and various third-party software and how to integrate them into the asset production pipeline.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 211 with C or better OR Visiting University Student
CPI	441	Gaming Capstone	Industry-oriented course emphasizing the video game development process, technical skills, teamwork and communication among the students enrolled in the gaming certificate. Students partner with local industry involved in game development, visual art, and educational gaming and solve real-world problems by working in a team comprised of students from the three tracks available within the certificate.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): BS Informatics or BIS (Computer Gaming) or Computer Gaming certificate; senior standing
CPI	460	Intelligent Interact Inst Sys	Intelligent interactive instructional systems serve as tutors, as learning companions or both. Covers their design, the technology that powers them, the learning theories that motivate them and results from experimental evaluations. Emphasizes intelligent tutoring systems, as they are a more mature technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CPI 460 or CSE 494 (Intelligent Instr Sys)
CPI	462	Dsgn for Lrning in Virtual Wrld	Focuses on issues of design for learning in virtual worlds by exploring: the history and evolution of virtual worlds, the theories behind the use of virtual worlds for learning, the design of curricula in virtual worlds, design guidelines for elements experienced in virtual worlds to support learning, design guidelines for learning quests and activities in virtual worlds. Also introduces virtual world building using Unity 3D.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3		Prerequisite(s): CPI 221, CSE 220, or CSE 240 with C or better; Credit is allowed for only CPI 494 (Design for Learning in Virtual Worlds) or CSE 494 (Design for Learning in Virtual Worlds) or CPI 462
CPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-12		
CPI	485	Informatics Capstone I	Team-based design of an informatics system; working with clients; development of requirements, use cases, class/object diagrams, and plans for quality assurance and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	3	L	Prerequisite(s): Informatics BS major; CPI 350 with C or better; CSE 463 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CPI 485 or CSE 423 or CSE 485
CPI	486	Informatics Capstone II	Implementation of the informatics system designed during CPI 485; work processes; keeping designs consistent with implementations; conducting QA and other evaluations; technical communication; teamwork.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	4	L	Prerequisite(s): Informatics BS major; CPI 485 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CPI 486 or CSE 423 or CSE 486
CPI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6		Prerequisite(s): Barrett Honors student

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CPI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		
CPI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-3		
CPI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computing and Informatics Program	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	101	Cross Sector Leadership	Prepares NGSC track members for success in their four-year journey while also sparking opportunities to develop as a leader throughout their Sun Devil careers. Provides a baseline for ethical decision making which is the cornerstone of effective leadership. This is accomplished through the lens of the public, private and nonprofit sectors. Also explores complex challenges we face and examples of successful cross-sector collaboration that have led to sustainable solutions. Additionally, students develop teamwork, time management, professionalism and respect for fellow NGSC team members.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1		Credit is allowed for only CPP 101 or CPP 194 (Next Generation Service Corps) or CPP 194 (Foundations of Cross Sector Leadership) OR Visiting University Student
CPP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-4		
CPP	201	NGSC Community Impact Lab	Behind every challenge is an opportunity to innovate. Course offers hands-on, service learning opportunities for students within the ASU Public Service Academy--Next Generation Service Corp (NGSC). Using a problem-solving method called human-centered design, student teams work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization that is based in research and empathy for the organization and their stakeholders. Beyond learning and applying the design thinking process, students also develop skills in team management, conflict management and reflection.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	2		Prerequisite(s): CPP 101; Credit is allowed for only CPP 201 or CPP 294 (NGSC Community Impact Lab) OR Visiting University Student
CPP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-4		
CPP	301	Cross-Sector Collaboration	Examines how public, private and nonprofit organizations seek to address social challenges and explores how the three sectors work together and in isolation to tackle social problems. Students learn about the motivation of employees in the public, private and nonprofit sectors and the ways in which organizational structure, environment and legal contexts differently constrain or facilitate action within and across these organizations. Explores effective strategies for collaboration among the public, private and nonprofit sectors and identifies organizational similarities and points of contrast that could enhance or create barriers to such collaboration.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 101; Pre- or corequisite(s): Public Service Academy student; minimum 45 hours; Credit is allowed for only CPP 301 or CPP 294 (Cross-Sector Collaboration)
CPP	350	Community Works	In the first part of the course, students apply the five concepts of interpersonal empathy while completing a 30-hour service project. After completing the service project, students apply the two concepts of social empathy to a social issue in their community. At the conclusion of the course, students know how interpersonal and social empathy can be developed as a skill to help their community within their public service career.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 350 or CPP 494 (Community Works) OR Visiting University Student
CPP	353	Community Impact Lab	Offers hands-on, service learning opportunities for upper-division students from the College of Public Service and Community Solutions. Using a problem-solving method called design thinking, student teams have the opportunity to work closely with a nonprofit organization, small business, government office or community organization to develop a solution to a critical issue within their organization.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CPP 353 or CPP 494 (Community Impact Lab)
CPP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-4		

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CPP	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student
CPP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-12		
CPP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-4		
CPP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
CPP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		
CPP	510	Hazards Governance	Examines how hazards are managed by both community- and national-level policymaking and administrative systems, with a particular focus on understanding how policies and management practices are related to risk reduction and resilience capacity promotion. Explores what governance means in practice and presents existing research, including policy reports, cases studies and quantitative analyses of community-level and national-level hazards management programs and related public policies--and how their integration is relevant to hazards governance. Emphasizes understanding the nature of public goods production processes, including how inter-sector integration (i.e., between, public, private and nonprofit organizations) and extant community vulnerability profiles matter to the specific risk reduction efforts, and what those same efforts yield in terms of aggregate community resilience outcomes.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 510 or CPP 591 (Hazards Governance)
CPP	511	Hazard Mitigation Planning	Examines policies, methodologies and guidance for state and local hazard mitigation planning.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CON 511 or CPP 511
CPP	512	Exercises for EMHS	Comprehensively explains the processes of emergency planning exercises in the domains of natural and technological hazards and homeland security, as well as other related domains such as public health or emergency medical services. Explores processes of emergency exercises within the Homeland Security Exercise & Evaluation Program (HSEEP) context and its standard guidelines that shape appropriate exercise practices.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	513	Pub Priv Partnerships for EMHS	Focuses on how public private partnerships (P3s) offer alternative mechanisms for supporting community emergency preparedness efforts, hazard and risk management practices, and community resilience promotion. The traditional form of a P3 model is typically a build-operate-maintain arrangement (with various permutations of those element combinations) around physical infrastructure. However, more complex public-private relationships related to emergency and disaster management issues, public health issues and other social welfare concerns have emerged over the past several decades. Investigating how these arrangements might affect emergency management, homeland security and the management of hazards and risk in general is critical to understanding how public sector operations are likely to function in the future in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	514	Intersector Coord for EMHS	Examines the nature of intersector and interagency coordination and collaboration efforts in the domain of emergency management and homeland security. Three core substantive area of focus: (1) covers the nature of inter-sector, inter-agency coordination and collaboration activities as a chief feature of the general emergency management function any community must address; (2) focuses on issues related to the required interaction between the local, county, state and federal government emergency management functions and the private sector; (3) focuses on the functional roles and the specific types of contributions made by public, private and nonprofit sector organizations in community preparedness for emergencies and disasters.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	520	Program Evaluation for EMHS	Examines core concepts and techniques of program evaluation and policy analysis and applies them to specific challenges in the domains of emergency management and homeland security. Develops knowledge and expertise in the practice of evaluating public sector programs, policies and other agency actions related to hazards issues-both natural and human-made. Develops students' knowledge, skill and ability in identifying appropriate research designs for particular evaluation and policy analysis problems; in managing data and focusing reports based on project objectives; and in appropriately characterizing and presenting empirical those data gathered for program evaluation and policy research projects. Provides an opportunity to learn about conducting evaluation and policy research in a way that is relevant to solving policy and management challenges germane to emergency management and homeland security agencies.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CRJ 511; Credit is allowed for only CPP 520 or CPP 591 (Program Evaluation in EMHS)
CPP	521	Finance & Management for EMHS	Focuses on the related topics of how state and local governments utilize use budgeting and financing techniques in the emergency services domain as well as how emergency/disaster services projects are managed. Specifically, the first part of the course covers budgeting and finance mechanisms and processes in the public sector generally and how those mechanisms and processes relate to emergency response, general hazards management and disaster recovery. The second part of the course covers core principles of project management and then applies those principles to process related to grant application and grant award management in the areas of preparedness, hazard mitigation and disaster recovery.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	523	Found Prog Eval I: Mult Reg	Regression serves as the foundation for modern quantitative program evaluation techniques. Regression analysis is not a single thing--it is a powerful set of tools used to examine relationships in data and test hypotheses concerning the significance of these relationships. Regression can be used to analyze observational data, in which case it can be used to identify important correlations that help us predict when events will occur together. In the program evaluation context we are specifically interested in causal analysis, which allows us to determine whether a management practice, a nonprofit or government program, or a specific public policy has a positive impact. When certain conditions are met we can use regression analysis to estimate the impact of a policy or program. This course builds a foundational understanding of the mechanics of multiple regression, the proper interpretation of regression models, and the circumstances in which we can use regression results for causal reasoning.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	524	Found Prog Eval II: Res Design	Covers important concepts in research design and common quasi-experimental tools for causal analysis.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523

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CPP	525	Found Prog Eval III: Adv Reg	Extends previous course by translating each specific form of the counterfactual--pre-post with comparisons, reflexive design, and the post-test only design--into specific regression models that leverage each counterfactual. Helps expand program evaluation toolkit by demonstrating how to estimate several common regression models that leverage unique data and counterfactual specifications and teaches how to estimate program effects using a given research design.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 524
CPP	526	Found Data Sci I: Data Prog R	Data is an essential ingredient of any program evaluation or performance management system. Organizations that want to embrace an evidence-based approach to management need to develop processes for gathering data; linking multiple datasets; running analysis; and sharing results with stakeholders through reports, dashboards or Web applications. The ability to collect, organize and analyze data is a desirable skill set for professional knowledge workers, high-level management and evaluators. Introduces the R data programming language, an open source platform that has become an industry standard because of its flexibility and power.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	527	Found Data Sci II: Data Wrang	The data preparation cycle: gather, clean, tidy and wrangle the data to produce a custom research database.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 526
CPP	528	Found Data Sci III: Proj Mgt	The main tools and practices of managing large or complex data projects, typically involving teams. Students learn about project management tools used by open source software developers, useful tools for creating client reports, important considerations.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 527
CPP	529	Community Analytics	Applies knowledge and tools from previous courses in program evaluation and data analytics in order to get practice building and analyzing custom research databases. Students are given a collection of raw data that needs to be linked together in order to conduct analysis, and guidance on how to implement a specific research question. Students merge the data, wrangle it into the proper format for analysis, apply the prescribed regression techniques, interpret results, and create a report with key findings.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): CPP 523; CPP 526
CPP	530	Ldrshp Innov Public Fire Svcs	Provides current and future fire service leaders with an understanding and the skills necessary to manage creativity and foster a culture of innovation in public fire and emergency services. The approach is to treat the fire officer as an entrepreneur who identifies ideas and opportunities, then builds a business case for innovation.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	537	Disasters Opportunity for Sust	Explores how disasters can give rise to sustainability transitions and sustainability solutions. Disasters are revealing crisis. As hazards roll into disasters they lay bare the underlying conditions of socio-ecological vulnerability and inequities that affect almost all aspects of daily life. They also affect the infrastructures and institutions supporting daily life. This realization stimulates improvisation and ideas for just, green, inclusive and resilient futures. Investigates case studies to reconstruct how people, affected by and surviving a disaster, advanced sustainability transitions and reduced disaster risk. Uses an interdisciplinary perspective to analyze these transitions, drawing on theories of change from sustainability transitions and transformation as well as disaster management research. Moreover, students ground the literature in concrete experiences as shared through guest speakers, professional experiences, documentaries and an applied project.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 537 or SOS 494 (Disasters as Opportunities for Change Towards Sust) or SOS 537 or SOS 598 (Disasters as Opportunities for Change Towards Sust)
CPP	540	Found Emergency Med Services	Examines the operational structure of emergency medical services in the United States, including the current organization, delivery and financing of these systems. Discusses strengths, weaknesses and future challenges of EMS with consideration for creating systems better integrated with the overall health care delivery system.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPP	550	Community Paramedicine: MIH	Explores mobile integrated health care and community paramedic programs and how health care professionals and community partners can work together to identify community health needs, foster partnerships and overcome hurdles in MIH/CP program development. Discusses examples of successful MIH/CP programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	560	Emerg Svcs Ops Analysis/Plng	Applies common data analysis tools and techniques appropriate to risk assessment, deployment analysis and performance measurement to evaluate an organization's abilities to respond to community risk.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	570	GIS for Hazards Analysis	Provides a basic level of familiarity with several aspects of geographic information science such as key geographic concepts and techniques related to the theory and application of geographic information systems (GIS). Covers topics such as data models, geographic coordinate system and map projections, data entry and editing, and various types of spatial analysis in both conceptual terms as well as practical application. Additionally, outlines a range of GIS-related activities in emergency management and homeland security. Exposes students to the current and potential roles of GIS in support of emergency management activities in each of the four stages of the emergency management cycle. Gives students a basic understanding of GIS and its possibilities along with the capabilities as they apply to emergency management and homeland security.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 570 or CPP 591 (GIS for Hazards Analysis)
CPP	575	U.S. Cyber & Info Sec Policy	Prepares students to understand and manage human and technical resources within the increasingly important cyber and information security domains. As high-profile data breaches and cyberattacks—that result in physical losses, disruptions and disasters—impose greater risks and costs on our public and private sector—as well as military and intelligence—networks, the policy and management aspects of these challenges have come to the fore. Compounding the technical and operational challenges arising from the protection of operating systems, networking and systems administration, managers and Chief Technology/Risk/Security/Data/Information Officers face a multidimensional set of political risks, including how to effectively manage data content and evaluation, information veracity and information sharing and distribution.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPP	576	Info Assurance Principles	The aim of this course is to provide insights into on modern cyber security threats and defensive controls and explore effective computer security and risk management strategies, Information Assurance (IA) practices and techniques. The course provides a graduate level foundation in IA for a diverse audience, from middle level managers to executives with non-technical and technical backgrounds and from variety of government, commercial and non-for-profit organisations. This course will explore concepts such as layered defense mechanisms, using different technologies and multiples thereof (true defense in depth), threat/risk identification and mitigation and incident response techniques. It will enable executive level managers to properly understand the real world challenges faced by their Cyber Security teams today. It will also assist in developing the frameworks, policies and the evidence-based decisions required to allow teams to protect their environments efficiently and to understand the resulting costs and benefits.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	577	Cybersec & Crit Infra Protect	Critical Infrastructure (CI) refers to the diverse, complex, inter-dependent delivery and support systems as well as the distributed networks for all large-scale services that are essential to a nation. These services include emergency response, law enforcement databases, supervisory control and data acquisition (SCADA) systems, power control networks, military support services, financial applications and mobile communications. Some national services are provided directly by government, but most are provided by commercial organisations and groups such as Internet service providers, airlines and banks. Systems that operate in national critical infrastructure run everything from electricity power plants to gas pipelines, hospitals and highways.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student

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CPP	578	Cyber Defense	Designed to provide students with knowledge on how to defend organisations and their systems. It is designed to provide a deep understanding of cyber defense within organisations and the necessary skills to examine the operational aspects of cyberspace, information assurance and cybersecurity. The emphasis of this course is to provide a contextual link between the management and governance of an organisation and its rapidly evolving cybersecurity and cyber-defense requirements. This course also provides insight into cyber governance in the Defense context, focusing on the management and acquisition of mission-critical systems and ensuring that these systems are resilient to internal faults and external cyber disruptions.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Cybersecurity Policy and Management) MA student
CPP	581	Bioterrorism & Health Intel	This course is for professionals involved in any aspect of bioterrorism preparedness and response, who wish to be intellectually challenged, to think outside the square, to gain insight into quantum changes in science which pose a biosecurity risk, to understand the different perspectives of sectors involved in response, and to gain new critical skills which can be applied in their professional practice.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	582	Infectious Disease Intel	This course aims to give you the skills to critically evaluate, analyse and interpret important information and issues in infectious diseases intelligence as it applies to human health.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	583	Hlth Aspcts Crises/Emerg/Dis	The aim of the course is to build learners' capacity to operate as public health professionals and managers within the context of local or international crises, emergencies and disasters. It will develop their knowledge of the healthcare aspects of these events, prepare them to assess and respond to such events from the perspective of healthcare services and providers, and assist them to develop the skills required to work within disaster and complex emergency settings.	N	LEC	Y	NSW	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-3		Prerequisite(s): Emergency Management and Homeland Security (Biosecurity and Threat Management) MA student
CPP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-12		
CPP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-12		
CPP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-12		
CPP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	Watts College of Public Service & Community Solut	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	568	Group Intervention	Provides advanced MC or PhD students with supervisory experience serving as Group Leaders or Co-Leaders to students currently enrolled in the prerequisite course. Time dedicated to group leadership or supervision accumulates as "Direct Contact" or "Group Supervision" hours and fulfills the "maladaptive/intervention" requirements or may be applied as an elective for MC students and PhD students. Students are selected for enrollment in this course with required instructor or departmental approval.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; CED 567; Credit is allowed for only CPY 568 or CPY 691 (Group Intervention)
CPY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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CPY	622	Child Counseling-Play Therapy	The use of play and expressive arts in counseling. Major areas of focus include: theoretical orientations to play therapy and child counseling, foundations of counseling, practice of play therapy and child counseling skills, and assessment/treatment planning. Integrates play media such as guided imagery, puppets and dolls, art, creative dramatics, music and movement, games, and sand play. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of play counseling. Includes both directive and nondirective play counseling experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or Counseling Psychology PhD student; Credit is allowed for only CPY 622 or CPY 691 (Child Counseling and Play Therapy)
CPY	623	Counseling At-Risk Youth	Examines the behaviors that place adolescents at risk for not achieving career goals and interventions to address these behaviors.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	635	Professional Development	A series of presentations designed to expose beginning doctoral students to the multidimensional facets and competencies for being a counseling psychologist.	N	SEM	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Counseling Psychology PhD student; Credit is allowed for only CPY 635 or CPY 691 (Professional Development)
CPY	644	Psychology of Careers	Advanced career counseling, including theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate OR undergraduate postbaccalaureate student
CPY	645	Professional Issues and Ethics	Ethical, legal, and professional issues of concern to practitioners and researchers functioning in a variety of settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only CED 645 or CPY 645
CPY	650	Counseling Latinos	Survey course addressing mental health concerns and perspectives for individuals and families of Latino, Spanish-speaking origin.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	651	Personality Assessment	Training in the use of major objective personality instruments to assess psychological symptoms; emphasizes MMPI-2 and MCMI-III.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: CED 523
CPY	652	Indiv Intel Assessment	Examines the nature of human intellectual/cognitive abilities, their standardized measurement, and related issues in interpretation and practice. Provides preliminary training and experience in the administration and interpretation of two of the most widely used tests in this area: the Wechsler Adult Intelligence Scale, 4th ed. & the Wechsler Intelligence Scale for Children, 5th ed. Introduces other instruments at a topical level. Emphasizes theoretical foundations, practice skills, cultural considerations and ethical issues in intellectual/cognitive assessment. Operates under the broad principles of a cooperative learning approach. By researching and presenting on key course concepts, students practice incorporating a scholarly and empirical basis into their clinical work to develop specialized expertise in clinical assessment. Class format includes instructor- and student-led didactics, discussion and practice labs.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 652 or CPY 691 (Individual Intellect Assessment)
CPY	653	Neuropsychology	Assumes students have knowledge of basic topics in physiological psychology and/or in brain and behavior-type courses. Concentrates on human neuropsychology; the main topics are related to functional brain organization and hemispheric specialization, with a particular emphasis on functional assessment. Includes several other topics related to late-breaking empirical developments in the field. Read and discuss articles and studies, employing a large variety of methodologies, ranging from the 1950s to the latest publications, with both normal and pathological subject populations. Much of the course is spent discussing brain assessment techniques to study cognitive function and dysfunction. Emphasizes commonly used approaches in the assessment and measurement of human behavior and how the human brain is responsible for cognition, language, memory, spatial processing, emotion and personality.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 653 or CPY 691 (Neuropsychology)

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CPY	654	Biobases of Behavior	Fulfills the APA requirement for a three-semester-hour course devoted to the broad and general biological bases that underlie behavior, and surveys a variety of fundamental physiological principles. Designed for students enrolled in an APA-accredited professional psychology training program; it does not focus on application of physiological principles to psychological practice. Capitalizes on most students' prior familiarity with psychopathology to help enable acquisition of general information about important brain structures and functions. Includes information about basic nervous system-related biochemistry, cellular structure and physiology, and anatomy and physiology. Students participate in classroom problem solving activities during which an array of principles is covered based on reading assignments. Challenges students to consider the role of biological, evolutionary and genetic factors in the expression of an array of typical and atypical behavior.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Master of Counseling or Counseling Psychology PhD student; Credit is allowed for only CPY 654 or CPY 691 (Biobases of Behavior)
CPY	660	Prevention and Consultation	Community focus with emphasis on outreach, prevention, psychoeducation, consulting, and advocacy from a systematic multicultural perspective.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Counseling MC or MED student OR Counseling Psychology PhD student; Credit is allowed for only CED 527 or CPY 660
CPY	668	Grant Writing	Develops successful proposals for educational research projects. Students gain experience writing for federal agencies, reviewing, and being evaluated on grant proposals.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	670	Individual Differences	Focuses on definitions and assessment of ways humans vary on psychological constructs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	671	Multicultural Counseling	Provides awareness of the influence of sociocultural variables on human development and explores implications for counseling minority populations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only CED 671 or CPY 671
CPY	673	Trauma in Counseling	Addresses the impact of crisis, disasters, sexual assault and other trauma-causing events on individuals and communities, as well as the treatment of trauma-related disorders. Examines trauma through the impact on the brain regions, impact on memory, variations of emotional regulation and somatic responses. Also addresses operations of emergency management systems within clinical mental health agencies and in the community. Also gives attention to vicarious trauma and caring for the caregiver. Demonstrations and experiential activities are a primary method of teaching and learning the theory and practice of working with trauma. Includes both directive and nondirective experiences.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPY 673 or CPY 691 (Working with Trauma in Counseling)
CPY	674	Counseling Women	Explores women's development and its implications for counseling. Sexism in mental health, sex differences in diagnosis and psychopathology, and women's particular treatment needs.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	675	Health and Wellness Counseling	Theory, research, and practice in health and wellness counseling.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	676	Social Bases of Behavior	In-depth examination of contemporary research and theory in selected areas of social psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	677	Advanced Counseling	Advanced topics in counseling theory, research, and practice.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
CPY	678	Supervision Theory	Models of therapist development and clinical supervision.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	679	History/Systems of Psychology	Examines the development and differentiation of the discipline of psychology from its origins in philosophy to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate

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CPY	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	694	Substance Use, Disorders	Develops knowledge and skills for conducting psychotherapeutic and educational interventions to address substance use disorders and associated concerns.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	701	Science/Practice Counsel Psych	Directed experiences involving the integration of theory, research, and practice in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	702	Research Methods in Counseling	Applies experimental and/or quasi-experimental methods to theory construction and treatment evaluation in counseling psychology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CPY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CPY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post-Baccalaureate Undergraduate
CRD	100	Intro to Community Development	Focuses on communities and draws on an interdisciplinary lens to orient students to the foundations of community development. Presents a holistic approach to communities as complex systems with the goal of addressing ecological, economic, social, cultural and political dimensions that play a vital role in decision making. Provides effective tools with which to engage various stakeholders (e.g., government, private, nonprofit, community). Framed within the theoretical context of social justice and community well-being.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		

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CRD	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		Prerequisite(s): maximum 25 hours; Credit is allowed for only CRD 191, PRM 191 or TDM 191
CRD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
CRD	200	Foundations Community Devel	Focuses on development within the context of communities and draws on a holistic approach that encompasses social, economic and ecological dimensions of development. Orients students to municipal, state, national and international examples of development. Critical analyses of the application of development-related practices and policies implemented locally and internationally equip students with key assessment tools for complex systems. Presentations from key stakeholders grant students with first-hand information regarding issues, challenges and solutions that have been applied to various community development contexts.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 100
CRD	210	Community Services&Professions	Allows students to develop an educational and career plan to use throughout their programs culminating in an ePortfolio.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 200, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235
CRD	300	Rsrch Methods & Applied Skills	Orients students to the main methodological approaches utilized within the practice and study of community development. Discussion on research design and data collection complements the concepts employed in quantitative and qualitative approaches to development. Presents computer software applications. The goal is not mastery of research methods, but ability to critically consume research outputs as well as to design research-related documents.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200
CRD	301	Sustainable Communities	Analyzes community as concept and as an organizing system for promoting sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre- or corequisite(s): CRD 210, NLM 160, or PRM 120 with C or better if completed OR Visiting University Student
CRD	302	Inclusive Community Developmnt	Examines the characteristics of diverse populations across the lifespan to effectively develop inclusive community programs and services.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	SB & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Pre- or corequisite(s): CRD 210 or PRM 210 with C or better if completed OR Visiting University Student
CRD	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CRD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
CRD	400	Capstone: Ldrshp, App Skills	Integrates and synthesizes knowledge disseminated throughout the entire community development degree program. Students purposefully revisit applications and principles of community development as well as community engagement skills and research tools necessary in collaborating with various groups of stakeholders. Introduces and applies concepts of conduct and ethics to discussions of careers in community development. Students apply acquired knowledge through culminating groups projects and group presentations.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 100; CRD 200; CRD 300

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CRD	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student
CRD	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CRD	403	Ldrship & Prof Devlpmt	Examines leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s) with C or better: CRD 210, NLM 210, PRM 210, or TDM 210; CRD 301, CRD 302, NLM 301, PRM 301, or TDM 301; senior standing; min 2.50 GPA; Credit is allowed for only CRD 403 or NLM 403 or PRM 403 or TDM 403 OR Visiting University Student
CRD	435	Service Learning/Community Dev	Establishes a "hands-on" service learning application with a selected agency related to student's career interest. Entails strong examination of service-based learning literature, community development strategies and community engagement applied project.	N	REC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
CRD	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; Credit is allowed for only CRD 463 or CSM 463 or NLM 463 or PRM 463 or TDM 463
CRD	471	Interprof Ed & Comm Hlth	Community-engaged service learning exposes students to community health and interprofessional education through the delivery of team-based services with vulnerable populations. Students build on their professional practice skills as they develop interprofessional competencies.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prereq(s): ENG 101, 105, or 107 w/ C or btr; min 15 hrs; Crdt for only CRD 471 or HCR 471 or CRD 494 (IntroEdu & ComHlth), CRD 598 (IntroEdu & ComHlth), HCR 494 (IntroEdu & ComHlth), or PRM 494 (IntroEdu & ComHlth) OR Visiting University Student
CRD	472	Interprof Ed & Complex Hlth	Complex health community-based experiential learning with immersive "real-world" learning opportunities. Students dedicate hours at pre-approved placement sites serving a community; apply new (and advance prior) complex health knowledge and skills; benefit from an expanded scope of supervised practice experience while providing targeted complex health interventions that address health and health care disparity needs, improve care quality, and reduce care costs for individuals, families, communities, and/or populations with complex health needs. Students practice values and ethics, communication, roles and responsibilities, teams and teamwork, and leadership competencies essential for interprofessional collaborative practice and team-based care. Online and in-person collaborative learning includes: seminars, course readings, discussions, and reflection assignments to facilitate critical thinking and a deeper understanding of the delivery of complex health interprofessional team-based care in the community.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prereqs with C or better: CRD 471, HCR 471, or CRD/HCR 494 (Interprof Ed & Comm Hlth) OR Hlth Care Coord major; HCR 210; HCR 220; HCR 230; Credit for only CRD 472 or HCR 472 or CRD/HCR 494/598 (Interprof Ed & Complex Hlth) OR Visiting University Student
CRD	473	Interprof Ed & Com Sys Hlth	Community-engaged experiential learning integrates students into comprehensive systems health and interprofessional education through the creation of team-based community impact projects with vulnerable populations. Students refine their professional practice and leadership skills as they integrate interprofessional competencies.	N	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		Prereqs w/min C: CRD 471, CRD 472, HCR 471, HCR 472 or CRD/HCR494 (Interpf Ed&Comm Hlth or Interpf Ed&Cmplx Hlth) OR Hlth Care Coord, Comm Hlth or Integrative Hlth BS; HCR210; HCR220; HCR230; Credit for CRD 473 or HCR 473 OR Visiting University Student
CRD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours
CRD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student

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CRD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
CRD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
CRD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		
CRD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	502	Statistical and Data Analysis	Introduces descriptive and inferential methods used in community development, with an emphasis on nonprofit, tourism, and recreation sciences. Students gain experience using statistical software.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
CRD	530	Community Services Management	Examines and applies administrative/management analysis of public and nonprofit sector applications.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	552	Critical Issues	Examines critical research issues in the leisure, recreation and tourism fields.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	555	Theoretical Persp in Comm Dev	Reviews theoretical and empirical literature in community development with an emphasis on nonprofit, tourism, and recreation sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
CRD	563	Advocacy in Rec Therapy	Explores trends and issues facing therapeutic recreation professionals and advocacy practices integral to therapeutic recreation service delivery. Investigates a variety of topics; community-engaged experiences facilitate the development of competencies needed to effectively lead therapeutic recreation programs.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 563 or PRM 440
CRD	569	Adv Tourism&Recreation Studies	Advanced study of tourism with an emphasis on relevant practices, theories, and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	570	Foundations of Community Dev	Compare and contrast leading theories of community development in the historical context of the United States.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	571	Community Development Process	Develops an understanding of the overall process of pursuing intentional community change and builds education, mobilization, and facilitation skills for engaging in the community development process.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 572 or NLM 572
CRD	573	Local and Regional Development	Builds core knowledge and analytical skills for the methods and sustainable outcomes of local and regional environmental and economic development.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	574	Applied Research Skills	Develops skills in common qualitative and quantitative data collection and analysis methods used by community development practitioners.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	577	Community Building Practice	Builds core knowledge and analytical skills for the ethics and practice of building equitable communities, focusing on the development of self-efficacy, agency and solidarity.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571
CRD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		

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CRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		
CRD	596	Community Development Capstone	Capstone application of core values, knowledge and skills in an applied project. The final product is a deliverable to a community partner, and serves as a culminating experience for the Master of Professional Studies in Community Development Practice.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 570; CRD 571; CRD 572; CRD 573; CRD 574
CRD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
CRD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CRD	610	Sustainable Communities	Systems thinking for promoting sustainability. Considers issues at different scales ranging from urban to rural, local to global, historical to contemporary. Critically examines the role of public, private and nonprofit institutions in promoting quality of life.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	620	Community Research Methods	Introduces community research methods, with emphasis on methodological questions and techniques relevant to contemporary community-based research.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	640	Seminar I	A seminar designed to explore issues related to advancing a career as a researcher in the fields associated with community resources and development (i.e., non]profit, recreation and parks, tourism). Critical to this study is an understanding of the conduct of high quality research, an understanding of issues that arise in professional settings (e.g., expediency vs. effectiveness), and ethical principles and processes that undergird research.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development
CRD	650	Research Seminar II	Helps prepare doctoral students to become productive and successful social scientists in community resources and development. Covers a wide range of topics under the broader conceptual umbrella of research, teaching, and service.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisite: Doctoral student in Community Resources and Development
CRD	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CRD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	100	Intro to Criminal Justice	History and current practice of the criminal justice system. Roles of law enforcement agencies, courts and correctional agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	SB	

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CRJ	201	Crime Control Policies	Dimensions and causes of crime. Criminal justice system responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	203	Courts and Sentencing	Structure and operation of criminal court system.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	204	Juvenile Justice	History and development of the juvenile court and the juvenile justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	210	Intro to Crim Investigations	Studies the basic principles of criminal investigation including the analysis of investigative techniques, criminal patterns and modus operandi, interviewing and interrogation strategies, collection and management of evidence, surveillance, and crime scene investigation. Covers theories, philosophies and concepts related to suppression of crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	211	Documenting the Crime Scene	Practical approach to evidence identification; documentation of the location of evidence; crime scene sketching; and the collection and handling of evidence from the crime scene, to the crime laboratory, and to presentation in court. Includes lab exercises designed to reinforce important investigative skills.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better OR Visiting University Student
CRJ	230	Introduction to Policing	History of police. Contemporary police work. Problems in policing.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	240	Introduction to Corrections	Structure and operation of corrections system.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	260	Intro Substantive Criminal Law	In-depth study of the historical development, foundational principles and public policy implications of criminal law, focusing on theories of criminal liability and the elements of select crimes against the person.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		
CRJ	270	Community Justice	Collaborative and evidence-based approach to reducing crime, incorporating offenders, victims, the community and criminal justice agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	SB	
CRJ	284	Professional Growth in CJ	Targeted field practice with criminal justice agencies. Prerequisite for internship.	N	LEC	N	YGB	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better
CRJ	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-4		
CRJ	300	Oral & Written Com for CCJ	Develops critical oral and written communication skills with emphasis on locating, analyzing, properly citing, and persuasively using primary and secondary sources in criminology and criminal justice.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better
CRJ	302	Research Methods	Validity and reliability of research designs and data collection.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	L	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; ENG 101, 105, or 107 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	303	Statistical Analysis	Fundamentals and application of descriptive and inferential statistics.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	CS	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; MAT 117, 119, 142, 170, 210, or 270 with C or better OR Visiting University Student
CRJ	305	Gender, Crime & Criminal Justice	Women as offenders, victims and professionals in the criminal justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	306	Race, Ethnicity, Crime	Minority issues in the criminal justice system.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	C	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR Visiting University Student
CRJ	309	Criminology	Theoretical explanations for criminal behavior.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	SB	Prereq(s) w/ C or better; Crim & Crim Just or Pub Serv & Pub Policy (Crim) major; CRJ 100; CRJ 201; min 56 hrs OR Psych (Forensic Psych) BA or BS major; Credit allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308) OR Visiting University Student

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CRJ	315	Police Organization and Mgmt	Structure, processes and behavior of police organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100, JUS 105, or JUS 305 with C or better; CRJ 230 with C or better
CRJ	317	Inside-Out Prison Excg Program	Pairs university students and correctional students inside a prison to examine the criminal justice system through a combination of theoretical knowledge and practical experience, paying special attention to race, gender, socioeconomic status, age, and ethnicity.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRJ 317 or CRJ 494 (Inside-Out Prison Exchange)
CRJ	321	Evidence: Imperatives of Proof	Problems and means of establishing identity and fact in relation to arrest, detention, adjudication, sentencing, and correctional case management.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	350	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	SB	Prerequisite(s): CRJ 100 with C or better; CRJ 201 with C or better; junior or senior standing OR General Studies BA major OR Interdisciplinary Studies BIS major OR Visiting University Student
CRJ	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-4		
CRJ	403	Victims and the Criminal Jus	Victimization theories. Nature and extent of victimization. Interactions among victims, the criminal justice system and society. Victim rights and services.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Crimnlgly & Crim Just mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Serv & Pub Pol (Crimnlgly or Emer Mgt & Hmnd Sec or Law & Pol) mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	404	Juvenile Delinquency	Causes, correlations and strategies to reduce juvenile delinquency.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	405	Neighborhoods and Crime	Variation in crime across neighborhoods from ecology of crime and urban sociology perspectives. Influence of social institutions on community crime patterns.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301 with C or better; PAF 302 with C or better
CRJ	406	Sex Crimes	Prevalence, nature and etiology of sex crimes. Response of criminal justice system to victims and perpetrators of sex crimes.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) w/C or btr: Crim&Crim Just BS: CRJ 302; CRJ 303 OR Lw&Hmn Bhv crt: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Psy(ForPsy)BA/BS: PSY 230; PSY 290 OR PubSer&PubPol(Crim, Emer Mgt&Hm Sec, or Lw&Pol)BS: PAF 301; PAF 302 OR Visiting University Student
CRJ	407	Police Use of Force	Explores the use of force options available to police officers. After analyzing the legal foundations of use of force, examines the community context. Also studies future technology and examines current research on the topic. Uses case studies to demonstrate the historical and current issues in police use of force.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s): w/ C or better: Crim & Crim Just mjr; CRJ 302; CRJ 303 OR Pub Serv & Pub Pol (Crimnlgly, Emerg Mgmt & Hmnd Sec, or Law & Pol) mjr; PAF 301; PAF 302; Credit for only CRJ 407 or CRJ 494 (Police Use of Force or Force in Law Enfrmnt)
CRJ	408	Drugs and Crime	Patterns of illegal drug use. Problems, practices and policies associated with drugs, crime and drug policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student

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CRJ	409	Police Accountability	Command and control systems. Managing police culture. Community policing and accountability to the community. Police training.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 302 with C or better; CRJ 303 with C or better OR Public Service & Public Policy (Criminology, Emer Mgt & Homeland Security, or Law & Policy) BS major; PAF 301 with C or better; PAF 302 with C or better OR Visiting University Student
CRJ	410	Crim Proc I: Law of Investigat	In-depth exploration of U.S. Constitutional law governing criminal investigative procedures.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereqs w/min C: Crimnlgy&Crim Just BS, Law&Hmn Behav cert, Legal Issues cert; CRJ 302; CRJ 303 OR Law&Hmn Behav cert; PSY 230; PSY 290 OR Pub Serv&Pub Pol (Crimnlgy, Emer Mgt & Hmind Sec, or Law & Pol) BS; PAF 301; PAF 302 OR Visiting University Student
CRJ	411	Legal Issues in Corrections	Explores the constitutional and statutory law concerning prisoners in the United States. Places special emphasis on the First, Fourth, Fifth, Sixth, Eighth and Fourteenth Amendment rights of persons under the jurisdiction of correctional agencies, as well as their rights under relevant statutes and case law, including those affecting habeas corpus right.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Correctional Studies cert; CRJ 100 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302
CRJ	412	International Terrorism	Structural, organizational, political and legal characteristics of international terrorism.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereqs w/C or better: Crimnlgy & Crim Just major; CRJ 302; CRJ 303 OR Publ Serv & Publ Pol (Crimnlgy or Emer Mgt & Homeland Sec or Law & Pol) major; PAF 301; PAF 302; Credit allowed for CRJ 412 or CRJ 494 (Intl Terrorism) OR Visiting University Student
CRJ	414	Advanced Criminological Theory	Critical assessment of criminological thought using original readings.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology & Crim Jus major; CRJ 302 w/ C or better; CRJ 303 with a C or better OR Law & Hmn Behav Cert Students: CRJ 100 with a C or better; min junior standing; Credit is allowed for only CRJ 309 (or CRJ 225) or CRJ 414 (or CRJ 308)
CRJ	416	Crim Procedure II:Adjudication	In-depth study of the constitutional rights attendant to the processing and adjudication of criminal cases in court, from initial court appearances through appeals and collateral attacks.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 203; CRJ 410 OR Visiting University Student
CRJ	417	Cyber Terrorism	Terrorism perpetuated online. Terrorism and technology.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	419	Domestic Terrorism	Evolution of domestic terrorism in the United States. History and future of domestic security. Public policy responses. Internal and external political implications.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	422	Violence in America	Theories, patterns, prevention and policy responses to violence in the United States. Varieties of violence including domestic, gang-related, hate crimes, school violence and sex crimes.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student

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CRJ	423	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
CRJ	425	Life-Course Criminology	Theories, methods and controversies of the life-course perspective as it applies to crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or btr: Crim&Crim Just BS mjr; min jr standing; CRJ 302; CRJ 303 OR Juvenile Just or Law & Human Behavior cert stud; min jr standing; CRJ 100; Credit is allowed for only CRJ 425 or CRJ 494 (Life-Course Crim) OR Visiting University Student
CRJ	427	Crime and Media	Examines the relationships among crime and discourse, media representations of crime and criminals, and the structural deficiencies in society that perpetuate relations of domination and oppression based on class, race, gender and sexuality.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): minimum junior standing; minimum 2.00 GPA; Credit is allowed for only COM 427 or CRJ 427 or COM 494 (Crime, Communication and Media) or CMN 598 (Crime, Communication and Media) OR Visiting University Student
CRJ	433	Death Investigations	Medico-legal investigation of death via postmortem examinations. Identification, thanatology, thanato-etiology of unexpected natural deaths, accidental deaths, suicides and homicides. Forensic examination of living people following sexual assault, traffic offenses, child abuse and drug crimes.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology, Emergency Management and Homeland Security, or Law and Policy) BS major; PAF 301; PAF 302
CRJ	434	Drugs of Abuse	Pharmacological and toxicological characteristics of commonly abused drugs such as alcohol, barbiturates, amphetamines, narcotics, stimulants and hallucinogens. Forensic toxicology. Acute and long-term effects of drug abuse.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s): w/ min C: Crimngly & Crim Just mjr: CRJ 302; CRJ 303 OR Lw & Hman Bhvior crt: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pblc Serv & Pblc Pol (Crimngly or Emerg Mgt & Hmlnd Sec or Lw & Pol) mjr: PAF 301; PAF 302 OR Visiting University Student
CRJ	435	Crime & Forensic Mental Health	Clinical assessment of people under court jurisdiction. Topics include psychological paradigms, nomenclature of mental disorders, forensic clinical assessment, mental disorders and crime, legal standards governing mentally disordered criminal offenders.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	SB	Prereq(s) w/C or better: Crimngly&Crim Just BS; CRJ 302; CRJ 303 OR Law&Hmn Behv cert: CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Psych (Forens Psych) BA/BS: PSY 230; PSY 290 OR Pub Serv&Pub Pol (Crimngly, Emer Mgt&Hmlnd Sec, or Law&Pol) BS: PAF 301; PAF 302
CRJ	443	Community Corrections	Probation and parole. Types of community corrections programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law and Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	444	Institutional Corrections	Provides an overview of secure correctional facilities in the U.S. with a focus on prisons and jails.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology and Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service and Public Policy (Criminology or Emergency Management and Homeland Security or Law and Policy) BS major; PAF 301; PAF 302
CRJ	445	Engaging Correctional Pops	Provides an overview to risk and needs assessment with correctional populations, with a particular focus on introducing tools to engage with and rehabilitate individuals.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student

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CRJ	450	Crime Analysis	Tactical, strategic and administrative aspects of crime analysis and crime mapping as practiced in everyday policing. Environmental criminology.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prereq(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology or Emergency Management & Homeland Security or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	455	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism, and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 455 or CRJ 555 or CRJ 494 (Police and Int'l Terrorism-Israel)
CRJ	456	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 201 with C or better; minimum junior standing; Credit is allowed for only CRJ 456 or CRJ 556 or CRJ 494 (Etiology of Martyrdom)
CRJ	460	Adv Substantive Criminal Law	In-depth study of the historical development, foundational principles, and public policy implications of criminal law focusing on parties to crime, inchoate liability, select crimes against the person; crimes against property, public order and the state; and defenses to crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 260 OR Visiting University Student
CRJ	461	Domestic Violence	Legal, historical, theoretical, and treatment aspects of domestic violence, including child abuse, woman battering, incest, and marital rape.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	462	Gangs	History and development of gangs. Criminal justice system responses. Nature of gangs and gang members.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) with C or better: Criminology & Criminal Justice major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) major; PAF 301; PAF 302 OR Visiting University Student
CRJ	463	White Collar Crime	Business, professional and official lawbreaking including consumer fraud, securities violations, unethical behavior and political corruption.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	464	Organized Crime	Nature and history of organized crime. Theories of containment. Criminal justice agency responses.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s) w/ C or better: Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Public Service & Public Policy (Criminology, Emergency Management & Homeland Security, or Law & Policy) BS major; PAF 301; PAF 302 OR Visiting University Student
CRJ	470	Discretionary Justice	Use and abuse of discretion in the criminal justice system. Theoretical and empirical links between discretion and discrimination based on race, ethnicity and gender.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3	L or SB	Prerequisite(s) w/ C or better: Criminology & Crim Just major; CRJ 302; CRJ 303; ENG 101, 105, 107 OR Public Serv & Pub Policy (Criminology, Emerg Mgmt & Homeland Sec or Law & Pol) major; ENG 101, 105, 107; PAF 301; PAF 302 OR Visiting University Student
CRJ	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
CRJ	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): minimum 45 hours

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CRJ	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-6		Prerequisite(s) with C or better: Barrett Honors stdnt; Criminology & Criminal Justice BS major; CRJ 302; CRJ 303 OR Barrett Honors stdnt; Public Serv & Public Policy (Criminology, Emrgncy Mgt & Homeland Sec, or Law & Policy) BS major; PAF 301; PAF 302
CRJ	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-6	L	Prereq(s) w/ C or btr: Barrett Hons stdnt; Crimlgy&Crim Just BS mjr; ENG 101, 105, or 107; CRJ 302; CRJ 303 OR Barrett Hons stdnt; Pub Serv&Pub Policy (Criminlgy, Emrgncy Mgt&Homeland Sec, or Law & Policy) BS mjr; ENG 101, 105, or 107; PAF 301; PAF 302
CRJ	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-4		Prereqs w/ C or better: Crim & Crim Just BS mjr; CRJ 302; CRJ 303 OR Law & Hmn Behav cert; CRJ 302; CRJ 303 or PSY 230; PSY 290 OR Pub Srv & Pub Pol (Crimlgy, Emrgncy Mgt & Homeland Sec, or Law & Pol) BS mjr; PAF 301; PAF 302 OR Visiting University Student
CRJ	496	Directed Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to contribute to a specific project such as a report or publication. Tasks may include data collection and coding, data analysis, literature reviews and producing research reports. Neither a substitute for a catalog course nor a means of taking a catalog course on an individual basis. Requires application well in advance of regular registration with the student's advisor, the advisor's signature, and approval by both the faculty member with whom the student will work and the director of the school offering the course.	N	RSC	Y	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-3		Prerequisite(s) with C or better: Criminology & Criminal Justice BS major; CRJ 302; minimum junior standing OR Public Service & Public Policy (Criminology, Emergency Mgmt & Homeland Security, or Law & Policy) BS major; PAF 302; minimum junior standing
CRJ	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-3		Prerequisite(s): minimum 45 hours
CRJ	501	Seminar in Criminal Justice	Overview of the American criminal justice system, with emphasis on policy issues in police, courts, sentencing, corrections.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	502	Seminar in Criminology	Theory and research on the nature, causes, and prediction of criminal careers and events.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA major OR Criminology and Criminal Justice MS or PhD major OR Forensic Psychology MS OR Law and Psychology PhD major
CRJ	503	Research Methods	Introduces data analysis; overview of research methods used in social science research, including experimental design, survey research, field research, and evaluation research.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	504	Statistical Tools/Criminal Jus	Focuses on essential statistical analysis that can be used in criminal justice and related agencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	505	Thry & Prac Criminal Justice	Capstone course for School of Criminology and Criminal Justice master's students. Students complete a project that requires the application of knowledge from program coursework.	N	RSC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student; CRJ 501; CRJ 502; CRJ 510; CRJ 511

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CRJ	506	Seminar in Crime Analysis	Examines theory and practice of crime analysis in the field of criminal justice. Focuses on data collection, management and dissemination methods; related technology and software; and analytical techniques to examine crime trends, the spatial distribution of crime, and temporal trends in crime for the purpose of understanding and responding to crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	507	Social Network Analysis	Examines the theory and practice of social network analysis in the field of criminal justice. Focuses on the major theoretical assumptions of social network analysis, how to collect social network data, how to use social network analysis software, and how to analyze and interpret social network data for the purpose of understanding and responding to crime.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	508	Adv Seminar in Crime Analysis	Examines advanced topics in the practice of crime analysis in the field of criminal justice. Students learn the terminology, principles and techniques crime analysts use in everyday practice. Provides an exploration of the various approaches to analyzing and reducing crime as well as the theories that inform those approaches. Examines situational analysis and its approach to managing the occurrence of crime; also explores crime prevention through community-based approaches to crime prevention.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): CRJ 506
CRJ	509	Data Management	Core concepts and practices used for the organization and management of data.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Crime Analysis graduate certificate, Crime Analysis MS, Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student; CRJ 511
CRJ	510	CJ Planning&Program Evaluation	Examines the application of alternative models of strategic planning to the criminal justice system. Covers methods of evaluating criminal justice policies and practices.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	511	Applied Data Analysis in Crim	Examines a variety of tools used in the analysis of criminal justice data, including GIS mapping.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Emergency Management and Homeland Security MA student (all concentrations) OR Law and Psychology PhD student
CRJ	512	Seminar in Policing	Graduate-level review of policing and police organizations. Seminar examines research on police strategies and practices designed to address crime.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	513	Seminar in Courts & Sentencing	Overview of the nature, proposed principles, and theoretical doctrine of the courts and sentencing policies in criminal justice.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	514	Seminar in Corrections	Theory, research, and policy issues regarding community-based and institutional correction programs.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	515	Seminar in Women and Crime	Introduces students to issues regarding women and the criminal justice system, focusing on their roles as offenders, victims and professionals.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student

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CRJ	516	Seminar in Crim Jus Org & Mgmt	How external and internal variables shape criminal justice systems' organizational behaviors. Emphasizes strategic hiring, professional socialization, effective leadership, progressive discipline, interagency collaboration and organizational change.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	517	Juvenile Delinquency & Justice	Examines patterns and correlates of delinquency within the context of theories of delinquency. Reviews the response of the juvenile justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	518	Race/Ethnicity, Crime & Justice	Theoretical perspectives and research on the overrepresentation of racial minorities as victims, offenders, and defendants in the criminal justice system.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	519	Seminar on Victimization	Examines theory and research concerning victimization and consequences for victims, society, and the justice system. Also examines effective responses to victims' post-crime needs.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	520	Seminar on Violent Crime	Examines patterns and correlates of violent crime, as well as prevention strategies and policy implications.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	521	Topics in Psych Criminology	Topical courses relating to the intersection of various specializations in psychology with criminology and criminal justice.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	522	Seminar on Gangs and Crime	Theoretical perspectives and research on gangs and crime, and on the role of the community and the criminal justice system in causes and control.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	523	Seminar in Network Criminology	Explores the theoretical foundations for applying the concepts and methods of network science to problems in criminology and criminal justice.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, Forensic Psychology MS or Law and Psychology PhD student
CRJ	524	Theories of Punishment	Examines the fundamental philosophical principles of justice and punishment. Includes a comparative and historical perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	525	Life-Course Criminology	Provides an intensive examination of life-course explanations of crime, the life-course perspective and a theoretical orientation, and research methods used in life-course research.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	527	Police Accountability	Examines the great authority of police, the various and most common ways that police abuse that authority, the consequences of those abuses, and accountability mechanisms that can prevent those abuses from occurring.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	529	Community Corrections	Provides a review of theory, research and policy focusing primarily on correctional strategies and programs that take place within the community setting, as well as the function of community corrections within the larger correctional system. Gives particular attention to the purpose and goals of community-based corrections; the historical development of probation and parole practices; and contemporary community corrections programs and strategies such as evidence-based practices, risk assessment, offender reentry, sex offender management, diversion, restitution, community service programs and other emerging alternatives to traditional incarceration.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student

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CRJ	530	Seminar in Forensics	Explores recent and sometimes controversial developments in forensic science. Includes topics such as quality assurance, the CSI effect and the National Academy of Sciences' report entitled "Strengthening Forensic Science in the United States: A Path Forward."	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	531	Crime Mapping	Examines the applied research methodology and conceptual framework used to conduct spatial analysis within the crime analysis profession.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	532	Sex Crimes	Not only discusses the distinctions among types of offenders, but also applies theory, analyzes public policy, examines the effect of sex offenses on victims, and discusses how we've legislated sexual behavior over human history.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	533	Seminar in White Collar Crime	Provides a general overview of white collar crimes including forms, contexts and response by the criminal justice system toward offenders and victims. Also addresses theoretical perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student; Credit is allowed for only CRJ 533 or CRJ 598 (Seminar in White-Collar Crime)
CRJ	535	Crime & Forensic Mental Health	This interdisciplinary course, which draws from the fields of criminology, psychology, sociology and law, focuses on the clinical assessment of people under the jurisdiction of a court of law.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS, Criminology and Criminal Justice PhD, Forensic Psychology MS, or Law and Psychology PhD student; Credit is allowed for only CRJ 535 or CRJ 598 (Crime and Forensic Mental Health)
CRJ	537	Criminal Procedure	Explores the criminal procedures mandated by the U.S. Constitution as applied to criminal investigations with emphases on pretrial rights under the Fourth, Fifth and Sixth Amendments.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Science PSM student OR Law and Psychology PhD student
CRJ	538	Criminal Law & Social Control	Examines practical, legal and constitutional limitations of criminal laws and procedures as means of securing social order. Focuses on the formal social control of justice system actors and the limits placed on government when seeking to control crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Forensic Psychology MS student OR Law and Psychology PhD student
CRJ	539	Topics in Law, Crime & Justice	Topical courses relating to the intersection of law with criminology, criminal justice, public policy and the social sciences.	N	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	540	Qualitative Methods	Provides students with an examination of the design, execution, and write-up of qualitative research. Discusses methods of data collection, including participant-observation, ethnography, and interviewing.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	553	Terrorism/Weapons of Mass Des	Historical evolution of terrorism and weapons of mass destruction. Analyzes current theories and mitigation, preparedness, and response tactics.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Emergency Management and Homeland Security MA student (all concentrations) OR Law and Psychology PhD student
CRJ	554	Homeland Security	Presents skills necessary to develop policies, strategies, programs, and organizational structure of an all hazards/all risk homeland security program.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student (all concentrations) OR Law & Psychology PhD student; Credit is allowed for only CRJ 554 or PAF 461

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CRJ	555	Police & Int'l Terrorism	Suicide bomber interdiction, jihadism and anti-terrorism intelligence gathering. History of prior attacks and policy responses.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA or Criminology and Criminal Justice MS or Criminology and Criminal Justice PhD student; Credit is allowed for only CRJ 445 or CRJ 555 or CRJ 598 (Police and Int'l Terrorism-Israel)
CRJ	556	Etiology of Martyrdom	Development of a jihadist mindset. Social support for beliefs that lionize martyrdom.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law & Psychology PhD student
CRJ	557	Seminar in Domestic Terrorism	Develops a foundation of theoretical approaches to understanding domestic terrorism in the United States of America.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law & Psychology PhD student; Credit is allowed for only CRJ 557 or CRJ 598 (Seminar in Domestic Terrorism)
CRJ	558	International Terrorism	Reviews the various definitions of terrorism and how to apply these to terrorism issues and instances globally.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA student OR Criminology & Criminal Justice MS or PhD student OR Emergency Management & Homeland Security MA student OR Law and Psychology PhD student; Credit is allowed for only CRJ 558 or CRJ 598 (International Terrorism)
CRJ	560	Topics in Research Methods	In-depth exploration of either a specific social scientific research method or a narrow range of related methods relevant to criminological and criminal justice research.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminal Justice MA, Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, Forensic Science PSM, or Law and Psychology PhD student
CRJ	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-4		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): Criminal Justice MA student OR Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student

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CRJ	601	Seminar, Criminological Theory	Examines historical and contemporary criminological theories.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	602	Seminar, CJ Policy & Practice	Analyzes responses to crime and the operation of criminal justice system, with emphasis on theory and research on effectiveness of policies and practices of the system.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	604	Regression Models	With SWG 643, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student or Law and Society PhD student
CRJ	605	Quantitative Methods	Explores advanced techniques of statistical analysis within the field of criminal justice.	N	SEM	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	606	Adv Topics-Theoretical Crimin	Focuses on criminological theory construction, historical and contemporary theoretical debates within criminology, theory testing, empirical support for theories, and theoretical integration.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	3		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	614	Professional Dev Workshop I	A structured series of four workshop sessions to help doctoral students adjust to graduate school and begin to chart a path toward success as a scholar and colleague.	N	LEC	N	YGB	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	615	Professional Dev Workshop II	A structured series of four workshop sessions to help doctoral students develop teaching skills.	N	LEC	N	YGB	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	616	Professional Dev Workshop III	A structured series of four workshop sessions to help doctoral students navigate the academic job market.	N	LEC	N	YGB	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	0		Prerequisite(s): Criminology and Criminal Justice MS or PhD, Forensic Psychology MS, or Law and Psychology PhD student
CRJ	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CRJ	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-15		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CRJ	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Watts College of Public Service & Community Solution	School of Criminology and Criminal Justice	1-15		Prerequisite(s): Criminology and Criminal Justice MS or PhD student OR Law and Psychology PhD student
CSE	100	Prin of Programming with C++	Principles of problem solving using C++, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	110	Principles of Programming	Concepts of problem solving using an object-oriented programming language, algorithm design, structured programming, fundamental algorithms and techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): degree-seeking student; minimum 12 hours; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
CSE	180	Computer Literacy	Students gain fluency in integrating technology to efficiently and effectively solve problems using computational thinking.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	
CSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
CSE	205	Object-Oriented Program & Data	Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	CS	Prerequisite(s): CSE 110 with C or better OR Data Science, Analytics and Engineering PhD, Industrial Engineering MS, or Industrial Engineering PhD student; Credit is allowed for only ACO 102 or CSE 205 OR Visiting University Student
CSE	220	Programming for Computer Engr	Introduction to C/C++, systems programming, and concurrency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better OR Visiting University Student
CSE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs: degree-seeking stdnt w/min C: CSE 100/110; CSE 120/EEE 120 OR Sftwr Engr or Engr Mgt maj w/min C; CSE 110; SER 232 OR Elec Engr maj; CSE 100/110; CSE 120/EEE 120 OR Cmp Sci & Engr grad; Credit for CSE 230/EEE 230 OR Visiting University Student
CSE	240	Intro to Programming Languages	Introduces the procedural, object-oriented, functional and declarative languages.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 102 with C or better OR CSE 205 with C or better OR GIS major with GIS 222 with C or better OR Software Engineering graduate student; Credit is allowed for only ACO 240 or CSE 240 OR Visiting University Student
CSE	259	Logic in Computer Science	Logic has been called the calculus of computer science. The argument is that logic plays a fundamental role in computer science, similar to that played by calculus in physical sciences and other engineering disciplines. Indeed, logic plays an important role in computer architecture (Boolean logic, digital gates, hardware verification); software engineering (specification, verification); programming languages (semantics, type theory, logic programming); databases (relational algebra, database query language); artificial intelligence (automated theorem proving, knowledge representation); algorithms and theory of computation (complexity, computability, expressiveness). This course is a mathematically solid introduction to propositional logic, first order logic, logic programming, and their applications in computer science.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): CSE 205 with C or better; Credit is allowed for only CSE 259 or CSE 294 (Logic in Computer Science) OR Visiting University Student
CSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
CSE	301	Computing Ethics	Ethics for computing majors: history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 205 with C or better; FSE 100 with C or better OR Informatics BS major; CPI 101 with C or better; CSE 205 with C or better OR Visiting University Student
CSE	310	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/min C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cult(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
CSE	320	Design/Syn Digital Hardware	Design and synthesis of digital hardware with hardware description language, computer-aided design tools, and programmable devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 220 or 240 with C or better; CSE 230 or EEE 230 with C or better OR Visiting University Student
CSE	325	Embedded Microprocessor System	System-level programming and analysis of embedded microprocessors systems. Fundamental concepts of digital system design for embedded system applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 220 or CSE 240 with C or better; CSE 230 or EEE 230 with C or better OR Visiting University Student

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CSE	330	Operating Systems	Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, and file systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better OR CSE graduate student; Credit is allowed for only ACO 350 or CSE 330 OR Visiting University Student
CSE	335	Princ of Mobile App Dev	Covers topics pertaining to fundamental concepts of mobile application development principles including design patterns; data persistence; interfacing with services and devices; location and incorporation of existing frameworks; user interface and experience; context awareness; utilization of built-in tools for software profiling, testing, and version control; and security/privacy issues.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Informatics BS or Computer Systems Engineering BSE major; CSE 220 or 240 with C or better; Credit is allowed for only BMI 310 or CSE 335 OR Visiting University Student
CSE	340	Principles of Programming Lang	Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineer BSE or Computer Science BS major; CSE 310 with C or better; CSE 230 or EEE 230 with C or better OR CSE graduate student OR Visiting University Student
CSE	355	Intro Theoretical Computer Sci	Introduces formal language theory and automata, Turing machines, decidability/undecidability, recursive function theory, and complexity theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR CSE graduate student OR Visiting University Student
CSE	360	Intro to Software Engineering	Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Biomed Informat BS or Comp Sci BS or Dig Cult (Media Process) BA/BS or Geog Informat Sci BS or Comp Systems BSE or Engr Mgmt BSE major; CSE 220 or 240 w/ C or better OR Comp Sci or Software Engr grad stdnt OR Visiting University Student
CSE	365	Information Assurance	Concepts of information assurance (IA); basic IA techniques, policies, risk management, administration, legal and ethics issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): ACO 240, CIS 235, CIS 236, CSE 220, or CSE 240 with C or better OR Visiting University Student
CSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
CSE	408	Multimedia Information Systems	Design, use, and applications of multimedia systems. Introduces acquisition, compression, storage, retrieval, and presentation of data from different media such as images, text, voice, and alphanumeric.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 310 with C or better OR Software Engineering BS major; SER 222 with a C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	412	Database Management	Introduces DBMS concepts: Data models and languages. Relational database theory. Database security/integrity and concurrency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s): Biomed Informs BS, Comp Sci BS, or Comp Syst Engr BSE mjr; CSE 310 w/ C or better OR Comp Sci & Engr or Software Engr grad stdnt; Credit is for only ACO 220 or ACO 320 or CSE 412 or IFT 300(or IFT 433) or SER 322 OR Visiting University Student
CSE	414	Advanced Database Concepts	Object-oriented data modeling, advanced relational features, JDBC and Web access to databases, XML and databases, object-oriented databases, and object-relational databases.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 412 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	420	Computer Architecture I	Computer architecture. Performance versus cost tradeoffs. Instruction set design. Basic processor implementation and pipelining.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 230 or EEE 230 with C or better; CSE 310 with C or better; Credit is allowed for only CSE 420 or CSE 520 OR Visiting University Student

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CSE	423	Systems Capstone Project I	Development process: specification, design, implementation, evaluation, and testing with economic, social, and safety considerations. Technical communication and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prereq(s) w/ min C: Comp Sys Engr BSE major; CSE 301; CSE 320; CSE 325; CSE 330; CSE 360; ENG 101, 105 or 107; senior standing or postbacc student; Credit is allowed for only CPI 485, CPI 486, CSE 423, CSE 485 or CSE 486
CSE	424	Systems Capstone Project II	Continuation of capstone project started in CSE 423.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Systems Engineering BSE major; ENG 101, 105, or 107 with C or better; CSE 423 with C or better; senior standing or postbaccalaureate
CSE	434	Computer Networks	Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Sci BS or Comp Syst Engr BSE major; CSE 230 or EEE 230 w/ C or better; CSE 310 w/ C or better OR Computer Science & Engr or Software Engr graduate student; Credit is allowed for only ACO 330 or CSE 434 OR Visiting University Student
CSE	438	Embedded Systems Programming	Development of embedded system software, I/O handlers, and multiple threaded programs. Scheduling algorithms. Embedded software structures. Real-time operating system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; ENG 101, 105, or 107 with C or better; CSE 325 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	440	Compiler Construction I	Introduces programming language implementation. Implementation strategies such as compilation, interpretation, and translation. Major compilation phases such as lexical analysis, semantic analysis, optimization, and code generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Systems Engineering BSE or Computer Science BS major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student
CSE	445	Distributed Software Developmt	Distributed system architectures and design, service-oriented computing, and frameworks for development of distributed applications and software components.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; CSE 360 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	446	Software Integration and Engr	Software development using architecture design, composition, workflow, services, data resources, data representations, data management, and development tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Pre- or corequisite(s): Computer Science BS or Computer Systems Engr BSE major; CSE 445 with C or better if completed OR Computer Science and Engr or Software Engr grad student; Credit allowed for only CSE 446 or 598 (Software Integration & Engineering)
CSE	450	Design&Analysis of Algorithms	Design and analysis of computer algorithms using analytical and empirical methods; complexity measures, design methodologies, and survey of important algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS, Computer Systems Engineering BSE, or Data Science BS major; CSE 310 with C or better OR Computer Engineering graduate student; Credit is allowed for only CSE 450 or CSE 551 OR Visiting University Student
CSE	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stdnt; Credit allowed for CSE 460/SER 460 OR Visiting University Student

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CSE	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Ctr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grad st; Crdt only CSE 463 or SER 463 OR Visiting University Student
CSE	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/ C or better: Comp Sci or Comp Sys Engr mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stndt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsrn&Tstng) or SER 464 OR Visiting University Student
CSE	466	Computer Systems Security	Countermeasures to attacks to computer systems from miscreants (or hackers) and basic topics of cryptography and network security.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s)w/ C or better: Computer Sci BS or Computer Sys Engr BSE major; CSE 310; CSE 365 with C or better OR Software Engr BS major; CSE 365; SER 222 OR Computer Sci & Engr or Software Engr graduate student OR Visiting University Student
CSE	467	Data & Information Security	Basic concepts of security and privacy, data and database security, access controls, trust models, watermarking, and private information retrieval.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS, Computer Systems Engineering BSE or Data Science BS major; CSE 310 with C or better; CSE 365 with C or better OR Computer Science & Engineering or Software Engineering graduate student OR Visiting University Student
CSE	468	Computer Network Security	Practical network security exposure and hands-on experience about basic security concepts, case studies and useful tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) with C or better: Computer Science BS, Computer Systems Engineering BSE, or Software Engineering BS major; CSE 365 OR Computer Science, Computer Engineering, or Software Engineering graduate student OR Visiting University Student
CSE	469	Computer and Network Forensics	Identification, extraction, documentation, interpretation, and preservation of computer media for evidentiary purposes, file system forensics, and network forensics.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Sci BS or Computer Systems Engr BSE major; CSE 310 with C or better; CSE 365 with C or better OR Software Engr BS major; CSE 365 with C or better; SER 222 with C or better OR Computer Sci & Engr or Software Engr graduate student
CSE	470	Computer Graphics	Introduces basic concepts of interactive computer graphics, realistic rendering, and 3-D viewing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Digital Culture (Media Processing) BA/BS, Comp Sci BS, Geog Info Science BS, Comp Sys Engr BSE, or Software Engr BS major; CSE 310 or SER 222 with C or better; MAT 342 or 343 OR Comp Sci and Engr or Software Engr graduate student
CSE	471	Intro Artificial Intelligence	State space search, heuristic search, games, knowledge representation techniques, expert systems, and automated reasoning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS, Computer Systems Engineering BSE, Data Science BS, or Geographic Information Science BS major; CSE 310 with C or better OR Computer Science & Engr or Software Engr graduate student OR Visiting University Student
CSE	472	Social Media Mining	Network measures, social network analysis, network models, random graphs, small-world model, power laws, data mining, influence and homophily, information diffusion, epidemics, behavioral analysis, recommendation in social media, community detection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s) with a C or better: Comp Scie BS or Comp Syst Engr BSE major; CSE 310; IEE 380; MAT 343 OR Comp Scie & Engr or Software Engr grad student; Credit is allowed for only CSE 472 or CSE 494 (Social Media Mining) OR Visiting University Student

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CSE	474	Mobile Robotics	Aims to make accessible to undergraduate students a principled and mathematically sound approach to the design of algorithms for robots. Students acquire the mathematical foundations that are required for the implementation and analysis of algorithms for robotic applications through homework problems and a final project. Among course goals is the development of the vocabulary and mathematical background so that the students can follow the current research and development trends in the robotics industry.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Sci BS or Computer System Engineering BSE major; CSE 310 with C or better; IEE 380 with C or better; MAT 343 with C or better; Credit is allowed for only CSE 474 or CSE 494 (Intro to Robotics) OR Visiting University Student
CSE	475	Found of Machine Learning	Machine learning techniques: supervised learning, unsupervised learning, and neural networks and deep learning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/min C: Comp Sci BS, Comp Sys Engr BSE, Data Sci BS, or Informatics BS maj; CSE 310; DAT 300 or IEE 380; MAT 342 or 343 OR Comp Sci or Software Engr grad stdt; Credit for only CSE 475 or 494 (Intro Machine Lrning) OR Visiting University Student
CSE	476	Intro Natural Language Process	Principles of computational linguistics, formal syntax, and semantics, as applied to the design of software with natural (human) language I/O.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE or Data Science BS major; CSE 310 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	477	Intro Computer-Aided Geom Desg	Introduces basic concepts of 3-D computer geometry, including curves, surfaces, meshes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science BS or Computer Systems Engineering BSE major; MAT 342 or 343 with C or better OR Computer Science and Engineering or Software Engineering graduate student OR Visiting University Student
CSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): junior or senior standing
CSE	485	Computer Sci Capstone Proj I	First course in capstone sequence for computer science and informatics majors emphasizing development process, technical skills, teamwork, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prereqs w/min C: Comp Sci BS; CSE 301; CSE 330; CSE 340; CSE 355; CSE 360; ENG 101, 105 or 107; senior or postbacc OR Informatics BS; CPI 350; CSE 463; ENG 101, 105 or 107; Credit allowed for CPI 485 or CSE 423 or CSE 485
CSE	486	Computer Sci Capstone Proj II	Second course in capstone sequence for computer science and informatics majors continuing the development process, technical skills, teamwork and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3	L	Prerequisite(s): Computer Science BS or Informatics BS major; CPI 485 or CSE 485 with C or better; ENG 101, 105, or 107 with C or better; senior standing or postbaccalaureate student; Credit is allowed for only CPI 486 or CSE 423 or CSE 486
CSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
CSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
CSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): CSE 310 with C or better OR Visiting University Student
CSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-3		
CSE	509	Digital Video Processing	Concepts of digital video compression, video analysis, video indexing, browsing and retrieval, video transmission over networks, video processors, and relevant industry standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student

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CSE	510	Database Mgmt Sys Implementn	Implementation of database systems. Data storage, indexing, querying, and retrieval. Query optimization and execution, concurrency control, and transaction management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	511	Data Processing at Scale	Delves into new frameworks for generating, processing and managing large-scale data-sets. More specifically, covers the following topics: core database concepts, distributed and parallel data systems, deploying and operating data systems in the cloud, NoSQL database systems, and big data tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engr or Computer Sci grad student or Data Sci, Analytics & Engr PhD or Global Management (Data Sci) MGM or Software Engr MS OR Online Computer Sci nondegree-seeking grad student; Credit is allowed for only CSE 511 or CSE 512
CSE	512	Distributed Database Systems	Distributed database design, query processing, and transaction processing. Distributed database architectures and interoperability. Emerging technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM or Software Engineering MS student; Credit is allowed for only CSE 511 or CSE 512
CSE	515	Multimedia and Web Databases	Data models for multimedia and Web data; query processing and optimization for inexact retrieval; advanced indexing, clustering, and search techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	520	Computer Architecture II	Computer architecture description languages, computer arithmetic, memory-hierarchy design, parallel, vector, multiprocessors, and input/output.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Electrical Engineering, or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	522	Real-Time Embedded Systems	Development of real-time embedded systems, scheduling algorithms, embedded software structures, real-time operating system.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science, Computer Engineering, Master of Engineering, Engineering Science (Software Engineering) or Robotics and Autonomous Systems (Artificial Intelligence) graduate student
CSE	530	Embed Operating Sys Internals	Investigating Linux source including: memory management, kernel synchronization and driver design topics. Designing, coding, testing, and evaluating embedded operating system software in a Linux environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	531	Distrib/Multiprocess Oper Sys	Distributed systems architecture, remote file access, message-based systems, object-based systems, client/server paradigms, distributed algorithms, replication and consistency, and multiprocessor operating systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	534	Advanced Computer Networks	Advanced network protocols and infrastructure, applications of high-performance networks to distributed systems, high-performance computing and multimedia domains, special features of networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	535	Mobile Computing	Mobile networking, mobile information access, adaptive applications, energy-aware systems, location-aware computing, mobile security and privacy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, Robotics and Autonomous Systems (Artificial Intelligence), or Software Engineering graduate student OR online Computer Science nondegree-seeking graduate student
CSE	536	Advanced Operating Systems	Protection and file systems. Communication, processes, synchronization, naming, fault tolerance, security, data replication, and coherence in distributed systems. Real-time systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	539	Applied Cryptography	Uses cryptography for secure protocols over networked systems, including signatures, certificates, timestamps, electrons, digital cash, and other multiparty coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student

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CSE	543	Info Assurance & Security	Comprehensive understanding of information assurance and security problems with the solutions as well as hands-on experiences about applying these solutions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student or Software Engineering MS student or online Computer Science nondegree-seeking graduate student
CSE	545	Software Security	Theories and tools for software security, including secure design, threat analysis and modeling, security testing and coding.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	546	Cloud Computing	Virtualization, cloud computing, programmable networking, performance evaluation, information assurance, distributed and parallel computing, and cloud computing-based applications. Students must have a solid background in computer architecture, operating system and computer networking to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM or Software Engineering MS student
CSE	548	Adv Computer Network Security	Comprehensive understanding of network security and corresponding solutions, including cryptography, access control, secure Web transactions, e-mail security, and viruses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	550	Combinatorial Algorithms/Intrt	Combinatorial algorithms, nondeterministic algorithms, classes P and NP, NP-hard and NP-complete problems, and intractability. Design techniques for fast combinatorial algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	551	Foundations of Algorithms	Advanced topics in formal algorithm design and analysis, including advanced shortest-paths algorithms, amortized analysis, network flows, NP-completeness and selected topics in computational geometry, distributed/parallel, randomized, and approximation algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engr, Computer Sci, or Industrial Engr grad student or Data Sci, Analytics & Engr PhD or Robotics & Autonomous Systems (AI) MS OR Online Computer Sci nondegree-seeking grad student; Credit is allowed for only CSE 450 or CSE 551
CSE	552	Random&Approximation Algorithm	Introduces two important areas of algorithm design for graduate students. A randomized algorithm is allowed to rely on the outcome of a random experiment in deciding on its next step. In many applications, randomized algorithms are simpler than any deterministic algorithms known, but in several cases, they are in fact more powerful or more efficient than any deterministic algorithms. Covers basic paradigms for randomized algorithm design and analysis, as well as for derandomization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student; CSE 550 or 551 or 555 with B or better
CSE	555	Theory of Computation	Rigorous treatment of regular languages, context-free languages, Turing machines and decidability, reducibility, and other advanced topics in computability theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	556	Game Theory with Applications	Strategic conflict as matrix games, notions of equilibrium, definition and existence of Nash equilibrium, zero-sum games, extensive-form games, Bayes Nash equilibrium, potential games, routing games, algorithmic game theory, computation of Nash equilibrium, incentives and pricing in communication networks, application of game theory in wireless networks. Knowledge of calculus, discrete mathematics, probability theory and algorithms is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD student
CSE	561	Modeling/Simulation Theory/App	Modeling theories, simulation protocols, object-oriented modeling, model design, simulation analysis, network-based systems, discrete-event modeling, continuous modeling, hybrid modeling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student or Data Science, Analytics and Engineering PhD student or Online Computer Science nondegree-seeking graduate student

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CSE	563	Software Requirements and Spec	Examines the definitional stage of software development; analysis of specification representations, formal methods, and techniques emphasizing important application issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student
CSE	564	Software Design	Examines software design issues and techniques. Includes a survey of design representations and a comparison of design methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): graduate Computer Engineering or Computer Science or Software Engineering student
CSE	565	Software Verif/Validation/Test	Test planning, requirements-based and code-based testing techniques, tools, reliability models, and statistical testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student or Online CS nondegree-seeking graduate student
CSE	566	Software Proj/Process/Qual Mgt	Project management, risk management, configuration management, quality management, and simulated project management experiences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science or Software Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	569	Fundamentals of Stat. Learning	Concepts of statistical pattern recognition, Bayesian decision theory, parameter estimation, discriminant analysis, basics of artificial neural networks, basics of data clustering. Knowledge of college-level calculus, linear algebra, basic probability theory and proficiency in computer programming is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering, Computer Science, or Industrial Engineering graduate student or Data Science, Analytics and Engineering PhD student
CSE	570	Advanced Computer Graphics I	3D shape analysis techniques: half-edge data structure, polygon mesh processing, fast marching method, iterative closest point algorithms, heat kernel and spectral analysis, isometric embedding.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	571	Artificial Intelligence	Definitions of intelligence, computer problem solving, game playing, pattern recognition, theorem proving, and semantic information processing; evolutionary systems; heuristic programming.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	572	Data Mining	Advanced data mining techniques: classification, clustering, association, preprocessing; performance evaluation; information assurance, Web mining, security and privacy issues, and other applications. Students must have a solid background in database management systems, search, learning, and statistics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s): Computer Engr, Comp Sci or Industrial Engr grad stdt or Data Sci, Analytics & Engr PhD or Global Mgmt (Data Sci) MGM or Software Engr MS or Online Comp Sci nondegree-seeking grad stdt; Credit is allowed for only BMI 555 or CSE 572 or IEE 520
CSE	573	Semantic Web Mining	Data mining techniques for structuring and organizing unstructured sources such as text and Web data into meaningful machine-processable information; computational aspects of information extraction and data linkage; discovery and prediction tasks where text serves as data such as detecting events, measuring public opinion and making recommendations. A background in databases, algorithms and theory of computation is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Global Management (Data Science) MGM student
CSE	574	Planning/Learning Methods AI	Reasoning about time and action, plan synthesis and execution, improving planning performance, applications to manufacturing intelligent agents.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (Artificial Intelligence) MS student
CSE	575	Statistical Machine Learning	Spectral clustering, regression, classification, semi-supervised learning, feature reduction, manifold learning, ranking, kernel learning and multitask learning.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student

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CSE	576	Topics/Natural Language Proc	Comparative parsing strategies, scoping and reference problems, nonfirst-order logical semantic representations, and discourse structure.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics and Engineering PhD or Robotics and Autonomous Systems (Artificial Intelligence) MS or Software Engineering MS student
CSE	577	Advanced Geometric Modeling I	Advanced concepts of geometric modeling: rectangular and triangular surfaces, triangle meshes, Voronoi diagrams, discrete and continuous shape measures, volumes and volume visualization. Students must have a solid background in linear algebra, calculus, and basic 3D graphics to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	578	Data Visualization	Amidst the information flood in which we are currently immersed, visualizations can be a well-placed treetop. The rise of big data has the potential to inform decisions, and visual representations can play a crucial intermediate role in our daily information consumption. Covers techniques and algorithms for creating effective visualizations based on principles from graphic design, visual art, perceptual psychology and cognitive science to enhance the understanding of complex data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Comp Engr or Comp Sci or Industrial Engr grad student or Data Sci, Analytics & Engr PhD or Global Mgmt (Data Sci) MGM or Robotics & Autonomous Systems (AI) MS or Software Engr MS OR Online Comp Sci nondegree-seeking graduate student
CSE	579	Knowledge Representation	Covers knowledge representation and reasoning algorithms in artificial intelligence, shows how they can be used in practice, and provides an overview of current research trends.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Software Engineering MS OR Online CS nondegree-seeking graduate student
CSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS or Software Engineering MS OR Online Computer Science nondegree-seeking graduate student
CSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Science or Computer Engineering graduate student OR Online Computer Science nondegree-seeking graduate student
CSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		
CSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		Prerequisite(s): Computer Engineering or Computer Science graduate student or Data Science, Analytics & Engineering PhD or Robotics & Autonomous Systems (AI) MS OR Online CS nondegree-seeking graduate student

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CSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): Computer Engineering (Comp Systems) PhD, Computer Engineering (Electrical Engr) PhD, Computer Sci PhD, Computer Sci (AME) PhD, Computer Sci (Cybersecurity) PhD, Data Sci, Analytics & Engineering PhD, or Industrial Engineering PhD student
CSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
CSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
CSM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
CSM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
CSM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
CSM	305	Sports Fac Operations & Mgmt	Overview of the management and operations of sports facilities.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): MAT 142 or higher; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
CSM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
CSM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisite: minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
CSM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
CSM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student

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CSM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
CSM	407	Ethics/Legal Issues in Sports	Comprehensive look at ethical decision making from many perspectives in the sports environment. Presents legal issues as they relate to history, present society and future trends.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CSM 201 OR Visiting University Student
CSM	453	Inclusive Community Sport	Examines the foundations of competitive and cooperative inclusive recreation and sport in society from local, regional, national and global perspectives.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or PRM 453 OR Visiting University Student
CSM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; Credit is allowed for only CRD 463 or CSM 463 or NLM 463 or PRM 463 or TDM 463
CSM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student
CSM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
CSM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
CSM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
DAT	250	Data Science and Society	Examines quantitative literacy from a data and evidence driven perspective. Looks at the literature behind vaccines, climate, and other contentious topics where there is a wealth of scientific literature and yet these areas are still hotly debated. Investigates ways in which data science is abused; how to mislead with statistics, and how these problems have created a lack of trust in science. Through class discussions, case studies and exercises, students learn the basics of ethical thinking in science, understand the history of ethical dilemmas in scientific work, and study the distinct challenges associated with ethics in modern data science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 117, 119, 142, 170, 171, 265, or 270 with C or better OR Visiting University Student
DAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	300	Math Tools for Data Science	Covers the core mathematical topics that underpin data science as well as the key algorithms used for modern data analysis and how to implement them in Python.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 300 or STP 494 (Mathematical Tools for Data Science) OR Visiting University Student
DAT	301	Exploring Data in R and Python	Focuses on the exploration of the types of data typically encountered in modern data science, such as text data, spatial data, and time series data. Uses various statistical techniques to gain insight into the structure of the data, including graphical visualization, linear regression, trees and clustering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4		Prerequisite(s): MAT 266 or 271 with C or better; MAT 343 with C or better; Credit is allowed for only DAT 301 or STP (Exploring Data in R and Python) OR Visiting University Student
DAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	401	Stat Model Inference Data Sci	Covers the basic statistical concepts underlying data science as well as some of the major methods. Includes fundamental ideas such as the key idea in predictive modeling is the bias-variance tradeoff, and cross validation is the basic approach for dealing with the bias-variance tradeoff. Statistical inference underlies much of data science methodology. Includes Bayesian and frequentist approaches to inference and how they are used in some of key ideas and methods in data science such as causal inference with observational data. Covers some key methods such as K nearest neighbors, naive Bayes classification, A/B testing, linear models, Gaussian processes and data reduction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): DAT 301 with C or better; Credit is allowed for DAT 401 or STP 494 (Statistical Modeling and Inference for Data Sci) OR Visiting University Student

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DAT	402	Machine Learning-Data Science	Concerns the key modern approaches for uncovering high-dimensional complex structure in data. Topics include regularized regression, ensemble methods with trees, deep neural nets, clustering and dimension reduction and state space modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 or STP 421 with C or better; STP 420 with C or better OR DAT 401 with C or better; Credit is allowed for only DAT 402 or STP 494/598 (Machine Learning / Statistical Learning) OR Visiting University Student
DAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
DAT	490	Data Science Capstone	Capstone allows students to build a culminating experience that reflects the breadth and depth of their data science experience and allows each student to explore a research area, interest, theme or question within the realm of data science. Develops final written projects in small groups based on consultation either directly within data science or within their concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2-4	L	Prerequisite(s): DAT 401 with C or better; ENG 101, 105, or 107 with C or better
DAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
DAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
DAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
DBA	701	MacroECN Policy in Global Envi	Provides the framework for policy makers when facing macroeconomic situations, the tools in analyzing the costs and benefits of alternative policy options, and the knowledge necessary for making recommendations to policy makers and business leaders. Students learn knowledge and skills about global economy and risks that help facilitate dissertation research.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	702	Glob FIN Sys Mkt & Institution	Examines the overall architecture of the global financial system, its major components, and their functions in the macro economy.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	703	Glob FIN Sys Institute Invest	A large fraction of investors around the world invest in securities markets indirectly, viz. through mutual funds or separate accounts established with investment managers, whether they be endowments, foundations, pension plans or sovereign funds. Exposes students to the global marketplace for such portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	704	Des KBs Org Performance & Inno	Covers various issues on executive compensation and management pay structure with a particular emphasis on aligning business strategy, organization design to the choice of performance standards and pay structure for managers.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	705	Global Corporate Strategy	Demonstrates that decisions affecting the international expansion of a firm are neither obvious nor totally determined by the technological or economic forces generally associated with globalization. Addresses the most transcendental decisions that multinational firms face in the course of conducting business across borders.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	706	Strategic Visioning Leadership	Addresses the interrelationship among organizational culture, leadership, and the management of change in order to promote continuous improvement of the organization's market position. Addresses the role of strategy, how strategy explicates vision, and how effective strategies are created.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	707	Risk Management	Provides an understanding of the broad set of risks an enterprise faces; their origin, characteristics and potential impact on business; and how they can be efficiently managed at the enterprise level.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	708	Corporate FIN and Governance	Helps students understand the link between finance and corporate strategies, as well as examine ways to establish and reform the practices of corporate governance in China.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	709	Finance and Law	Helps students learn about the philosophy of law, various legal systems, the relationships among law and economics and finance, the practice of law in a global context.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	2		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student

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DBA	710	Financial Decision Making	Provides a framework of conceptual knowledge and enables students to understand what the literature on financial theory is trying to do and how it all fits together. Also provides an in-depth experience with the subject of finance and equips students for their future development as a practicing executive.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	711	Financial Innovations	Focuses on how financial innovations influence the evolution of finance. Discusses many of the major financial innovations in recent history, the forces driving these innovations, their impact on the financial system and the real economy and the risks they bring.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	712	Econ & Finance Domestic Module	Addresses many critical topics facing China today on its quest of globalization, the need for transforming its economic structure, capital markets and corporate control, and its monetary policies.	N	LEC	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	713	Adv Topics in Strategy Mgt Dom	Reexamines many popular best practices through panel discussion and speaker series on why some of those practices failed to work in China, and how firms have creatively modified their strategic undertakings to fit its environment.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	714	Current Trends U.S. Module	Provides first-hand experiences on the world class practices by the multinationals and interactions with the leading experts on the emerging topics of interest on globalization, financial regulations, and managerial innovations.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	715	Current Trends Europe Module	Provides direct exposure to European markets, firms, and institutions, their history, current status, and future directions.	N	LEL	N	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	4		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	721	Seminar: Research in Action I	Provides needed skills for research and thesis work. 1. Focuses mainly on research design and fundamental statistical/survey and field study methods. The key objective is to provide students with the needed required skills and concepts of the scientific method, the philosophy of science, and research design with an emphasis to solve specific problems. This course is spread out during the first year of the program.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	722	Seminar: Research in Action II	Focuses on the process of research "in actions" through faculty presentation and research workshops. Faculty with diverse research interest and methodologies present up-to-date research works. Through interaction, students gain first-hand experience on learning the process of how faculty, with diverse research interests, are able to identify specific research topic, choosing the right research methodology to address their research questions. The presentation and research workshop are scheduled at the beginning of the second year and throughout the entire year, allowing the program to leverage faculty availability during their course delivery while enabling students to seek out their faculty mentors for future dissertation engagement.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	723	Seminar: Research in Action III	Provides students with opportunities to present their own research proposal/ thesis ideas while allowing the participating faculty and fellow students to offer constructive comments.	N	SEM	Y	GNA	W. P. Carey School of Business	Dean, W.P. Carey School of Business	3		Prerequisite(s): W. P. Carey DBA degree-seeking graduate student
DBA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DBA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Dean, W.P. Carey School of Business	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	100	Introduction to Dance	Introduces 21st-century dance through a lens of creativity that acknowledges dance as a vital art where leadership, context, humanity and reflection provide centers of dynamic engagement for bodily movement where new meanings for dance are possible.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	110	Argentine Tango I	Introduces basic movement elements, explores various contexts shaping Argentine Tango, and emphasizes social tango with exposure to vals and milonga timing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	111	Belly Dance I	Familiarizes students with the art and practice of belly dance. Covers posture, styling, basic body isolations, rhythm patterns, footwork, as well as the social significance and history of the dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	112	Capoeira I	Introduces the Afro-Brazilian martial art and movement form capoeira. Molds elements of self-defense, dance, music, song, language, culture and philosophy into the course.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		

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DCE	113	Dances of Africa I	Introduces basic elements of West and Central African dance styles, including the traditional rhythms and cultural context.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	114	Dances of India I	Introduces Indian folk dances with an emphasis on the history and various movement elements of an ancient South Indian classical dance form, known as Bharata Natyam.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	115	Yoga I	Introduces a basic physical and philosophical understanding of yoga. Designed by a certified Yoga instructor.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	116	T'ai Chi Chuan I	Introduces an ancient Chinese internal martial art form. The structure includes the beginner level of Tai Chi Chuan theory and movement practice.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	117	Feldenkrais I	The Feldenkrais method is an approach to enhance awareness of the body, improve functional actions, and expand one's repertoire of movements.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	118	Yoga/Pilates	Provides a basic physical and philosophical understanding of yoga and Pilates mat practices.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	120	Contemporary/Modern I	Beginning level of contemporary modern dance for nonmajor students. Emphasizes a range of movement styles, fusing contemporary and traditional forms. Places a special focus on somatic principles, body placement, strength and range of movement. Provides opportunities to explore the history of contemporary modern dance, as well as engage in creative activities.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	121	Ballet I	Introduces basic concepts of ballet technique, including dynamic alignment, musicality and classical movement vocabulary. Instructors use a somatic approach to this traditional art form. Students also learn about the history and context of ballet.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	122	Jazz I	Explores the basics of jazz dance techniques and various styles. Focuses on alignment, technique, jazz rhythms and performance skills.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	123	Nonmajors Hip Hop I	Introduces various styles of dance within the hip hop genre. Covers the fundamentals of dance through embodied learning of hip hop styles based on instructor's area of expertise. No previous dance experience necessary. Expects students to engage in both weekly movement classes as well as at least one cultural event beyond the studio to better understand their dance practice within the cultural context of which they exist.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	124	Latin/Swing/Ballroom I	Introduces major Latin and ballroom dances and focuses on a system of elements that are found in all partnership dances, including movement components, rhythmic patterns, dance positions, and unique characteristics used to better define each dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	125	Afro-Latin Salsa I	Beginner-level Afro-Latin social dances. Designed and structured for students with no previous dance history with movement, historical context, culture and rhythms that are associated with Latin social dance. Students learn fundamental technique and partnering frameworks, while engaging in the structures of community and participatory engaged practices in social dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	126	Country-Western	Initiates the student into the rhythm two-step, progressive two-step, night club two-step, country cha-cha, country waltz, triple swing and a multitude of line dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	130	First-Year Movement Pract I	Introduces diverse somatic movement principles and practices through exploration of movement, context, theory, and personal reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major OR Visiting University Student
DCE	131	First-Year Movement Pract II	Modular structure enables a series of short intensive studies including movement, context, theory, and personal reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 130 with C or better
DCE	132	Dance Techniques	Introduces the movement vocabularies or steps, aesthetics and practices of the dance styles currently offered in the Bachelor of Fine Arts dance degree programs. Includes equal emphasis on the dance styles presented in class, which may include contemporary ballet, postmodern contemporary dance, salsa, urban movement practices and others. Emphasizes physical practice; expects students to engage creatively, reflect on their learning and demonstrate critical thinking in all class sessions.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance or Dance Education BFA major

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DCE	133	Hip Hop I	Focusing on a strong foundation, encourages students to engage in studio classes and community cultural events throughout the semester. Exposes students to several hip hop foundational dance forms under and related to breaking, popping and locking. Develops and connects culturally relevant content to inform students' movement in these styles and, more importantly, find their own identity within these forms.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major, Performance & Movement BA, BIS Dance concentration or Dance minor OR Visiting University Student
DCE	134	Postmodern Contemporary I	Studies contemporary modern dance rooted in postmodern traditions. Includes diverse movement styles that build foundational knowledge and integrates somatic principles with physically challenging material. Enhances the student's artistry as a performer and creator. Also introduces the history and theory of the postmodern contemporary dance form.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student
DCE	135	Contemporary Ballet I	Begins the study of ballet from a contemporary lens. Content includes classical ballet vocabulary, dynamic alignment, whole body integration and experiential anatomy. Enhances a student's foundational knowledge of the ballet vernacular; also considers the social and historical contexts of ballet artists and techniques.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student
DCE	136	Somatic Practices I	Survey course offers a practical and theoretical introduction to some of the major somatic practices evolving during the 20th century in the West; also offers exposure to some traditional Eastern disciplines and philosophies influencing those developments. Focuses upon self care, resilience, well-being of spirit, body and mind; explores movement and the integration of the whole person through a variety of somatic lenses.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Dance (Dance Education) BFA, Performance and Movement BA major, or Dance minor OR Visiting University Student
DCE	137	African&Diaspora Mvt Pract I	The African Diaspora refers to the many communities of people of African descent dispersed throughout the world as a result of historic movements. This course explores various dances from the Diaspora. Students learn to execute polyrhythmic patterns and practice multiple types of call and response cues performed both verbally and physically. Different exercises focus on body isolation, the use of weight, and traveling in space.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DCE 137 or DCE 194 (Mvt Practice: Africa/Diaspora) or DCE 294 (Mvt Practice: Africa/Diaspora) or DCE 494 (African & Diaspora Mvt Prac)
DCE	139	Afro-Latin Movement Pract I	Beginning-level course in Afro-Latin dance practices introduces the culture, movement rhythms and historical dialogue associated with various forms of Afro-Latin social dance practices, specifically salsa and mambo. Progressively teaches basic fundamentals in footwork and partner work, along with understanding timing and connection with Afro-Latin social music throughout the semester in class and in social events. By learning the movement fundamentals and applying them through social dancing, students not only succeed in the course, but also evolve in becoming a knowledgeable and participative social dancer within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed for only DCE 139 or DCE 194 (Salsa I)
DCE	160	Creative Practice I	Focuses on cultivating one's creative process by investigating methods, strategies and dance-making approaches. Involves movement investigation and development, moving-making and designing, group discussions, readings, journal writing, instructor and peer-feedback, choreographic analysis, and reflective writing. Explores creative strategies that begin from a place of self and embodied history, one's archive, and ongoing repertoire. Expands toward processes that explore our interconnectivity with the body, multiple bodies, partners and constructing new methodologies of performing movement for any audience or daily life.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA or Dance (Dance Education) BFA or Performance and Movement BA major OR Visiting University Student
DCE	161	Creative Practice II	Explores creativity and creative processes with reference to some key historical practices and influential artists. Encourage and develops students' awareness of their own imagination and creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA or Dance (Dance Education) BFA or Performance and Movement BA major; DCE 160 with C or better OR Visiting University Student
DCE	170	First-Year Seminar I	Orientation to studying dance in college, the university learning environment, and the professional practice of dance	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance BFA or Performance and Movement BA major OR Visiting University Student

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DCE	171	First-Year Seminar II	Continuation of First-Year Seminar I. Focuses on orientation to the larger field of contemporary dance practice with an emphasis on developing tools and processes for reflection, synthesis, and critical thinking. Requires participation in School of Dance "Dance Matters."	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major
DCE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	201	Dance, Culture&Global Contexts	Introduces the study of dance as culture in diverse global contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
DCE	202	Dance in U.S. Popular Culture	Investigates vital cultural heritages that have shaped dance in U.S. American popular culture from 20th century to the present. Emphasizes dance as a producer of social space and cultural identity as well as a reflection of diverse social realities and dynamics of power. Following required reading and videos, the course surveys time periods of dance from the late 1800s through the 20th century to the present day.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Credit is allowed for only DCE 202 or 294 (Dance in US Popular Culture)
DCE	203	The Walking Body	Investigates walking as movement language with the focus on physical thinking. Micro-research engages the student with collecting data from peripatetic walks and focused weekly walkings to hone the skill sets of: perception to increase one's awareness to the spatio-temporal context and one's attentional flow during walking.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Pre- or corequisite(s): ENG 101, 105 or 107 with C or better if completed OR Visiting University Student
DCE	204	Dance, Health and Wellness	A class of dynamically interacting ideas. Dance promotes health and wellness. Wellness practices create a healthy dancer. A healthy dancer is one who has a wellness mindset and knows how to prevent injuries. Studying the interaction of these three ideas is intended to produce a movement literacy. This movement literacy, however, lives implicitly in a world where bodily communication of tensional relationships, tugs, and pulls is silent. Thus, a further intention is to transform the implicit understanding to explicit communication through applying academic communicative skills of writing and speaking. Circumnavigates the polycenters of healthy movement, injury prevention and wellness identifying strategies, models and practices that best optimize movement.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed OR Visiting University Student
DCE	205	How Dance Matters	Introduces observing, discussing and analyzing dance through a contemporary sociocultural lens. Introduces the contemporary contexts of the dance forms currently offered in the BFA dance programs, including contemporary ballet, postmodern contemporary, Afro-Latin movement practices and hip hop. By examining where and when the dance occurs, who participates and how, and why dance matters across each of these forms, students gain a deeper understanding of what makes each dance form unique. Investigates the elements of each form that overlap with others and how dance can both ignite and reflect cultural change. Additionally, students learn to write about dance in a way that recognizes and describes key values and attributes of each dance form and articulately uses description, interpretation and evaluation to create informed perspectives of dance.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
DCE	210	Argentine Tango II	Builds upon concepts, figures, and elements of the Argentine Tango introduced in level one.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 110 or DAN/DCE 194 (Argentine Tango I)
DCE	211	Belly Dance II	Focuses on refining beginning technique, advanced movements, layering and musical interpretation. Uses choreography and improvisation to encourage mind-body awareness.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 111 OR Visiting University Student
DCE	216	T'ai Chi Ch'uan II	Intermediate-level study of the ancient Chinese martial art of rounded, fluid, balanced movements. Teaches the sets of long form Yang style of Tai Chi Ch'uan in a slow and relaxed manner.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 116 or DAN 194 (T'ai Chi Ch'uan I) OR Visiting University Student
DCE	220	Contemporary/Modern II	Intermediate level of contemporary modern dance for nonmajor students. Emphasizes a range of movement styles, fusing contemporary and traditional forms. Special focus on somatic principles, body placement, strength and flexibility. Provides opportunities to explore the history and social significance of modern dance, as well as performance skills and choreography.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		

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DCE	221	Ballet II	Open to all ASU students, focuses on contemporary and classic ballet practices and increasing students' understanding of the integration of both. Students also learn about the historical and cultural contexts of contemporary ballet. Continued practice on voicing the inner perspective of experiencing ballet and relating it to the aesthetics outer perspective.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	222	Jazz II	Explores intermediate level of jazz dance techniques.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DCE 122 or DAN 130 (Jazz I)
DCE	223	Nonmajors Hip Hop II	Designed for intermediate dancers to expand, explore and deepen their training in foundational hip hop dance forms. Focus aligns with instructor area of expertise. Students experience social and community aspects of hip hop culture by engaging with cultural artists and events throughout the term.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 123 OR Visiting University Student
DCE	224	Latin/Swing/Ballroom II	Continues development of level one Latin/Swing/Ballroom dances to prepare student to have command of the complex rhythmic patterns and figures used in major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 124 or DAN 194 (Latin/Swing/Ballroom I) OR Visiting University Student
DCE	225	Afro-Latin/Salsa II	Designed and structured to build upon content from previous coursework, for students who have completed Level I or have had previous dance history with movement, historical context, culture and rhythms that are associated with Latin social dance. Students continue to refine their technique and sensibility, while engaging in the structures of community and participatory engaged practices in social dance.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 125 OR Visiting University Student
DCE	226	Music & Kinesthetic Comm Dance	Brings basic principles of rhythmic awareness and theory to life through movement and breath. Develops listening skills to "hear" movement and to "see" sound, providing a foundation of skills and knowledge to perform and aurally recognize beat patterns, subdivisions, grooves, textural and qualitative subtleties in different styles. Practical application of concepts and abilities for teaching dance musically--connecting to students' personal movement practice, somatic and pedagogy classes as well as linking rhythmic theory concepts with aural and kinesthetic listening skills and life.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Corequisite(s): DCE 124, 133, 134, 135, 136, 139, 224, 233, 234, 235, 236, 239, 324, 333, 334, 335, 336, or 339 OR Visiting University Student
DCE	230	2nd-Yr Movement Practices I	Investigates selected movement forms in the second-year movement practices. New movement forms include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance majors; DCE 131 with C or better OR Visiting University Student
DCE	231	2nd-Yr Movement Practices II	This course is set up in two modules. In module one, students will investigate a movement form, include but are not limited to contact improvisation, Alexander technique, Feldenkrais, Body Mind Centering (BMC), taekwando, aikido, wushu, LMA, yoga, or somatic bodywork. Module two expands the practice of rhythmic awareness through exploration and investigation of the close relation between thought and act, the kinesthetic and the verbal, the text and the beat, as well as the breath and the word.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 230 with C or better
DCE	233	Hip Hop II	With a deeper understanding and training with a focus on music freestyle and cultural connections, students build upon foundational knowledge and approaches to at least two hip hop forms. Students take instructor-led dance classes while working with local practitioners in the studio and community such as DJs, beatmakers, beatboxers and music producers.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 133 with C or better OR Visiting University Student
DCE	234	Postmodern Contemporary II	Further the study of contemporary modern dance rooted in postmodern traditions at the intermediate level. Emphasizes somatic principles, performance quality and complex movement ideas. Enhances the student's artistry as a performer and creator; also furthers student's study of the history and theory of the postmodern contemporary discipline through physical and written assignments. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 132 with C or better; DCE 134 with C or better OR two completions of DCE 134 with C or better OR Visiting University Student

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DCE	235	Contemporary Ballet II	Furtheres the study of ballet with a contemporary lens, allowing the dancer to develop and hone the relationship between the somatic experience and the ballet tradition. Employs further investigation of concepts as students manipulate physical concepts to deepen their understanding of the theory and lineage of contemporary ballet. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 132 with C or better; DCE 135 with C or better OR two completions of DCE 135 with C or better OR Visiting University Student
DCE	236	Somatic Practices II	Co-taught laboratory that explores foundations of somatic education, including principles of dance science, bodywork practices, Bartenieff Fundamentals, and Body-Mind Centering. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment. Nonmajors are welcome and encouraged to enroll as this course benefits anyone interested in dance, theater, music, social engagement, architecture and design, education, and health and wellness, among other areas.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
DCE	239	Afro-Latin Movement Pract II	Beginner/intermediate-level course designed and structured to build upon students who have completed Afro-Latin dance practices with the movement, historical context, culture and rhythms associated with Afro-Latin movement dance. Framework of movement involves reviewing beginner, then covers intermediate fundamentals in footwork and partner work that is learned in salsa technique progression modules. Along with progression modules, addresses through online readings and documentaries the history and social significance of Afro-Latin movement practices, such as salsa on2, cha cha and bachata. Through learning intermediate fundamentals and applying them through social dancing, students succeed and evolve in becoming knowledgeable and proficient social dancers within the salsa community. Expects students to not only have fun, but to integrate their learning within the ASU salsa community.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 139 OR Visiting University Student
DCE	240	Media for Dance	Computer applications for human movement modeling, digital video design and creation, sound composition, and the incorporation of multimedia design elements into online environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
DCE	260	2nd-Yr Creative Practices I	Explores concepts introduced in the first year of creative practice and further expands into the themes of analysis and investigation. Year two experience involves the investigation of learning to compose and construct choreographic material through individual, collaborative, improvisational, and group exploration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 161 with C or better OR Visiting University Student
DCE	261	2nd-Yr Creative Practices II	Continues developing students' awareness of their own creative process through individual and group projects involving problem solving, creative tasks, and reflection.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance major; DCE 260 with C or better
DCE	262	Rhythmic Theory for Dance I	Elements of music, music structures, and their relationship to dance. Emphasis on rhythmic analysis and dance accompaniment.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: BA Performance and Movement or BFA Dance major
DCE	270	Second-Year Seminar I	Continues developing tools and processes for reflection and critical thinking by identifying individual goals and objectives related to the students' current and future academic and professional careers.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 171 OR Visiting University Student
DCE	271	Second-Year Seminar II	Provides basic understanding of costume design, sound production, and interactive performance for dance.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance major; DCE 270 with C or better
DCE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	300	Dancing Histories	Critical investigation, especially in relation to gender, sexuality, race and class, of the history and historiography of vernacular and concert dance forms informing dance in America today. Focuses on Afro-Latin social dancing, ballroom, jazz, hip hop, ballet and modern/postmodern dance forms. Students learn about various ways of conducting research into dance history, including interviewing, researching using primary resources and performing scholarship.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 101, 105 or 107 with C or better

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DCE	301	Dance Analysis and Theory	Reflective inquiry into the nature of dance through the lenses of dance analysis and critical theory. Covers philosophical and theoretical issues raised by the study of dance in relation to specific historical and global contexts. Students learn how to describe and analyze the components and form of dance events, and interpret and evaluate works by applying feminist, queer, postcolonial and critical race theories, among others.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
DCE	302	History of American Hip Hop	The histories of hip hop dance are multilayered and multifaceted. There is not a singular history of hip hop dance, yet multiple entry points with multiple pathways of understanding to unpack the turbulent and linked histories of historically disenfranchised communities within the context of post-Civil Rights era United States. Designed as a seminar experience and operates from the assumption that hip hop dance is an extension of African diasporic traditions colliding with multiculturalism and youth culture. Serves as a portal to some of the histories, perspectives, individuals and stories that help shape the forms of hip hop dance expressed throughout this course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
DCE	303	The Body Condition(ed)	Examines contemporary practices of conditioning the body from a triangulation of perspectives: physical, social, and experiential. Enhances the ability to obtain a holistic understanding of how the self/social dynamic operates within the context of body conditioning. Designed for Non-Majors. Not Eligible for Dance Major Requirements.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	SB	Pre- or Corequisite(s): ENG 102, 105, or 108 OR Visiting University Student
DCE	306	History of Salsa: Afro-Latin	For students who are curious about salsa dancing and music, and who have interest in learning about its timeline and origins. Salsa is a migrational phenomenon, and the course traces the journey of multiple timelines that intersect with the global industry it has become today. Course theme revolves around the concept of salsa hybridity and the migrational dance that continues to evolve based on the interexchange of music and dance as it represents Afro-Latinness in the community. Content focuses on tracing the pathways of salsa and its origins from a dance and music perspective. Content also includes chronological investigative critique on performance from salsa congresses and festivals, and social dance videos from various video platforms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
DCE	324	Latin/Swing/Ballroom III	Refines dances learned in the intermediate level of Latin and ballroom dances, including foxtrot, waltz, salsa, cha cha, rumba, samba, west coast swing, bolero, tango, and swing. Prepares students to have a more advanced command of the complex rhythms and figures used in the major partnership dances.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 224 or DAN 294 (Latin/Swing/Ballroom II) OR Visiting University Student
DCE	330	3rd-Yr Movement Practices I	Focuses on the application of diverse movement forms and somatic studies in a range of performance contexts. These contexts may include live and mediated performance, community-based projects, pedagogy, analysis of movement forms in relation to musical compositions or the creation of new movement languages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance major; DCE 231 OR Visiting University Student
DCE	331	3rd-Yr Movement Practices II	Student will focus on the integration of diverse movement forms and somatic practices, as well as developing an in-depth understanding of a range of performance contexts practically and theoretically.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance student; DCE 330 with C or better
DCE	333	Hip Hop III	Underscores hip hop cultural practice as inherently interdisciplinary and as a culture expressed in various practices and forms. Students bring a solid foundation of different techniques, approaches and contexts of multiple hip hop dance styles to fluently and radically bridge their dance practice and movement as a tool to empower and transform.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): two completions of DCE 233 with C or better OR Visiting University Student
DCE	334	Postmodern Contemporary III	Advanced level of contemporary modern dance rooted in postmodern traditions. Prepares students for the professional field of dance while continuing to deepen their understanding of the history and social significance of the art form. Includes diverse movement styles that emphasize a nuanced approach to complex movement concepts and somatic principles. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): two completions of DCE 234 with C or better OR Visiting University Student

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DCE	335	Contemporary Ballet III	Advanced level for contemporary ballet furthers the study of ballet with a contemporary lens, allowing the dancer to develop and hone the relationship between the somatic experience and the ballet tradition. Employs further investigation of concepts as students continue to apply physical learning to deepen their understanding of the history and theory of contemporary ballet. Written work expands students' contextual understanding of ballet's most current choreographers and happenings. Faculty assess students' abilities within the first week of class to ensure this course is a good fit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance and Movement BA or Dance BFA major OR Visiting University Student
DCE	336	Somatic Practices III	Laboratory for somatic education that engages students in the theoretical and guided practical study of somatic movement practices. Facilitates students in exploring and addressing personal movement concerns and identifying areas for growth while expanding student understanding of the diversity of approaches to somatic studies. Focuses on body awareness, holding patterns, and movement re-education through various somatic practices drawn from Bartenieff Fundamentals, Body-Mind Centering, ideokinesis, Laban Movement Analysis, Dynamic Embodiment and other related somatic constructs.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours
DCE	338	Hip Hop Ensemble	Comprises dancers and musicians exploring the connections between hip hop musical practices and hip hop movement forms in a live improvisatory setting. Places special emphasis on hybridization, or the blending of musical traits and physical movement from two or more genres. Throughout the semester, builds cooperative practices with one another and experiments in a cross-disciplinary manner. Catalyzes and fosters ability to imagine innovative musical and movement practices within the hip hop aesthetic. Course serves as an "experiment lab" for music and dance students.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours; Corequisite(s): DCE 233 or DCE 333 OR Visiting University Student
DCE	339	Afro-Latin Movement Pract III	Advanced course brings an interdisciplinary approach toward performance, competitive and social partner movement that incorporates multiple contextual and Afro-Latin dance style perspectives to inform and critique one's own dance understandings. Provides a learning environment to investigate performance elements/theories and how they relate or contrast within the following dance styles: Afro-Latin Social which include NY Mambo, Cha Cha and Bachata.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum two completions: DCE 124, DCE 139, DCE 224, DCE 239, or DCE 324; Credit is allowed for only DCE 339 or DCE 394 (Afro-Latin Movement Practices III) or DCE 394 (Salsa III) OR Visiting University Student
DCE	350	Classroom Learning Through MVT	Explores theories of learning, thought development, and knowledge construction through aesthetic movement experiences. Students look to theories from the fields of aesthetics, phenomenology (study of lived experiences), somatics (study of the soma or body/mind), sociology and epistemology (theory of knowledge) to understand how the intertwined relationship of human thought development and movement patterning can affect children's learning and development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
DCE	354	Creative Approach Tchng Dan 1	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance BFA major
DCE	356	Creative Approach Tchng Dan 2	Explores creative strategies and methodologies for teaching dance to a variety of populations in diverse settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student OR Visiting University Student
DCE	357	Teaching Internship	Designed for dance education majors pursuing K-12 certification. Students complete a minimum of 25 internship hours in a secondary education classroom setting and are mentored by a high school dance teacher. The internship experience involves observing and assisting the mentor teacher in instructional activities, planning and teaching dance movement and creative practice lessons, choreographing a dance concert work at the internship site, and engaging in self-evaluation processes. Mentor teachers provide ongoing feedback to students in the course and complete two formal assessments. Creative work generated from the internship course is entered into a digital portfolio and shared with course peers and instructors at the end of the semester.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Dance BFA or Dance (Dance Education) BFA major; DCE 354 with C or better OR Visiting University Student

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DCE	360	Third-Yr Creative Practices I	Provides an orientation to the field of community dance practice. Students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance student; DCE 261 with C or better OR Visiting University Student
DCE	361	3rd-Yr Creative Practices II	Historical survey of music and compositional elements relative to dance. Emphasis on analysis of choreography from a musical standpoint.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite(s): Dance major; DCE 360 with C or better
DCE	370	Third-Year Seminar I	Provides an orientation to the field of community dance practice. Over two consecutive semesters, students investigate foundational theories pertaining to the development of community dance worldwide, are exposed to leaders in community dance practice, and have in-depth applied experiences interacting with different populations in a variety of community dance contexts.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 271 with a Y
DCE	371	Third-Year Seminar II	Hones skills in collaborative approaches, teaching, leading, and facilitation through partnerships with community organizations in the Phoenix metropolitan area. Students study community dance practices covering a range of creative process and community building tools that can be used in diverse settings. Applies research methods, such as data collection, analysis, and reflection, to measure the efficacy of community arts practices.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance major; DCE 370 with a Y.
DCE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	402	Ethnography of Dance Practices	Examines the field of ethnochoreology, ethnographic methods, and interpretive research practices. Develops critical writing, thinking, and viewing skills for comparative dance study.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): DCE 201 with C or better; ENG 102, 105, or 108 with C or better
DCE	403	Making. Living. Thriving Arts	This specialized course looks at how creative practices and research revitalize one another and how artists continue to sustain themselves by bringing imaginative responses to 21st-century living. This course grew out of a wish to share the diversity of approaches in the current dance curriculum at ASU. In this open forum setting, we may develop a vibrant community moving toward visionary, yet realistic ideals in the arts, experiential learning and how we creatively contribute and support ourselves in the world. Emphasizes arts making practices and being self-supporting with one's creative work. Throughout the class, various artist/scholars share their creative research work and how they sustain a life in the arts. Among others, their perspectives may include a variety of intersections such as social issues in health/wellness, equity and justice, entrepreneurial thinking, technology and social engagement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Herberger major or minor; minimum 60 hours
DCE	404	Dance and Ethics	Examines ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing
DCE	405	Writing the Creating Body	Invites students into theorizing the lived experience of the creator during the creative act. This inner landscape of the creator's experience is one of change and split-second decisions. Why capture this landscape? As an artist, students can find their own patterns of creativity. If they wish only to appreciate creative artists, their understanding of the creative process deepens and magnifies. To capture this inner landscape, students learn new writing skills within a robust framework that can analyze the fluidity of the creative act.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only DCE 405 or DCE 505 OR Visiting University Student

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DCE	433	Hip Hop IV	Focuses on application of various stylistic, technical and performance techniques expected at an advanced level in various forms of hip hop. Expects students to clearly articulate (in their words and bodies) hip hop as the embodiment of two or more dance styles rooted from the dance scenes of underground, street and/or club dance counterculture. Deepens understanding of the form through performance of the movement within cultural community context, "the studio," and within other community-oriented settings. It is through performing in these venues where students draw connections to help develop a nuanced mode of training within the studio.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 333 with C or better; two completions of DCE 338 with C or better OR Visiting University Student
DCE	435	Contemporary Ballet IV	Focuses on the students' individual application of contemporary ballet technique at an advanced level. Expects students to have an advanced, embodied understanding. Draws on a variety of traditional, codified and contemporary approaches to ballet as well as somatic techniques to enhance students' ballet proficiency through performing movement that is athletically challenging, nuanced and rhythmically complex. Emphasizes musicality and artistry throughout class. Engages students in critical thinking and reflection in relationship to their dancing and dance learning. Additionally, students engage with class concepts creatively through improvisation and composition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 335 with C or better
DCE	438	Dance Theatre Performance/Prod	Project-based class gives the opportunity to explore the collaborative approach of producing and creating work. Students conceive and construct the lighting, sound, costumes, media and movement designs for several projects. All levels are welcome.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA, Film and Media Production BFA, Performance and Movement BA major, Dance minor, or BIS Dance concentration OR Visiting University Student
DCE	439	Afro-Latin Movement Pract IV	Focuses on the students' individual application of Afro-Latin salsa/mambo technique at an advanced level. Specific to undergraduate students who have completed previous coursework and are ready to focus on individual research, investigation and critique in Afro-Latin movement practices. With an expected advanced understanding of Afro-Latin rhythms and social partnerwork vocabulary, students synthesize past knowledge in previous courses and begin framing questions on areas of expertise to work in an Afro-Latin centric process that leads toward a finding, performance or finished/unfinished work.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): two completions of DCE 239 with C or better; two completions of DCE 339 with C or better OR Visiting University Student
DCE	460	Transition Project I	Original choreography for group performance with analysis and critique of problems encountered in production.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 361 with C or better OR Visiting University Student
DCE	461	Transition Project II	Original research that integrates dance and a related field of interest. Includes production of written document and public presentation. Fall semester must be completed before spring registration. May be repeated for a total of 4 semester hours.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Dance BFA or Performance and Movement BA major; DCE 460 with C or better
DCE	470	Fourth-Year Seminar	Explores and investigates the larger world of dance as it pertains to transitioning out of the university environment into professional lives. Discussion revolves around career opportunities, options and finding potential work synergies that will parlay into meaningful and exciting lives.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: BFA Dance major; DCE 371; Credit is allowed for only DCE 470 or 494 (4th-Yr Seminar)
DCE	482	The Alexander Technique	Mixed-level course open to students from across the Herberger Institute for Design and the Arts that covers the basic principles of the Alexander Technique (AT). The AT is a gentle reeducational process that promotes increased awareness and ease in movement. With a fundamental understanding and application of the AT principles, explores students' individual artistic practices and everyday patterns of movement through experiential research and application.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Herberger major; min junior standing; Credit is allowed for only DCE 482 or DCE 394 (Alexander Technique:Application&Mvmt Research) or DCE 582 or DCE 598 AlexanderTechnique:Applic&Mvmt.Rsrch for Grad St) OR Visiting University Student
DCE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
DCE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student

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DCE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
DCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
DCE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
DCE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	501	Philosophy of Dance	Analyzes traditional and contemporary theories of dance with regard to issues of expression, form, and meaning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	502	Cultural Concepts of Dance	Examines the close connections among culture, dance, and movement through writings in cultural theory, dance ethnology, and philosophy.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	504	Dance and Ethics	Examination of ethical issues as they relate to the field of dance, including the following: the ethical treatment of dancers within educational and professional institutions; the ethical creation of dances sensitive to copyright/appropriation concerns as well as issues of form and content; the ethical engagement of the arts by the state; the ethical use of dance in trauma recovery and community building.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	505	Writing the Creating Body	Dives deep into the nexus of the creative process to explore more about student's own understanding or that of another artist. Applies frameworks to investigate the dynamic relationships among artist, audience and creative project that occur during the flow of creating. Lens is the embodied perspective of the creative artist with writing techniques honed for how to capture the inner experience of creating.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student; Credit is allowed for only DCE 405 or DCE 505
DCE	530	Somatic Movement Inquiry I	Explores somatic processes and frameworks as modalities for inquiry and research. Students engage in psychophysical investigations of specific somatic movement practices and frameworks, including Laban Movement Analysis, Body-Mind Centering and Dynamic Embodiment, as well as other phenomenological and epistemological frameworks for learning in and through the body. Approaches classroom experiences from theoretically grounded and contextualized perspectives that address through practice current somatic and epistemological thinking. Individual sessions with faculty support the deepening and exploration of personal movement inquiry and somatic research.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	531	Somatic Movement Inquiry II	Explores somatic processes and frameworks as modalities for inquiry and research. Students engage in psychophysical investigations of specific somatic movement practices and frameworks, including Body-Mind Centering, the Alexander Technique, Laban Movement Analysis and Dynamic Embodiment, as well as other phenomenological and epistemological frameworks for learning in and through the body. Approaches classroom experiences from theoretically grounded and contextualized perspectives that address through practice current somatic and epistemological thinking. Individual sessions with faculty support the deepening and exploration of personal movement inquiry and somatic research.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	534	Postmodern Contemporary	First-year graduate level of contemporary modern dance rooted in postmodern traditions. Prepares students for the professional field of dance while continuing to deepen their knowledge of the history and theory of the practice. Includes diverse movement styles that emphasize a nuanced approach to complex movement concepts and somatic principles. Expects students to take a self-directed approach to course content.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance graduate student
DCE	535	Contemporary Ballet	Graduate-level theoretical study and movement practice of contemporary ballet for contemporary dancers.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: MFA Dance student

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DCE	536	Somatic Practices	Laboratory for somatic education that explores the foundations of movement, voice, expression and spatial awareness. Open to nonmajors, the class welcomes and encourages the participation of students from a wide variety of disciplines. Taught through the principles of specific somatic lenses (e.g., the Alexander Technique, Bartenieff Fundamentals, and Body Mind Centering), the course highlights how embodied awareness affects artistic process and choice making, as well as enhancing physical capacities, kinesthetic intelligence, and the refinement of performance and technical skills. Emphasizes developing a holistic perception of ourselves, our relation to one another, and to the environment. Integrated lecture/lab. Prerequisite(s): degree- or nondegree-seeking graduate.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only DCE 536 or DCE 598 (Movement Language Sources) or (Somatic Practices)
DCE	537	African&Diaspora Movement Prac	Investigates and integrates historical and cultural contexts for West, Central, and South African and Post-African (diasporic) movement practices. Engages movement and physical articulation as tools to examine specific dance cultural knowledge and demonstrate/embod techniques representing that cultural knowledge.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance major; Credit is allowed for only DCE 537 or DCE 598 (African Diaspora Movement Practices)
DCE	538	Dance Theatre	Performance in specially choreographed dance productions.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student
DCE	540	Issues in Media for Dance	Introduces desktop multimedia as it relates to dance creation, production, education, and research.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	543	Sound Design for Dance	Audio mixing for analog/digital recording and editing.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Dance majors
DCE	554	Teaching Praxis I	Addresses the theoretical basis and practical application of principles for teaching dance disciplines in a postsecondary setting. Includes discussion, co-teaching and individual teaching projects and sessions, practical application of course readings, and guest speakers.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	560	Grad Creative Practices I	Covers the philosophy and the breadth of process-oriented possibilities for art-making and provides opportunities to deepen and define personal artistic practices.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	561	Grad Creative Practices II	Continues as a laboratory for practice-led research offering further exposure to a range of practices in dance making and artistic inquiry, including sound design. Supports students' thinking about their evolving art making methodologies and contextualization of their artistic practice in the current field.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance graduate student; DCE 560
DCE	563	Rhythmic Awareness	This course focuses on the kinesthetic aspects of weight, space, and time. It is opportunity for individual exploration as well as an ensemble experience, a chance to come together as a group through the communicative nature of sound, movement, and visual patterns.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance MFA student
DCE	570	Graduate First-Year Seminar I	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices; present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world. Seminar.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Dance Graduate student; Credit is allowed for only DCE 570 or DCE 591 (1st Year Graduate Seminar)
DCE	571	Graduate First-Yr Seminar II	Part of a four-semester sequence that offers a cohort experience to increase awareness of current global dance practices; present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	582	The Alexander Technique	Mixed-level class open to students from across HIDA, covers the basic principles of the Alexander Technique (AT). The AT is a gentle reeducational process that promotes increased awareness and ease in movement. With a fundamental understanding and application of the AT principles, explores students' individual artistic practices and everyday patterns of movement through experiential research and application	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Herberger graduate student; Credit is allowed for only DCE 482 or DCE 394 (Alexander Technique:Application&Movement Research) or DCE 582 or DCE 598 (AlexanderTechnique:Applic&Mvmt.Rsrc h for Grad St)
DCE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DCE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	634	Postmodern Contemporary	Preparation in the performance and comprehension of professional-level modern dance for second-year graduate students. 6 hours weekly.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Dance Graduate student
DCE	654	Teaching Praxis II	Applies current learning theories and psychomotor development approaches to teaching practices and curriculum design for a variety of contexts and populations ranging from early childhood to late adulthood and community to institutional settings. Students develop and implement pedagogical praxis frameworks that stem from their developing teaching perspectives, values and objectives. Course experiences are designed to help students effectually integrate pedagogical theory and practice toward successful and meaningful ends.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): DCE 554; Credit is allowed for only DCE 654 or DCE 598 (Apprenticeship)
DCE	656	Teaching Praxis III	Prepares students to teach in secondary dance education settings; to develop and teach higher education dance pedagogy, curriculum development, and teacher prep courses that meet professional teaching standards, state and national learning standards and requirements and institutional benchmarks. Participants develop specific teaching strategies and frameworks, as well as gain practical experience, within the settings of secondary dance education and university teacher preparation courses. Utilizes Laban Movement Analysis and other social somatic frameworks as inroads into teaching, curricular design and student assessment. Students help instruct and mentor undergraduate dance majors in a secondary dance teaching methods course. Illuminates current sociocultural and educational issues that influence teaching and learning in secondary dance classrooms, and addresses strategies and requirements for pre-service teacher preparation courses.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): DCE 554; Credit is allowed for only DCE 656 or DCE 680 (Secondary Teaching Praxis and Teacher Training Frameworks)
DCE	657	Pedagogical Res and Fidwrk	Provides a theoretical and practical foundation for students to engage in pedagogical research and fieldwork. Places primary emphasis on investigating and applying qualitative methods to processes of pedagogical inquiry and research. Students are mentored through processes of gathering information, focusing, designing, implementing and assessing an educational research project through fieldwork in a context of their choosing. The outcomes of students' fieldwork projects are documented and articulated in the forms of a scholarly research paper and live research presentation.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): DCE 554
DCE	660	Grad Creative Practices III	Artistic research through the practices of choreographic choice making, exploration, and experimentation of integrated environments and interdisciplinary collaboration.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student
DCE	661	Graduate Creative Practices 4	Culmination of a four-semester Creative Practices sequence, focusing on articulating individual creative practices and identifying the needs of each student relative to their Applied Projects. Students are also responsible for understanding the content and requirements for the selected modules of this course.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Dance student

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DCE	670	Graduate Second-Year Seminar I	Part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, presents opportunities for dialoguing about topics significant to fulfilling degree requirements and promotes success in the dance program as well as to facilitate transition into the professional world. Reflection is a key component of the School of Dance curriculum; develops ability and skills in analysis, but more importantly builds awareness of intuitive and habitual patterns of response to new stimuli. The Seminar is a key moment each week to develop a community of inquiry amongst peers.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: MFA Dance student; Credit is allowed for only DCE 591 (2nd Yr Seminar) or DCE 670
DCE	671	Graduate Second-Yr Seminar II	The Second-Year Graduate Seminar is part of a four semester sequence that offers a cohort experience to increase awareness of current global dance practices, present opportunities for dialoguing about topics significant to fulfilling degree requirements and that promote success in the dance program as well as to facilitate transition into the professional world.	N	SEM	N	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Dance MFA student
DCE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
DCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): COE 501 or DCI 510 with B or better
DCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student

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DCI	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
DCI	701	Transdisciplinary Seminar I	Covers the "grand challenges" in education and other fields, and the centrality of interdisciplinary approaches in addressing these challenges.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student; Credit is allowed for only DCI 701 or DCI 791 (Transdisciplinary Seminar)
DCI	702	Transdisciplinary Seminar II	Guides PhD students to study, understand and solve multiple aspects of the problem area in a transdisciplinary fashion, approaching the problem from multiple theoretical perspectives, methodological practices and disciplines.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student; Credit is allowed for only DCI 702 or DCI 791 (Transdisciplinary Seminar II)
DCI	706	Academic Writing	Covers the practices of writing for academic purposes, specifically with an aim toward writing for publication.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student; Credit is allowed for only DCI 706 or DCI 791 (Academic Writing)
DCI	707	Proposal Writing	Covers proposal writing for students seeking funding to support scholarly initiatives across research designs and methods.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): COE 503; Credit is allowed for only DCI 707 or DCI 791 (Proposal Writing - Seminar) or DCI 791 (SchlrlyPractices Smnr: Proposal Writing)
DCI	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DCI	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student
DCI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DCI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Post Baccalaureate Undergraduate student
DNP	601	Theoretical Foundations	Examines philosophical foundations of advanced nursing practice by analyzing interrelationships among theory, philosophy, practice, and research.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	602	Evaluating Research Practice	Provides opportunities for graduate students to develop the knowledge and skills to critically analyze scientific literature and research for application to practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College graduate student
DNP	603	HealthEquitySocialJustice	Focuses on the application of theories related to social justice and knowledge of social determinants of health to the role of the graduate prepared nurse for the purpose of advocating for health equity and creating innovative methods of addressing social injustices to improve health outcomes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to graduate Nursing program

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DNP	604	Pathophysiology/Lifespan	Core course focuses on human pathophysiology and concepts of genetics for advance practice nursing.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS Prerequisite(s): Adv Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Fam NP cert, Fam Psych Mntl Hlth NP cert, Ped NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Practice) MS or Nursing (Nursing Ed) MS
DNP	605	Health Assessment Lifespan	Advanced health assessment skills, including history-taking strategies and physical, functional, developmental, and psychosocial assessment.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Adv Nurs Prac (AcuteCare or Adt-Geron) or Fam NP or Fam Psy Mntl Hlth or Pediatric NP or Wmn's Hlth NP stdnt or Acute Care Ped NP or Adt Geron NP or Fam NP or Fam Psych Mntl Hlth NP or Pediatric NP or Wmn's Hlth NP Cert
DNP	606	Principles Peds Acute Care I	Provides the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 607
DNP	607	AdvPeds Acute Care Practicum I	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): graduate student enrolled in Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP program or Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) certificate; Corequisite(s): DNP 606
DNP	608	Pharmacotherapeutics Lifespan	For advanced practice nurses, expands theoretical and evidence-based knowledge and promotes synthesis of pharmacotherapeutic concepts and principles across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP or Acute Care Ped NP cert, Adult Geron NP cert, Family NP cert, Fam Psych Mntl Hlth NP cert, or Women's Hlth NP cert, or Nursing MS or Nursing (Entry to Nursing Pract) MS or Nursing (Nursing Ed) MS student
DNP	609	Advanced Practice Nursing Role	Focuses on the examination and implementation of the advanced practice nursing (APN) role. Presents historical and contemporary social and political influences on the development and implementation of the APN role and the circumstances prompting the movement of education for advanced practice to the doctoral level. Emphasizes the analysis of the role the APN and the Doctor of Nursing Practice prepared provider within the greater health care system. Explores issues and challenges related to advanced practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Doctor of Nursing Practice student
DNP	610	PrinciplesAdvEmergencyNursingI	Students acquire knowledge that is relevant to the management of common medical emergencies and management of patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 633; Corequisite(s): DNP 611
DNP	611	ENP Practicum I	Demonstrates management strategies and applies selected practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 633; Corequisite(s): DNP 610
DNP	612	Pediatric Palliative Care	Examines research, theory and principles for end of life and palliative care in infants, children, adolescents and young adults (birth to age 21 years).	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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DNP	613	Women's Health Promotion I	Didactic course focuses on theories of health behavior, health promotion, disease prevention and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Women's Health DNP student; DNP 602 with B or better; Corequisite(s): DNP 614
DNP	614	Women's Health Practicum I	Clinical assessment and education of women across the lifespan for the purposes of health promotion and disease prevention.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 613
DNP	615	Mgmt Women's Health Problems	Focuses on management of nursing care for high-risk perinatal women and women with common health problems.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 616
DNP	616	Women's Health Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 615
DNP	617	Mgt Complex&Chron Disease Wm	Didactic course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health status across the lifespan and patient education.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 618
DNP	618	Womens Health Practicum III	Clinical course focused on using current evidence-based research as the context for the assessment and management of complex and chronic reproductive and gynecologic health states across the lifespan and patient education.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Women's Health student; Co-requisite: DNP 617
DNP	619	Principles Peds Acute Care II	Continues to provide the theoretical basis for the assessment and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings. Emphasizes recognition of the dynamic and fluctuating health status of emergent pediatric health conditions by body system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 620
DNP	620	AdvPedsAcuteCarePracticuml	This clinical course focuses on the assessment, diagnosis and management of infants, children, adolescents and young adults with select complex acute, critical and chronic health conditions in tertiary, emergency and specialty inpatient/outpatient health care settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-7		Prerequisite(s): DNP 606; DNP 607; Corequisite(s): DNP 619
DNP	621	Health Assessment Skills	Skill-based course focuses on advanced clinical skills including suturing, splinting, x-ray, ECG and advanced lab interpretation.	N	LEL	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): DNP 605
DNP	623	Adult Gero Health Promotion	Introduces adult-gerontology health promotion and disease prevention emphasizing principles of evidence-based practice in clinical and community settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 605; Corequisite(s): DNP 624
DNP	624	Adult Gero Hth Promo Practicum	Clinical practicum designed to apply principles of evidence-based practice in health promotion and disease prevention in clinical and community settings.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (Adult-Gerontology Nurse Practitioner) major. Corequisite(s): DNP 623
DNP	625	Mgmt Common Prob Adult-Geron	Focuses on the theory, research and application of evidence-based practice in the care of adolescents, adults and older adults with common health alterations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 623; Corequisite(s): DNP 626
DNP	626	Adult-Geron Common Prob: Pract	Clinical practicum applies principles of evidence-based practice in primary care management of adolescents, adults and older adults with common health alterations.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 623; Corequisite(s): DNP 625
DNP	627	Mgm Complex Adult-Geron:Theory	Focuses on theory, research and application of evidence-based practice in care of adolescents, adults and older adults with complex health alterations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 625; Corequisite(s): DNP 628
DNP	628	Mgmt Complex Adult-Geron:Pract	Clinical practicum applies principles of evidence-based practice in primary care management of adolescents, adults and older adults with complex health alterations.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 626; Corequisite(s): DNP 627
DNP	630	PrinciplesAdvEmergencyNursell	Students acquire advanced knowledge that is relevant to common medical and traumatic emergencies. Focuses on preparing the student to implement the role of the advanced practice emergency nurse. This knowledge is applied in the required clinical course.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 610; Corequisite(s): DNP 631
DNP	631	ENP Practicum II	Demonstrate advanced management strategies and applies advanced practice models for the delivery of high-quality care to patients with unexpected illness in pre-hospital, urgent care, and emergency department settings. Focuses on the delivery of health care services to patients across the lifespan in pre-hospital, urgent care, and emergency department settings.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP 610; Corequisite(s): DNP 630

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DNP	633	Family Health Promotion	Focuses on concepts and strategies to promote, manage, and maintain health of children, adults, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 634
DNP	634	Family Promotion Practicum	Clinical application of theories, concepts, and principles in the care of children,	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: Advanced Nursing Practice (Family Nurse Practitioner) major; Co-requisite: DNP 633
DNP	635	CommonFamilyHealthProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of acute and common health problems in family practice across the life span.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 636
DNP	636	CommonFamilyPracticum	Clinical application of theories, concepts, and research related to the management of acute and common problems in family practice across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 635
DNP	637	ComplexChronicFamilyProblems	Didactic course that integrates research into clinical decision making as the context for the assessment and management of complex and chronic problems in family practice across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 638
DNP	638	ComplexChronicFamilyPracticum	Clinical application of theories, concepts, and research related to the management of complex and chronic problems in family practice across the life span for Family Nurse Practitioner role specialty.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Family Nurse Practitioner); Co-requisite: DNP 637
DNP	640	Adv Human Pathophys Pediatrics	Didactic course for pediatric nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in pediatric patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner)
DNP	641	Health Assessment Peds	Skills-based advanced health assessment course that includes history-taking strategies and physical, functional, developmental, psychosocial health assessment of children (birth-21).	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner certificate
DNP	642	Pharmacology Pediatric	Applies evidence-based pharmacotherapeutic principles to disease treatment and health promotion and maintenance for pediatric patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate
DNP	643	Pediatric Well Child	Offers information for theory-based developmental care of well children. Includes anticipatory guidance for parents and/or children/teens.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Ped Nurs Prac or Pediatric Nurse Practitioner certificate; Corequisite(s): DNP 644
DNP	644	Well Child Practicum	Clinical application of theories, concepts and principles as they relate to the developmentally based care of the well child.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Prerequisite(s): DNP Advanced Nursing Practice (AcuteCare or Pediatric Nurse Practitioner) student or Acute Care Pediatric Nurse Practitioner or Pediatric Nurse Practitioner graduate certificate student; Corequisite(s): DNP 643
DNP	645	Common Problems Pediatrics	Provides health promotion and disease prevention strategies for the advanced nursing care of all children and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 646
DNP	646	Common Problems Peds Practicum	Facilitates development of advanced clinical skills in the assessment and management of child health, health surveillance and promotion.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 645
DNP	647	Complex Problems Pediatrics	Third pediatric didactic course focuses on assessment and management of childhood complex and chronic health problems and special health conditions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 648
DNP	648	Complex Chronic Peds Practicum	Clinical course assists students in developing advanced clinical skills in decision making with chronically ill or special needs pediatric patients.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Pediatric Nurse Practitioner); Co-requisite: DNP 647

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DNP	649	Adv Phys	Focuses on integrating the structure and function, including the molecular and cellular levels, that are vital to the overall functioning of the human across the lifespan. It is highly encouraged that students taking this course have a basic understanding of physiological principles to be able to learn advanced concepts covered in this course. It serves as an important fundamental foundation required for advanced practice providers and helps support students in their progression into advanced pathophysiology and clinical specialty course work. Examines the complex interactions of multiple body systems in helping to maintain homeostasis and proper body functioning to promote a foundation for health. Uses clinical scenarios to promote innovative ways to integrate the complex physiological concepts.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Acute Care Pediatric Nurse Practitioner) DNP student or Acute Care Pediatric Nurse Practitioner certificate student or Emergency Nurse Practitioner certificate student
DNP	650	Adv Human Pathophys Neonates	Didactic course for neonatal nurse practitioner students focuses on applying concepts of human pathophysiology and genetics in neonatal patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	651	Health Assessment Neonatal	Skill-based course focuses on advanced health assessment skills, including history-taking strategies and the physical, functional, genetic, developmental, and psychosocial/cultural health assessment of neonates.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Neonatal Nurse Practitioner) DNP
DNP	652	Neonatal Pharmacotherapeutics	Focuses on the application of knowledge of pharmacological principles in the treatment of diseases and promotion of health for neonates and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	653	Dev Fam Health Promo: Neonatal	Concepts, theories, interventions, and research related to the promotion, management, and maintenance of physical, behavioral, and developmental needs of at-risk newborns and infants and their families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 654
DNP	654	Neonatal Practicum I	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 653
DNP	655	Mgmt Common Neonatal Problems	Proactive neonatal theory course focusing on the concepts, theories, and research related to acute and chronic health deviations of neonates and infants.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner) Co-requisite: DNP 656
DNP	656	Neonatal Practicum II	Clinical application of theories, concepts, and principles in area of concentration.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 655
DNP	657	Management of Complex Neonates	Examines the application of knowledge of complex, multi-system alterations in neonatal health from a theoretical and research perspective in preparation for clinical practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner)
DNP	658	Neonatal Practicum III	Develops and applies advanced neonatal assessment, clinical decision making, and management skills to complex health alterations in at-risk neonates to include cultural, ethical, legal, and advocacy issues.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Advanced Nursing Practice (Neonatal Nurse Practitioner); Co-requisite: DNP 657
DNP	659	Embryology and Genetics	Prepares advanced practice nurses to use embryology, genetics, and physiology concepts within the nursing process in the care of pediatric and neonatal patients.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Pediatric NP, or Women's Health NP) DNP student
DNP	660	Neuropsychopathology Lifespan	Manifestations of altered neurophysiology and psychopathology over the lifespan. Uses evidence-based support for theoretical views of psychiatric disorders to analyze the relationships of neuropsychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Child and Adolescent Mental Health Intervention or Family Psychiatric and Mental Health Nurse Practitioner
DNP	661	EthicsAdvancedNursingPractice	Focuses on the ethical implications in the role of the advanced practice nurse and provides information on ethics and how professional and personal values relate to advanced nursing practice. This course meets the Essentials of Doctoral Education as defined by the American Association of Colleges of Nursing (AACN).	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice graduate student
DNP	671	Adv Mental Health Assessment	Focuses on comprehensive mental health assessment of psychiatric disorders occurring in children, adolescents, and families.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner

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DNP	672	Psychopharmacology Lifespan	Focuses on evidence-based use of medications for mental health disorders across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner
DNP	673	MH Promotion Lifespan	Focuses on evidence-based interventions to promote mental health across the lifespan.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Family Psych & Mental Health Nurse Practitioner) DNP student; DNP 602 with B or better; Corequisite(s): DNP 674
DNP	674	MH Promotion Practicum	Clinical experiences to become skilled in assessment and evidence-based individual intervention of mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 673
DNP	675	Common MH Disorders	Emphasizes the assessment and evidence-based management of common mental health disorders across the lifespan.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner Co-requisite: DNP 676
DNP	676	Common MH Disorders Practicum	Clinical experiences necessary to become skilled in the assessment and evidence-based management of the most common mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Corequisite: DNP 673
DNP	677	Complex MH Lifespan	Focuses on modalities of evidence-based treatment with children, adolescents, adults, and families with complex and/or chronic psychopathology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 678
DNP	678	Complex MH Practicum	Clinical experiences in the assessment and evidence-based management of the most complex and chronic mental health disorders across the lifespan.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2-6		Pre-requisite: DNP Adv Nurse Pract (Family Psych & Mental Health Nurse Practitioner) or (Adult Psych Mental Health Nurse Practitioner) or Family Psychiatric and Mental Health Nurse Practitioner; Co-requisite: DNP 677
DNP	679	BiostatPrincipleStatsInference	Examines principles of statistical inference and their application to the analysis and interpretation of epidemiological, psychosocial, medical, nursing, and healthcare data.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing graduate student
DNP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	682	Geriatric Health Promotion	Examines theoretical perspectives in aging and cultural and contextual approaches for health promotion in older adults.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688
DNP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
DNP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DNP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DNP	703	Scholarly Writing	Provides a review of principles of scholarly and professional writing, plagiarism and APA.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing graduate student
DNP	704	Principles Evidence Based-Care	Foundational course focuses on the evidence-based process and understanding of evidence-based practice principles assist advanced practice nurses and other healthcare professionals in clinical decision making in order to provide best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisite: Doctor of Nursing Practice student
DNP	705	Health Care Outcomes Mgmt	Outcomes management methodology supports implementation of evidence-based practice and measurement of both patient and health care system outcomes attributed to adoption of best practices.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student; DNP 704
DNP	707	Disseminating Evidence	Focuses on methods for dissemination of evidence to advance best practice within local, regional, and/or national settings, as well as advancement of EBP in health policy and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): DNP 705
DNP	708	Systems Thinking Complex HlthCr E	Studies basic and advanced systems principles as they relate innovation to the United States health care system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	709	Individual & Innov Ldrshp Hlth	Introduces the role of the innovator, including the essential behaviors of risk taking, managing workload, and addressing the challenges of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	710	ClinPerspectBiomedDeviceDesign	Examines clinical perspectives on principles of biomedical device design, including interprofessional engagement with engineering and regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice student
DNP	711	Healthcare Policy & Innovation	Introduces the political, organizational, and economic dimensions of healthcare policy with emphasis on strategies for innovative policy and practice.	N	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Doctor of Nursing Practice student
DNP	712	Clinical Residency&Management	Demonstrates DNP competencies through portfolio documentation of clinical learning experiences and implementation of the DNP Evidence-Based Clinical Applied Project. Doctoral students submit the DNP Portfolio in partial fulfillment of the degree.	N	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Doctor of Nursing Practice student
DNP	713	Org Cultures in Health Care	Analyzes culture, organizational implications and relationships to change and innovation in health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Doctor of Nursing Practice (AcuteCare or Adult-Gerontology or Advanced NP or Family NP or Family Psychiatric Mental Health or Innovation Leadership or Pediatric NP or Women's Health NP) student
DNP	714	Prof Relationship in Healthca	Analyzes professional relationships within healthcare organizations and evidence-based strategies to improve communication, coordination, and collaboration.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice (Adult-Gerontology NP, Family Psychiatric Mental Health NP, Family NP, Innovation Leadership, Pediatric NP, or Women's Health NP) DNP student
DNP	715	Dynamic Info in Health Care	Analyzes and applies multiple sources of information for health care leaders across the continuum of evidence including research, evidence-based practice, translational research, improvement science and quality improvement.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice DNP student
DNP	716	Innov Leadership Health Care	Analyzes leadership theories in the creation of complex health care system innovation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Advanced Nursing Practice DNP student or Advanced Nursing Practice (Innovation Leadership) DNP student
DSC	100	ASU Design Experience	Covers ASU's mission as the New American University, the importance and benefits of an entrepreneurial approach to problem solving, solutions to sustainability challenges, and the importance of social embeddedness. Additionally, through various course discussions and assignments, students examine the concept of academic integrity and its potential impact on their future, gain awareness of the value of engaging in research activities, and learn about taking an interdisciplinary perspective.	N	REC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): BS, BSD or BSLA Design School major. Credit is allowed for only DSC 100 or 194 (ASU Design Experience) OR Visiting University Student
DSC	101	Design Awareness	Surveys cultural, global, and historical context for the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & G	

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DSC	102	Introduction to Design	Introduces design, with an emphasis on understanding the process and principles by which design shapes our world.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
DSC	236	Intro to Computer Modeling	Computers in design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Industrial Design major; passed milestone OR Visiting University Student
DSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
DSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
DSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
DSC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design or PhD in Environmental Design & Planning student
DSC	501	Qualitative Research in Design	Theory and application of qualitative research. Emphasizes using ethnography to identify and specify innovative concepts and strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design major
DSC	520	Contemporary Design Issues	Issues influencing contemporary design such as sustainability, globalization, education, gender, collaboration and emotion.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	530	Basic Modeling Techniques	Demonstrates how to create efficient repeatable and safe operations utilizing power tools. Instruction on basic principles of woodworking, material selection, re-saw, dimensioning, tool selection. Emphasizes cut lists, planning parts, basic tool knowledge, measuring and marking, and joinery.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Design School graduate student; Credit is allowed for only DSC 530 or DSC 494 (Basic Model Making Techniques) or DSC 598 (Basic Model Making Techniques)
DSC	531	Basic Mold Making and Casting	Explores basic knowledge on mold making and cold casting. Emphasizes material selection, planning, form-making and project planning. Requires students to execute two molds using appropriate techniques and methods.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Design School graduate student; Credit is only allowed for DSC 531 or DSC 598 (Cold Casting and Mold Making)
DSC	540	Biomimicry in Design	Explores and applies the biomimicry thinking framework in the field of design in order to arrive at sustainable design solutions that create conditions conducive to all life. Through hands-on activities, games, workshops, lectures, field trips, outdoor adventures, discussions, assignments and readings, introduces students to the biomimicry thinking methodology that helps find sustainable solutions to current problems found at various scales within any design disciplines.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts School masters student; Credit is allowed for only DSC 494 (Biomimicry in Design) or DSC 540 or DSC 598 (Biomimicry in Design)
DSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Master of Science in Design student
DSC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD or Design (Inter Design) MSD student
DSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
DSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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DSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design, Master of Interior Architecture, Master of Science in Design, or Master of Visual Communication Design major
DSC	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
DSC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Pre-requisite: Design (Graphic Design) MSD, Design (Indus Design) MSD, or Design (Inter Design) MSD student
DSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1		Prerequisite(s): degree- or nondegree-seeking graduate student
DSE	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
DST	101	Intro to Disability Studies	Provides an introduction to key concepts, methods, questions and themes in the field of disability studies, including an overview of the focused, unequal treatment experienced by people with disabilities. There are economic, political, social and cultural factors that should be considered by a society which normally addresses disabled bodies through medical frameworks. Debates ethical questions concerning genetic testing, selective abortion and disability therapies. Discusses how social inequalities of class, race, nationality, sexuality and gender relate to the experiences of the disabled.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	
DST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
DST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	322	Implications of Disability	There are many types of disability, and oppression results from the socially constructed definition of disability. Provides a careful review of the many forms of disability, considering functional restrictions created within society and the impact of cultural limitations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
DST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		

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DST	458	Disability & Comm Advocacy	Disability advocacy historically and in the contemporary context. Historical and legal approaches to disability advocacy helps frame students' interrogation of contemporary disability advocacy issues and movements. Addresses disability advocacy issues including questions about the meaning of disability, the ends and forms of advocacy, and the politics of dis/ability. Emphasizes the communication practices that have constructed and debated the meanings, ethics and ends of disability advocacy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 2.00 GPA
DST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
DST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
DST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
DST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
DST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
ECD	211	Dev Child: Thry/Prac Pre-Grd3	Examines process of physical, social, emotional, cognitive, language, and literacy development of young children; includes observation, practical application, fieldwork.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
ECD	220	Intro to Nutrition, Hlth&Safety	Emphasizes providing proper nutrition, promoting a safe but challenging learning environment, and becoming knowledgeable of a child's health status. Also covers practical applications for assisting young children to develop good habits and attitudes and to assume lifelong responsibility for their own well-being.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
ECD	302	Found of Early Childhood Educ	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	310	Appl Early Child Development	Conveys knowledge of how development is both unique and interconnected. Takes a highly applied approach to build participants' knowledge, recognition and use of evidence-based practices within preschool classrooms that support children's development, both within and across domains. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	312	Social/Emotnl Fndtns of Learn	Foundations of early social development and evidence-based practices for promoting social-emotional development; young children's understanding, interactions, and relationships to the social world.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	313	Technology in Early Child Ed	Evaluates technology and technological learning tools for early childhood classrooms; integrates technology and its tools into students' learning. Lecture, discussion, active participation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	315	Clsrm Orgnztn/Gdnce Yng Chld	Theories and strategies to guide children's development toward becoming self governing; typical and atypical behaviors; implementing age-appropriate classroom management techniques that foster individual, social, and academic competence.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	316	Teacher Rsrch:Studyng Children	Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	321	Emerging Language and Literacy	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student

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ECD	322	Cog Gen Knwldg Sci Mth Lgc Rsn	Increases students' knowledge of and ability to implement high-quality strategies that support the development of children's mathematical, scientific and logical reasoning in developmentally appropriate ways. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	323	Bldng Home/Schl/Cmmnty Ptnrs	Knowledge and skills to facilitate positive and continuous family-school partnerships; family background, social context, family involvement, and current research on family-school interaction and academic success.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): admission to the Professional Program
ECD	324	Social Studies/Creative Arts	Social studies and creative arts standards, curriculum, and instructional and assessment strategies in an integrated social studies and creative expression curriculum for children birth through grade 3.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	325	Support Dual Language Learners	Increases students' knowledge of the language development of Dual Language Learners (DLLs), the role of home language in assessment and instruction, as well as knowledge and application of instructional practices to support DLLs' oral language and emergent literacy practices. Students design and implement activities for working with young children who are DLLs and their families. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): ECS 321
ECD	327	Becoming a Teacher Leader	Explores the perspective that effective early childhood professionals are self-aware, culturally competent leaders who practice ongoing reflection and growth. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
ECD	341	Admstrtn/Evltn of EC Prgms	Administration and evaluation of early childhood programs. Emphasizes planning and evaluation; regulations; health, nutrition, and safety; operations, budgeting, and supervision of personnel.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	396	Student Teaching: ECD Birth-5	Student teaching in early childhood education classrooms ages birth to 5; synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECD	406	Assessment: Birth-Grade 3	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	416	Soc&Ed Policies Afect Chld&Fam	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links between policy, educational practice, schools, and family functioning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	417	Arts Integr Young Children	Provides a foundation for understanding young children's creativity and research-based perspectives for incorporating arts-based components such as drama, movement, dance, music, play and visual arts in education for young children. Further provides developmentally appropriate instructional methods and strategies to promote interdisciplinary learning with creative arts curriculum and inquiry learning, as well as instructional and assessment strategies for preprimary and primary-level children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): minimum junior standing OR Visiting University Student
ECD	418	Inst. Methods for Young Child	Develops integrated experiences with children's literature for facilitating development in reading, writing, speaking, and listening. Further develops educational strategies for promoting growth in the social studies and creative arts curriculum, and instructional/assessment strategies for preprimary- and primary-level children; developmentally appropriate methods and strategies for effective instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECD	476	Intentional Teaching	Guides teachers in becoming intentional practitioners through: observation, assessment, purposeful planning and reflective practice to adapt a variety of supports for children in order to maximize student potential and outcomes. In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
ECD	477	Student Teaching Birth - PreK	Supervised practicum in a birth to pre-K program.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4-6		Prerequisite(s): admission to the Professional Program

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ECD	478	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-9		Prerequisite(s): admission to the Professional Program
ECD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): admission to the Professional Program
ECD	503	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
ECD	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
ECD	505	Foundations Early Childhood Ed	Foundational basis of the early childhood field, including historical roots, current practices, ethics, models of teaching, and application in early childhood settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	520	Child Guidance	Introductory exploration of a variety of techniques for developing a positive classroom environment. Includes overview of several classroom and school management programs and possible effects of implementation. Focuses on observations made during the students' classroom and field experiences. Provides the catalyst for introducing students to the program's professional portfolio requirement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	525	Emergent Literacy	Examines current and classic research on oral language and literacy development and effective strategies for teaching language and literacy from birth through kindergarten, including phonemic awareness and alphabet instruction and beginning decoding.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 525 or RDG 525
ECD	526	Integrated Literacy	Examines current and classic research on language and literacy development and effective strategies for teaching and assessing language and literacy from kindergarten through third grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	527	Math in Early Childhood Educ	Explores methods of teaching and assessing mathematical skills and reasoning in children ages birth through third grade along with the broader impact of math literacy in young children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	541	Assessment of Young Children	Assessment principles, techniques, and issues related to guiding learning for children birth through eight years. Test construction, interpretation and communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	549	Found Div, Human Dev & Child	Psychology of learning and instruction, including the foundations of learning theories and their application to educational practice with an emphasis on diversity, multidirectional human change and cultural embeddedness.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	565	Instructional Methods ECD	Surveys appropriate teaching methodologies for young children across the curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
ECD	567	Clinical Experience: ECD	Applies course content in early childhood education preschool classrooms birth to age 5; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	576	Clinical Experience: ECD K-3	Applies course content in early childhood education classrooms grades K-3; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-2		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	577	Practicum: Early Childhood	Student teaching in early childhood education classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	578	Student Teaching: ECD K-3	Student teaching in early childhood education classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ECD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
ECD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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ECN	211	Macroeconomic Principles	Basic macroeconomic analysis. Economic institutions and factors determining income levels, price levels, and employment levels.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	212	Microeconomic Principles	Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): MAT 117, 119, 142, 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	213	Honors Macroeconomics	Introduces modern macroeconomic analysis. Theory of national income, unemployment, inflation, and economic growth and its application to economic policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; MAT 210, 211, 270, or 271 with C or better; Credit is allowed for only ECN 213 or ECN 313
ECN	214	Honors Microeconomics	Introduces modern microeconomic analysis. Theories of consumer behavior, production and cost. Output and price determination in a variety of market settings.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 211 or 271 with C or better if completed; Credit is allowed for only ECN 214 or ECN 312
ECN	221	Business Statistics	Introduces methods of statistical description, inference, probability, sampling, hypothesis testing and regression analysis with focus on business application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ECN 221 or ECN 231 OR Visiting University Student
ECN	231	Honors Business Statistics	Applies statistical methods used in business and economic modeling and research. Emphasizes regression analysis and modeling.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	CS	Prerequisite(s): Barrett Honors student; MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ECN 221 or ECN 231
ECN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): Barrett Honors student; Pre- or corequisite(s): MAT 210, 211, 270, 271, or 272 with C or better if completed
ECN	306	Survey International Economics	Surveys international trade issues, commercial policy, trade theory, customs unions, and international monetary topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
ECN	312	Intermed Microecon Theory	Expands on models covered in principles. Models consumer and producer choice, market structure and welfare.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 with C or better; MAT 211, 266, or 271 with C or better; Credit is allowed for only ECN 214 or ECN 312 OR Visiting University Student
ECN	313	Intermed Macroeconomic Theory	Expands on topics covered in principles. Emphasizes models of growth, employment, economic fluctuations, monetary and fiscal policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; ECN 212 or 214 with C or better; or ECN 313 OR Visiting University Student
ECN	315	Money & Banking	Functions of money. Monetary systems, credit functions, banking practices, and central banking policy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	331	Economics European Econ Union	Examines broad economic policies seeking to influence individuals' decisions, the history of European economic development and policies, as well as institutions and social systems.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better
ECN	335	South Asia & the World Economy	Develops and discusses alternative theories of trade, development, and growth in the context of south Asia and the world economy.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211, 266, or 271 with C or better
ECN	342	Sports Economics	Applies microeconomic concepts of competitive and imperfectly competitive markets, collective bargaining, antitrust issues and public finance to the sports industry.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better; Credit is allowed for only ECN 342 or ECN 394 (Economics of Sport) OR Visiting University Student
ECN	345	Env & Resouce Economics	Economic principles applied to private and public policy decisions involving environmental resources, natural resource management, and policy analyses. Focuses on how economic methods can contribute to making better environmental decisions.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
ECN	355	Economics of Healthcare	Uses economic tools and models to discuss and evaluate the American healthcare system. Applies standard concepts in microeconomics, macroeconomics, and public choice economics to the study of the evolution and the current state of the healthcare system and to the study of proposals for change. Focuses on the promise and problems of using economic tools in a historical, ethical, and cultural context to understand the current healthcare system.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better OR Visiting University Student
ECN	360	Economic Development	Theories of economic growth and development. Role of capital formation, technological innovation, population, and resource development in economic growth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213, ECN 212 or 214, and MAT 211 or 271 with C or better OR Visiting University Student
ECN	365	Economic Russia/Eastern Europe	Origins and analysis of contemporary institutions. Comparative development and differentiation in the 20th century.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	382	Managerial Economics	Applies economic analysis to managerial decision making. Market analysis in the context of the socio-legal environment. Does not satisfy Economics major requirements.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: Not open to Economics or Business majors. Minimum 2.0 ASU cumulative GPA and minimum of 56 total earned hours OR Non-degree student with minimum 2.0 ASU cum GPA OR Graduate student.
ECN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 211 or 213 with C or better; ECN 212 or 214 with C or better; MAT 211 or 271 with C or better
ECN	404	History of Economic Thought	Development of economic doctrines, theories of mercantilism, physiocracy, classicism, neoclassicism, Marxism, and contemporary economics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313
ECN	410	Applied Regression Analysis	Applies regression techniques to forecasting in business and institutional environments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student
ECN	411	Analysis of the U.S. Economy	Studies the major data releases used by economists to track the U.S. economy. Emphasizes how these data are used and their connection to macroeconomic theory.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 411 or ECN 494 (Contemporary Topics in Macroeconomics)
ECN	413	Advanced Honors Macroeconomics	Develops and uses various macroeconomic models to evaluate important economic policies. Emphasizes honing students' policy evaluation skills.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	414	Advanced Honors Microeconomics	Develops and uses various microeconomic models to evaluate important economic issues. Emphasizes the economics of uncertainty and information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): Barrett Honors student; ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 with C or better if completed
ECN	416	Game Theory&Economic Behavior	Introduces game theory and its application to various economic situations under conditions of complete and incomplete information.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	421	Labor Economics	Labor supply and demand, unemployment, determinants of wages, earnings inequality, labor unions and the structure of labor contracts.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 with C or better if completed OR Visiting University Student
ECN	423	Economics of Education	Focuses on educational decisions, including individual choices, institutional strategies and government policies. Topics include measuring the costs and returns of education, the relationship between education and inequality, and the role of K-12 and postsecondary institutions in economic growth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313; Credit is allowed for only ECN 423 or 494 (Economics of Education)
ECN	425	Introduction to Econometrics	Elements of regression analysis: estimation, hypothesis tests, prediction. Emphasizes use of econometric results in assessment of economic theories.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): DAT 401, ECN 221, ECN 231, IEE 380, STP 226, or STP 420 with C or better; ECN 214 or 312 with C or better OR Visiting University Student

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ECN	436	International Trade Theory	Comparative-advantage doctrine, including practices under varying commercial policy approaches. Economic impact of international disequilibrium.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	438	Internatl Monetary Economics	History, theory, and policy of international monetary economics. Balance of payments and exchange rates. International financial markets, including Eurocurrency markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB & G	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	441	Public Economics	Public goods, externalities, voting models, public expenditures, taxation, and budget formation with emphasis on the federal government.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	SB	Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	445	Environmental Economics	Advanced topics in environmental economics with quantitative methods for developing information that is used for environmental policy making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	453	Industrial Org/Compete Policy	Development of public policies toward business. Antitrust activity. Economic effects of government policies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better OR Visiting University Student
ECN	455	Health Economics	Focuses on health care decisions, including individual and government policies. Topics include demand for and supply of health care, payment for health care, the impact of health care reform and the techniques economists use to evaluate health care interventions.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite(s): ECN 213 or 313 OR Visiting University Student
ECN	470	Mathematical Economics	Integrates economic analysis and mathematical methods into a comprehensive body of knowledge within contemporary economic theory.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better
ECN	475	Capstone in Economics	Capstone course integrating several areas of economics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better; minimum senior standing
ECN	479	Experiments in Economics	Experiments on risk and time preferences, trust, collective action, social preferences and norms, gender, information, discrimination and market behavior.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): ECN 214 or 312 with C or better; ECN 425 with C or better; Credit is allowed for only ECN 479 or ECN 494 (Experiments in Economics)
ECN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): minimum 3.0 GPA; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-6		Prerequisite(s): Barrett Honors student; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Economics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; ECN 213 or 313 with C or better; ECN 214 or 312 with C or better
ECN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): ECN 214 or 312 with C or better; Pre- or corequisite: ECN 213 or 313 OR Visiting University Student
ECN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Economics	1-3		
ECN	502	Managerial Economics	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost, and pricing. Evaluates competitive strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	2-4		Prerequisite(s): W. P. Carey MBA student; Credit is allowed for only ECN 502 or FIN 535
ECN	503	Global Business Environment	Macroeconomic analysis of issues related to economic growth, inflation, interest rates behavior, unemployment, exchange rate determination, and global competitiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): W. P. Carey MBA student
ECN	504	Fundamentals Managerial Econ	Applies microeconomic analysis to managerial decision making in areas of demand, production, cost and pricing. Evaluates competitive strategies. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree-seeking graduate student
ECN	510	Microeconomic Theory/Applicatn	Applies economic theory to production, consumer demand, exchange, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	2-4		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	525	Applied Regression Models	Simple linear regression, multiple regression, indicator variables, and logistic regression. Emphasizes business and economic applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ECN	527	Categorical Data Analysis	Discrete data analysis in business research. Multidimensional contingency tables and other discrete models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: ECN 525
ECN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	711	Macroeconomic Analysis I	Current theories of output, employment, inflation, and asset prices as well as major aggregates. Introduces dynamic optimization techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	712	Microeconomic Analysis I	Theory of production, consumer demand, resource use, and pricing in a market economy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	713	Macroeconomic Analysis II	Focuses on growth theory, dynamic general equilibrium models, monetary theory, open-economy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	714	Microeconomic Analysis II	General equilibrium, welfare economics, production, and capital theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	715	Adv Macroeconomic Analysis	Focuses on current research areas in macroeconomics and monetary theory with emphasis on methods in economic dynamics and numerical techniques.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C or better; ECN 713 with C+ or better
ECN	716	Advanced Economic Theory I	Economic behavior under uncertainty; markets and contracts under asymmetric information; the theory of games with incomplete information and applications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 714 with C or better; ECN 712 with C+ or better
ECN	717	International Macroeconomics	Intertemporal approach to the current account, international business cycles, international risksharing and home bias, models of exchange rate determination, balance of payment crises, sovereign debt and default.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	721	Labor Economics I	Develops basic theoretical models for analyzing labor market issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	722	Labor Economics II	Extensions/criticisms of labor market theories. Applications to a variety of policy issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 721 with C or better
ECN	725	Econometrics I	Problems in the formulation of econometric models. Emphasizes estimation, hypothesis testing, and forecast of general linear models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	726	Econometrics II	Estimation and inference of qualitative and limited dependent variable models as well as general multiple equation models.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 725 with C+ or better
ECN	727	Quantitative Methods Economics	Generalized method of moment estimation, estimation with censored and truncated samples, nonlinear models, panel-data models, econometrics of nonstationarities.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better

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ECN	736	International Trade Theory	Theories of comparative advantage and their empirical verification. Theory and political economy of commercial policy, Resource transfers and the role of the multinational corporation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	741	Public Economics	Economics of collective action, public spending, taxation, and politics. Impact of central governmental activity on resource allocation and income distribution.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree-seeking graduate students; ECN 712 with B or better; Corequisite(s): ECN 714
ECN	753	Industrial Organization	Analyzes structure, conduct, and performance in industrial markets; the economics of organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 713 with C or better; ECN 714 with C or better
ECN	760	Economics Growth/Development	Economic problems, issues, and policy decisions facing the developing nations of the world.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W.P. Carey degree seeking graduate student; ECN 711 with C+ or better; ECN 712 with C+ or better; Corequisite(s): ECN 713; ECN 714
ECN	770	Mathematics for Economists	Surveys mathematical ideas encountered in economics and econometrics. Topics include measure theory, probability theory, and mathematical statistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: W.P. Carey degree seeking graduate student
ECN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Economics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ECN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Economics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ECS	310	Found Typic/Atypical Child Dev	Examines the process of typical and atypical physical, social, emotional, cognitive, and language development of young children with or at risk for delay.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	312	Soc and Em Devpt of Yng Child	Examines genetic, environmental and biological influences on typical and atypical social and emotional developmental processes through current research, current issues, as well as connections to practice.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): Professional Teacher Preparation Program student OR Educational Studies BAE student; minimum junior standing OR Early Childhood minor OR Educational Studies minor OR Visiting University Student
ECS	315	Classroom Org & Child Guidance	Develops and implements analysis, intervention, and consultation strategies for effective management of classroom behavior for students with and without disabilities. Age-appropriate techniques addressing individual, social, and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	316	Assessment/Evidence-based Prac	Examines assessments appropriate to birth - grade 3 instruction to align curriculum with learner needs. Focuses on test design, interpretation, lesson design, and aspects related to multiple classroom and formal assessments. Introduces designing, conducting, interpreting, and reporting teacher research; methods of research and fieldwork with children to improve teaching practices and child outcomes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	321	Comm, Lang Dev and Emerg Lit	Language and literacy development; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical observation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing

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ECS	340	Creative Curriculum ECD	Provides an overview of research and curricular strategies for preschool classrooms, including best practices for classroom design, management, scheduling and lesson development. A comprehensive, research-based curriculum that features exploration and discovery as a way of learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
ECS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
ECS	397	Student Teaching: Inclsve ECD	Student teaching in early childhood education inclusive classrooms ages birth to 5: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
ECS	411	IMYC: STEM	Explores, applies and integrates STEM (Science, Technology, Engineering and Math) content, project-enhanced instructional strategies and assessments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	412	Math Curriculum/Instrctn/As	Focuses on math content, methods, skills, and attitudes to be considered in teaching young children. Examines the theoretical foundation for young children's inquiry and learning. Methods focus on practical application of theory in classroom practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
ECS	413	Literacy Curriculum/Instrct/As	Extends ECD 321; language and literacy development in K-3 classrooms; language acquisition; methods of facilitating oral language in relation to emergent reading and writing; methods of facilitating early literacy development; clinical experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
ECS	420	Eval & Interv Strateg Disabil	Students will learn to screen, assess and provide services to young children with special needs using norm-referenced, criterion-referenced, and formative assessments to determine special education eligibility, plan individualized family service programs, and monitor progress for eligible students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
ECS	427	Highly Indiv Teach Learn	Covers evidence-based research and practices for fostering the social emotional, cognitive and motor development of young children with varying needs and abilities in inclusive settings. Students learn to individualize instructional strategies, design learning environments with appropriate accommodations and adaptations, and understand Individual Education Plans (IEPs) and/or Individual Family Service Plans (IFSPs). In order to successfully complete assignments in this course, students need access (through volunteering or a work setting) to children ages birth through five at least 15 hours/month.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
ECS	430	Sys Pol Advoc in ECD/SPE	Social policies at the national and state levels; values and assumptions of policies; political factors shaping policy and implementation; links among policy, educational practice, schools, and family functioning that have a direct impact on both typical and special needs children in early childhood programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
ECS	431	Fam Com & Prof Support Syst	Covers methods and issues in cooperative teaching for special education students in general education classrooms, with an emphasis on collaborative communication skills for working with a variety of school professionals and families.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Professional Teacher Preparation Program or enrolled in Educational Studies program or enrolled in Early Childhood minor
ECS	478	Student Teaching: SPE K-3	Student teaching in early childhood education inclusive classrooms grades K-3: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): admission to the Professional Program
EDA	501	Competency/Perform Educ Adm	Nature of educational administration and the concept of competency as it applies to educational administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	505	American Education System	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	511	School Law	Interpreting state and federal law and policy in school settings. Includes statutory authority for administrators, liability, constitutional rights, law, and ethics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	514	Leadership in Curric/Assessmnt	Curriculum and assessment responsibilities of school administrators.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	526	Instructional Supervision	Administering curriculum improvement, in-service education, evaluating, and improving teaching competence; administrative instructional responsibilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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EDA	548	Sch, Family/Comm Connections	Administrative factors of primary importance in developing community involvement in public schools. Emphasizes theory and skill of school system and individual communication.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	572	School Finance&Human Resources	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and school financial affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	578	Critical Iss/Educ Leadership	Explores current critical issues in school leadership, including student support and relationships with governmental agencies and the community.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	611	Educational Policy and the Law	Emphasizes policy analysis and application of federal and state law to policy evaluation and development in public schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	634	Instructional Leadership	Theory, practice, and issues in school change and reform with a focus on leading change efforts at the school site.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	676	The School Superintendency	Critical examination of the school superintendency and the primary functions of this educational position. Includes the duties, responsibilities, activities, and problems of the school superintendent. Examines the unique leadership role of the school superintendent.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	679	Admin Special Programs in Educ	For personnel administering special education and federal programs; responsibilities of principals, supervisors, counselors, and directors for special education and federally funded programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	685	Education in Global Contexts	Global perspectives on education in contemporary society with emphasis on social, political, and economic factors that affect access and equity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-6		Prerequisite(s): degree- or nondegree-seeking graduate student

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EDA	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	701	Action Research Quant Methods	Quantitative methods of inquiry for action research: data collection, analysis, interpretation, complementarity analysis, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 701 or TEL 701
EDA	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 702 or TEL 702
EDA	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 703 or TEL 703
EDA	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 704 or TEL 704
EDA	772	School District HR&Bus Mgmt	Effective ethical models and strategies for organizing and administering the conduct of school site human resources administration and business affairs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	773	Sup&Sch Dist Ldrshp Roles&Rsp	Examines management roles and responsibilities of public school district superintendents and other leaders in identifying and addressing critical issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	310	Ed Psychology for Non-Teachers	Human behavior in educational situations. Individual differences, factors affecting learning, behavioral and cognitive learning, motivation, testing, and assessment.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6	SB	

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EDP	311	Ed Psych for Future Teachers	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3	SB	Prerequisite(s): Teachers College major, minor or certificate student OR Visiting University Student
EDP	313	Childhood and Adolescence	Principles underlying total development of pre- and early-adolescent children. Emphasizes physical, intellectual, social, and emotional development with practical implications for teachers. Meets ADE requirement for one course in early adolescent psychology for middle grade endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
EDP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EDP	454	Statistical Data Analysis Educ	Role of data analysis in research and decision making. Elements of exploratory data analysis, descriptive indexes, and statistical inference.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	
EDP	502	Introduction to Data Analysis	Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; Credit is allowed for only COE 502 or EDP 502
EDP	510	Psychology in Education	Planning and conducting effective instruction based on learning theories and principles.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	514	Psychology of the Adolescent	Cognitive, physical, and social development of adolescents in contemporary society. Impact of family, school, and workplace on adolescent development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	540	LearningTheories&InstrctStratg	Studies grounded instructional strategies rooted in established theories of learning to form the basis of building instruction. Explores how teaching, learning and performing can be designed via technological environments to support instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student; Credit is allowed for only EDP 540 or LSE 540
EDP	552	Multi Regression/Correlatn Mth	Educational applications of regression techniques. Quantitative and qualitative predictors, curvilinear trends, and interactions. Emphasizes analyzing data and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	554	Analysis-of-Variance Methods	Educational applications of ANOVA techniques. Between- and within-subjects designs, multiple comparisons. Emphasizes using statistical software and interpreting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	597	Applied Research & Reflection	The dual purpose of the project is to synthesize learning from multiple areas of scholarship on teaching and learning, and to reflect on the content and process of the master's degree program. Culminating product includes a reflective paper with a corresponding project, such as a literature review, curricular model, technology product, or other project as agreed upon by the student and the student's advisor.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	651	Mth/Practices Qual Research	Advanced course for students familiar with theory and extant work. Topics include data collection, analysis, reporting, and an extensive fieldwork project.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): COE 503 with C or better
EDP	652	Multivar Proceods Data Analysis	Educational applications of multivariate methods, including MANOVA, discriminant analysis, and exploratory factor analysis. Emphasizes analyzing data and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	654	Structural Equation Modeling	Educational applications of confirmatory factor analysis, path analysis, and full latent variable models. Experience in conducting analyses and reporting results.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EDP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-3		Pre-requisites: Freshman standing, Maximum 25 hours
EDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	200	Design Literacy&Commnctn	Builds the requisite skills for students to be able to express their ideas visually. Gives exercises to create an understanding of basic principles of design as well as design communication, principles of composition and aesthetic evaluation. Uses tools such as sketching, drawing, computer graphics and model making as a vehicle to develop an understanding of visual methods of expressing one's self.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or The Arts (Fashion Design) major
EDS	201	Fund. of Sustainblty in Design	Explores sustainability as it relates to the key disciplines that comprise environmental design. Topics range from issues affecting the preservation of the urban fabric to the development of earth-friendly materials used by interior designers and product designers to the design of sustainable buildings by architects through the use of appropriate materials and requisite energy efficiencies. Surveys the literature of sustainability, identifying critical issues on the subject today. Explores the theoretical underpinnings of the sustainability movement as it affects environmental design and related disciplines.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
EDS	223	Design Thinking	Introduces the notion of design thinking, a concept that is gaining significant recognition in several disciplines including art, design, business, engineering and others. Design thinking can be described as a creative, multidisciplinary, human-centered approach to solving complex problems. Contemporary society faces numerous challenges, and the need for new tools and methods to tackle and solve these problems is more pressing than ever before. Offers several new techniques of design thinking and creative problem solving through engaging lectures and exciting projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		
EDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	301	Sustainable Comm Dgn/Practices	Covers concepts and practices of a sustainable built environment of community scale. Exposes theories and methods, best practices to the design of built environments as a vehicle to develop students' understanding of different aspects of planning, designing, building, managing and promoting social and economic development of communities to meet sustainable development objectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	HU	Pre- or corequisite(s): EDS 200 OR Visiting University Student
EDS	302	Design Inq & Ugrad research	Theories and methods of design inquiry within a research environment. Prepares students for the senior-year synthesis courses. Students take on design-related research and develop and write a proposal for an integrative experience/project for an environmental design intervention and make an implementation plan to realize this intervention.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: EDS 301
EDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	401	Environmntl Design Synthesis I	First of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students identify a relevant research problem in environmental design and undertake the necessary literature search and reading regarding theories and methods related to the selected research question. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 440 with C or better OR Visiting University Student

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EDS	402	Environmntl Design Synthesis II	Second of a two-semester sequence of synthesis courses intended to be integrative, based on design research and inquiry. Serves as a culminating experience where, through the successful completion of an environmental design research project/application or experience, students demonstrate their understanding and synthesis of the knowledge and skills they have acquired in the program. Students implement the research study identified in the first semester of the two-semester sequence. Emphasizes the use of visual methods as a method of inquiry and research.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): EDS 401
EDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
EDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
EDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
EDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
EDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
EDT	180	TechLtrcy Prblm Slvng DigTech	Introducing digital technologies and their place in society. Applies 21st-century skills to problem solving using digital technology applications including spreadsheets and databases.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Credit is allowed for only EDT 180 or EDT 321 OR Visiting University Student
EDT	321	Computer Literacy: Mobile Tech	Uses mobile technologies across disciplines for communication, collaboration, creativity and problem solving. Employs digital tools including Microsoft Office's spreadsheets and databases, Google apps, mobile apps, and a variety of other Web-based tools in problem-based environments.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	CS	Pre-requisite: Minimum 45 hours; Credit is allowed for only EDT 180 or EDT 321
EDT	440	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	460	Games, Technology & Society	Education, healthcare and social activism. Explores general theories about the relationship between technology and society using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact. Students play and analyze existing impact games as well as conduct a landscape analysis for an impact game on a topic of their own choosing.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only EDT 460 or EDT 560
EDT	461	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing
EDT	463	Games for Impact: Life Cycle	Presents an impact game publishing methodology covering the full life cycle and key considerations for impact game design, development and publishing as well as the unique challenges in making games for impact. Applies methodology to examine an existing impact game currently in development. Students collaboratively workshop an original impact game concept and publishing plan that harnesses the power of games to address a key 21st-century challenge.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing. Credit is allowed for only EDT 463 or EDT 563
EDT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		

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EDT	501	Fndtns of Learning Design&Tech	Foundations and evolution of the field of learning design and technology; examines accomplishments and issues in the field and explores possible career paths.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	502	Design and Development of Inst	Centers on the design and development of competency-based instructional materials, based on a variety of instructional design models, for learning in a multitude of settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	503	Design Effective Communication	Explores the theory, research and practice of computer-mediated communication including principles of graphic design for the purposes of creating effective presentations, job aids/infographics and video/audio for educational purposes. Includes a focus on accessibility and Section 508 compliance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	504	Modalities of Learning	Focuses on the development, design and creation of various forms of Web-based instruction including blended, hybrid and online learning. Examines the characteristics of interactive media, synchronous and asynchronous forms of distance/online learning, eLearning software and project management.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	506	Evaluation of Learning System	Examines procedures for evaluating educational programs, training systems and new-technology applications. Focuses on basic evaluation concepts, steps in conducting a systematic evaluation project, the preparation of an evaluation report, as well as ethical issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; EDP 540, EDT 501, or EDT 502; Credit is allowed for only CED 525 or EDT 506
EDT	507	Performance Imprvmt & Ldrshp	Introduces the field of human performance technology. Emphasizes the analysis of performance problems, their causes, and interventions.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	511	Emerging Trends Tech Lmg Dsgn	Identifies current and future trends in the field of educational technology. Examines key trends, developing technologies and the affordances these technologies might offer, as well as the challenges with implementation that might be faced. Prepares students to embrace the ever-evolving nature of teaching and learning with technology, and how this may impact the process of design. Our awareness and openness to change influences our practice, and staying current with trends is an important characteristic of any future role related to educational technology that one may have.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student
EDT	523	Issues in Online & Distance Ed	Investigates current issues and trends specific to the implementation of web-based teaching and learning as well as practices for effective online instruction. Examines online learning principles, practices and their effectiveness by exploring the use of related systems and applications.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate; EDP 540; EDT 501; EDT 502
EDT	524	Issues in K-12 Online Learning	Examines current issues, policies, and trends pertaining to K-12 Web-based teaching and learning. Actively explores research related to online learning, with a focus on virtual schooling and emerging best practices for effective online instruction.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Practicing or licensed K-12 teacher
EDT	530	Technology Integration Methods	Examines a constructivist approach to technology in education. Investigates technology as a catalyst for rethinking instructional goals and practices.	Y	LEL	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	540	Creating & Mrkting Mobile Apps	Focuses on conceptualizing, creating and marketing of apps for mobile devices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDT 440 or EDT 494 (Creating and Marketing Mobile Apps) or EDT 540
EDT	545	Using the Internet in Educ	Explores the Internet as an educational tool for research, inquiry-based learning, and online learning communities. Incorporates constructivist theory.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EDT	560	Games, Technology and Society	The role and significance of digital games in society and the process of designing games for impact in areas such as education, healthcare and social activism. Explores general theories about the relationship between technology and society, using games as examples, as well as develops a better understanding of methods that take a systemic, contextualized approach to designing games for impact.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 460 or EDT 560

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EDT	561	Understanding Games for Impact	Explores the nature of learning in and around games designed for entertainment as well as games designed intentionally for impact. Students gain familiarity with current research on course topics; develop a language for reflection on the cognitive, sociocultural and educational merits and drawbacks of game-centered learning environments; and gain new insights into the ways in which digital playspaces and pastimes shape how people think and learn. Develops the ability to analyze learning in games and game-related social contexts, using different theoretical perspectives and tools.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only EDT 461 or EDT 561
EDT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: EDT 501, 502, and 503 with C or better
EDT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDP 540; EDT 501; EDT 502; degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
EDT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisites: Accepted in either the MED in EDTCH, PHD in EDTECH, or the certificate in EDTECH programs
EDT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 502 with C or better
EDT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): EDT 501, 502, and 503 with C or better
EDT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): EDT 701 with C or better
EDT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
EDU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EDU	301	Why Education?	Explores and understands diverse forms and roles of education across multiple settings and populations, and from those encounters, evaluates how those forms and embedded practices support different values that are commonly tied to education. This evaluation includes the analysis of fundamental questions about justice, equity, opportunity and fairness in education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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EDU	302	Diversity in Learning Contexts	Examines the relationships among cultural values, social contexts and learners' experiences. Explores the role of prejudice, stereotypes, institutional racism and sexism, and cultural incompatibilities in learning environments. Students debate fundamental questions about justice, equity, opportunity and fairness in order to develop their personal values and beliefs about diversity in learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	304	Coursework, Identity, Career	Connects critical concepts in coursework to field-based opportunities. Identifies social concerns that define an educational field as well as known supports and possible barriers. Given the specified discipline of a field, defines learning opportunities as well as opportunities for leadership, advocacy and innovation.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
EDU	396	Internship Non-profit Learning	Intern in a non-profit organization to link programmatic learning and personal educational interests. Expands students' experiences in culturally and socially diverse educational settings as they gain an understanding of the internship site's work, mission and audience. Expands on their vision for a future career by observing, actively participating, evaluating and reflecting on their internship experience.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	402	Partnering for Ed Initiatives	Examines global formal and informal partnerships to design innovative and sustainable educational initiatives that address social concerns and meet the needs of diverse populations. Shares solutions through professional communication using technology to collaborate with diverse groups.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
EDU	403	Planning for Capstone Project	Designs an education system or program to meet the needs of a diverse population within a specific community. Applies current research-based learning theories to the design. Uses professional communication skills to establish a partnership to advance an educational effort that promotes change within a community. Students use a deliberate design process to plan out an educational system or program that is aligned with their values and beliefs for learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Pre- or corequisite(s): EDU 396; EDU 484
EDU	404	Nav Change in Ed Innovation	Advocates for educational solutions that change communities and lives by addressing social concerns. Applies professional ethics to navigate through formal systems to change educational environments that meet the needs of a diverse population within a specific community. Expands one's experience in education across different cultural and social settings. Students communicate and collaborate globally to share findings and solutions on the world stage.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours
EDU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EDU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-6		Prerequisite(s): Barrett Honors student
EDU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EDU	498	Pro-seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-7		
EDU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LAB	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-3		
EDU	501	Education Sciences 1	First course in the MS in Education Sciences sequence with beginning-level topics in quantitative research design, measurement and statistics in practice. Covers fundamental concepts in education research design, measurement, statistics and data management.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	502	Education Sciences 2	Second course in the MS in Education Sciences sequence with intermediate-level topics in research design, measurement and statistics in practice. Covers intermediate topics essential to the design and implementation of quantitative education research and the analysis of data. Course topics expand upon research skills introduced in earlier coursework.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): EDU 501

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EDU	503	Education Sciences 3	Third course in the MS in Education Sciences sequence with advanced-level topics in research design, measurement and statistics in practice. Covers advanced topics in quantitative education research essential to success in real-world projects and effective communication of results. Course topics integrate, expand upon and apply research skills introduced in blocks one and two to design, measurement and analysis. Emphasizes application of design, measurement and analysis topics to consume and produce educational research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): EDU 501; EDU 502
EDU	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EDU	701	Systems Leaders Lab I	Aligned with students' professional settings and ongoing doctoral capstone projects, this lab course (Part I of the three-part LSL Lab Series) provides an overview of how leaders can identify and design solutions to "wicked problems" within learning systems.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student
EDU	702	Systems Leaders Lab II	Aligned with students' professional settings and ongoing capstone projects, the main motivation behind this lab (Part II of the three-part Lab Series) ensures students are familiar with, also in terms of application, the key concepts and ideas associated with educational and psychological measurement. While theoretical by nature, heavily applies the measurement-based content included throughout this course, and also involves required interactions with students' mentors.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student; EDU 701
EDU	703	Systems Leaders Lab III	Aligned with students' professional settings and ongoing doctoral capstone projects, this lab course (Part III of the three-part LSL Lab Series) provides an overview of how leaders can design and implement approaches to oversee monitoring, evaluation and assessment processes within learning systems.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Learning Systems Leadership EdD student; EDU 701; EDU 702
EED	324	Social Studies in Elem Schools	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners. Explores instructional materials, technology tools and social studies programs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	396	Clinical Experience I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a K-8 classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of EED 396 fulfills two (2) of eight (8) required semester hours of practicum in grades K-8, as required by SBR R7-2-608 for an Elementary Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program

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EED	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
EED	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
EED	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
EED	433	Lng Method Mgt/Assesment	Theory on the social nature of oral and written language and congruent teaching, management and assessment practices. Emphasizes skills, strategies and dispositions for teaching 21st-century multimodal literacies to diverse learners including ELL with a focus on learners as creators of content, communicators, collaborators and global citizens.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
EED	478	Student Teaching: EED 1-8	Student teaching in elementary education classrooms grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
EED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
EED	511	Curriculum Theory&Instruct Pln	Contemporary curriculum theories. Curriculum as an interrelated entity. Process for instructional planning for student understanding and achievement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	521	Instructional Planning Diverse	Planning and delivering instruction; making adaptations for English language learners and students with special needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	524	Social Studies Meth&Assessment	Provides strategies for integrating social studies content knowledge with other curricular areas. Addresses a variety of issues related to social studies instruction in the elementary school, with an emphasis on valuing diverse cultures and experiences within historical and geographical perspectives. Emphasizes meeting the academic and linguistic needs of all learners including English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	529	Science Methods & Assessment	Focuses on inquiry-based processes, lesson design, teaching methods, and content overview to support science instruction in elementary grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	531	Teaching with Educ Technology	Focuses on using technology in K-12 classrooms. Addresses the integration of technology in all curricular areas for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	536	IntrgHumanities Method/Assess	Focuses on content, assessments and methods of integrated humanities (social studies, arts and English language arts) for the elementary teacher. Apprentice teachers critically analyze and discuss course materials, generate meaningful questions and seek answers concerning the purpose, content, methods and assessments of integrated humanities instruction, and actively participate in course activities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): TEL 531

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EED	537	K-8 Math Methods & Assessment	Mathematical knowledge for learning, teaching and assessment in grades K through 8. Focuses on developing conceptual understanding of mathematics through inductive, inquiry-based, problem-centered learning and teaching. Emphasizes representing and explaining mathematics using concrete, digital and real-world representations. Focuses on theories of mathematics learning, standards learning trajectories, and learning designs sequenced concrete-to-pictorial-to-abstract. Introduction to cognitively guided instruction and brain science messages of productive struggle and growth mindset for equitable mathematics learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student
EED	550	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
EED	557	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556
EED	567	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
EED	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
EED	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
EED	576	Internship III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
EED	578	Residency/Student Teaching EED	Student teaching in elementary (EED) school classroom. Synthesized experience in curriculum, instruction and classroom management. Builds upon previous professional experiences to extend learning in a classroom setting and to obtain practice and feedback to continuously improve educator knowledge and skills.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
EED	582	Student Teaching EED Dual Cert	This 8-week capstone residency experience meets the EED requirement for dual certification in SPE and EED. Synthesized experience in curriculum, instruction and classroom management.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
EED	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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EEE	120	Digital Design Fundamentals	Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; minimum 12 hours; Credit is allowed for only CSE 120 or EEE 120 OR Visiting University Student
EEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	202	Circuits I	Principles for analyzing linear and nonlinear circuits. Uses SPICE and MATLAB. Design and measurement of linear analog electrical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): degree-seeking student; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed; PHY 131 with C or better if completed OR Visiting University Student
EEE	203	Signals and Systems I	Introduces continuous and discrete time signal and system analysis, linear systems, Fourier, and z-transforms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; EEE 202; MAT 242 with C or better or Pre- or corequisite(s): MAT 342 or 343 with C or better if completed OR Visiting University Student
EEE	230	Computer Org/Assemb Lang Prog	Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming. Exception/interrupt handling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prereq(s) w/min C: degree-skg stdnt: CSE 100 or 110; CSE or EEE 120 OR Sftwre Engr or Engr Mgt maj; CSE 110; SER 232 OR Elec Engr maj; CSE 100 or 110; CSE or EEE 120 OR Com Sci & Engr grad; Credit allowed for CSE or EEE 230 OR Visiting University Student
EEE	241	Fundamentals Electromagnetics	Vector analysis, differential operators, fourier analysis, scalar, vector fields, electro/magneto statics, time-varying fields, boundary value problems, dielectric, magnetic materials, Maxwell's equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree-seeking student; MAT 267 or 272 with C or better; MAT 274 or 275 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202 OR Visiting University Student
EEE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	304	Signals and Systems II	Communication, signal processing, control systems, continuous, discrete transforms, sampling theorem, analog, digital modulation, filter design, signal processing applications, state space.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	307	Sig Process Digital Culture	Signal processing for non-majors. Digital filters, Fourier and z transform, DFT and FFT, digital signal processing computing, interdisciplinary DSP applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): non-ECEE major; MAT 210, MAT 265, or MAT 270; Credit is allowed for only EEE 307 or EEE 394 (Signal Analysis for the Digital Culture)
EEE	333	Hardwre Design Lang/Prog Logic	Develops digital logic with modern practices of hardware description languages. Emphasizes usage, synthesis of digital systems for programmable logic, VLSI.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 120 or CSE 120; EEE 202 OR Visiting University Student
EEE	334	Circuits II	Design of analog and digital circuits. Diodes/BJTs/Mosfets. Digital and analog circuit building blocks. Fundamentals of mixed signal circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) student; EEE 202 OR Visiting University Student
EEE	335	Analog and Digital Circuits	Analog, digital microelectronic circuits and systems. Amplifiers, frequency response, gate sizing, timing analysis, sequential digital circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student or Computer Systems Engineering or Computer Systems Engineering (Information Assurance) major; EEE 334 OR Visiting University Student
EEE	341	Engineering Electromagnetics	Time-varying electromagnetic fields, waves in homogeneous and stratified media, transmission lines, waveguides and cavity resonators, radiation and antennas.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; EEE 241 OR Visiting University Student
EEE	350	Random Signal Analysis	Probabilistic and statistical analysis as applied to electrical signals and systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; MAE 318 OR pre- or corequisite: EEE 203; OR Fulton Engineering graduate student OR Visiting University Student

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EEE	352	Properties Electronic Material	Schrodinger's wave equation, potential barrier problems, bonds of crystals, the band theory of solids, semiconductors, superconductor dielectric, and magnetic properties.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114, 115, 116 or 118; EEE 241; PHY 241 with a C or better OR Visiting University Student
EEE	360	Energy Sys/Power Electronics	Conventional and alternate energy sources for power systems, three-phase analysis, AC generators, transformers, induction, DC motors, power electronic speed control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 202; Pre- or corequisite(s): EEE 241 OR Visiting University Student
EEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		
EEE	404	Real-Time DSP Systems	Digital signal processors, translating signals and systems concepts into real-time multimedia and communications applications, real-time algorithms.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CSE 230 or EEE 230; EEE 203
EEE	407	Digital Signal Processing	Time and frequency domain analysis, difference equations, z-transform, FIR and IIR digital filter design, discrete Fourier transform, FFT, and random sequences.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; MAT 342 or 343 with C or better OR Visiting University Student
EEE	425	Digital Systems and Circuits	Digital logic gate analysis and design. Propagation delay times, fan out, power dissipation, noise margins. Design of MOS and bipolar logic families, including NMOS, CMOS, standard and advanced TTL, ECL, and BiCMOS. Inverter, combinational and sequential logic circuit design, MOS memories, VLSI circuits. Computer simulations using PSPICE.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	433	Analog Integrated Circuits	Analysis, design, and applications of modern analog circuits using integrated bipolar and field-effect transistor technologies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 335 OR Visiting University Student
EEE	434	Quantum Mechanics Engineers	Angular momentum, wave packets, Schroedinger wave equation, probability, problems in one dimension, principles of wave mechanics, scattering, tunneling, central forces, angular momentum, hydrogen atom, perturbation theory, variational techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	435	Fundamentals of CMOS & MEMS	Introduces basic CMOS processing and fabrication tools. Covers the fundamentals of thermal oxidation, CVD, implantation, diffusion, and process integration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	436	Fund of Solid-State Devices	Semiconductor fundamentals, pn junctions, metal-semiconductor contacts, metal-oxide-semiconductor capacitors and field-effect transistors, bipolar junction transistors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	437	Optoelectronics	Basic operating principles of various types of optoelectronic devices that play important roles in commercial and communication electronics; light-emitting diodes, injection lasers, and photodetectors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352
EEE	439	Semiconductor Facil/Cleanrm Prac	Microcontamination, controlled environments, cleanroom layout and systems, modeling, codes and legislation, ultrapure water, production materials, personnel and operations, hazard management, advanced concepts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352 OR Visiting University Student
EEE	443	Antennas Wireless Communicatns	Fundamental parameters; radiation integrals; wireless systems; wire, loop, and microstrip antennas; antenna arrays; smart antennas; ground effects; multipath.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341
EEE	445	Microwaves	Waveguides; circuit theory for waveguiding systems; microwave devices, systems, and energy sources; striplines and microstrips; impedance matching transformers; measurements.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 (EEE 340) OR Visiting University Student
EEE	448	Fiber Optics	Principles of fiber-optic communications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 341 OR Visiting University Student
EEE	455	Communication Systems	Signal analysis techniques applied to the operation of electrical communication systems. Introduction to and overview of modern digital and analog communications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 350 OR Visiting University Student

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EEE	459	Communication Networks	Fundamentals of communication networks. Study of Seven-Layer OSI model. Focus on functionality and performance of protocols used in communication networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203; Corequisite(s): EEE 350 OR Visiting University Student
EEE	460	Nuclear Power Engineering	Radioactivity and decay. Radiation interactions and dose. Nuclear reaction, fission and fusion theory. Fission reactors, four factor formula, moderation. Nuclear power, TMI, Chernobyl. Nuclear fuel cycle.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; CHM 114 or 116; MAT 274 or 275 with C or better; PHY 241 or 361 with C or better
EEE	463	Electrical Power Plants	Generation of electric power using fossil, nuclear, and renewable, including solar, geothermal, wind, hydroelectric, biomass and ocean, energy sources. Power plant thermal cycle analysis. Cogeneration and combined cycles. Economics, operations, and design of electric power stations. Energy storage.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE or BHSE undergraduate student; CHM 114 or 116; MAE 241 or PHY 241 with C or better; MAT 274 or 275 with C or better OR Visiting University Student
EEE	465	Photovoltaic Energy Conversion	Photovoltaics for production of electricity from solar energy. The grand energy challenge. Solar radiation and utilization. Fundamentals of semiconductors for photovoltaics: crystal structures, band theory, doping, carrier statistics, optical absorption, and p-n junctions. Principles of solar cells including loss mechanisms and design principles. Current solar cell technologies. Manufacturing of silicon solar cells. Solar modules, arrays and systems. Economic analysis of solar photovoltaic systems. Terawatt-scale deployment of solar cells.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 352; Credit is allowed for only EEE 465 or 498: Solar Energy
EEE	470	Electric Power Devices	Analyzes devices used for short circuit protection, including circuit breakers, relays, and current and voltage transducers. Protection against switching and lightning over voltages. Insulation coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360 OR Visiting University Student
EEE	471	Power System Analysis	Review of transmission line parameter calculation. Zero sequence impedance, symmetrical components for fault analysis, short circuit calculation, review of power flow analysis, power system stability, and power system control concepts.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	472	Power Electronics & Power Mgmt	Principles of switch mode power conversion, analysis, design and control of dc-dc converters, PWM rectifiers and inverters, power management, power electronics applications in information technology, renewable energy systems, motion control and lighting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 OR Visiting University Student
EEE	473	Electrical Machinery	Operating principles, modeling and speed control of DC, brushless DC, and AC machines; power converters for DC and AC motors drives.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 360
EEE	480	Feedback Systems	Analysis and design of linear feedback systems. Frequency response and root locus techniques, series compensation, and state variable feedback.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 or MAE 318 OR Visiting University Student
EEE	481	Computer-Controlled Systems	Implements computer-based, embedded, control systems using MATLAB xPC Target toolbox. Small-scale, representative projects demonstrate theoretical issues and provide hands-on expertise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 203 and EEE 230/CSE 230, or MAE 318 OR Visiting University Student
EEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	488	Senior Design Laboratory I	Design process: research, concept, feasibility, simulation, specifications, benchmarking, and proposal generation. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergrad student; ENG 102, 105 or 108, EEE 241; EEE 334; EEE 350; three courses from the following list: EEE 304, 333, 335, 341, 352 or 360
EEE	489	Senior Design Laboratory II	Implement, evaluate, and document EEE 488 design. Social, economic, and safety considerations. Technical communications and team skills enrichment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3	L	Prerequisite(s): Fulton ECEE, SEMTE, or BHSE senior or postbaccalaureate undergraduate student; EEE 488; ENG 102, 105, or 108 with C or better
EEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6		Prerequisite(s): Barrett Honors Electrical Engineering BSE senior

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EEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-6	L	Prerequisite(s): Barrett Honors Electrical Engineering BSE senior; ENG 101, 105, or 107 with C or better
EEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student; EEE 433
EEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-7		Prerequisite(s): Fulton ECEE, SEMTE, or BHSE undergraduate student
EEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-3		Prerequisite(s): Electrical Engineering BSE senior
EEE	505	Time-Frequency Signal Process	Joint time-frequency analysis of time-varying signals and systems; linear and quadratic time-frequency representations; applications in current areas of signal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	506	Digital Spectral Analysis	Principles and applications of digital spectral analysis, least squares, random sequences, parametric, and nonparametric methods for spectral estimation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	507	Multidimension Signal Process	Processing and representation of multidimensional signals. Design of systems for processing multidimensional data. Introduces image and array processing issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	508	Digital Image&Video Proc & Cmp	Fundamentals of digital image perception, representation, processing, and compression. Emphasizes image coding techniques. Signals include still pictures and motion video.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	509	DSP Algorithms & Software	Linear systems review, digital filter design, software aspects, DFT, FFT, random signals, programming aspects, applications projects, MATLAB and Java simulations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	510	Multimedia Signal Processing	Speech/audio coding algorithms. LPC, CELP, MPEG, Cell phone, DTV, cinema, and surround sound standards. MPEG/JPEG introduction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	511	Artificial Neural Computation	Networks for computation, learning function representations from data, learning algorithms and analysis, function approximation and information representation by networks, applications in control systems and signal analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	512	Sys Level Design Hetero Archs	In-depth introduction to multicore computing architectures ranging from low-power multiprocessor systems-on-chip (MpSoC) to high-performance chip-multiprocessors (CMP). Fundamental topics on modeling, analysis, and optimization of multicore systems; particular attention on low-power and communication-centric design of multicore systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 512 or EEE 598 (System-Level Design for Multicore Architectures)
EEE	515	Machine Vision and Pattern Rec	Covers the field of computer vision, whose broad goal is to create algorithms and systems for processing of visual signals (e.g., images, videos) for low-level, mid-level, and high-level perceptual tasks. Presents the broad principles and techniques for devising computer vision algorithms starting from understanding the imaging process for a pin-hole camera; understanding lenses, image-statistics such as gradients and edges, 3D structure estimation, motion estimation, illumination modeling to perceptual tasks such as shape recognition, texture modeling, face recognition, activity recognition, and scene recognition. The class is a mixture of in-class lectures and discussions, and individual and group projects.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit allowed for only AME 515 or EEE 515 or EEE 598 (Computational Image Understanding & Pattern Analysis)

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EEE	516	Physics-Based Computer Vision	Covers topics in physics-based computer vision and graphics. Includes work on visual computing systems including computational cameras, illumination systems, 3D scanners, rendering/animation and displays. Starting with the basics of traditional photography and the imaging pipeline, proceeds to explore new ways to capture visual information by co-designing camera hardware and software algorithms. Topics covered include plenoptic or multi-modal imaging, coded and compressive sensing, light transport and rendering, programmable illumination, and computational displays. Focuses on understanding and evaluating new imaging technology for specific applications including autonomous vehicles, entertainment and graphics, computer vision and visual recognition, and robotics. Course content delivered via lectures along with written and programming assignments as well as a final project.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Herberger Arts, Media and Engineering grad student or Fulton Engineering grad student; Credit is allowed for only AME 516 or AME 598 (Comp Cam, Ltg & Disp) or EEE 516 or EEE 598 (Comp Cam, Ltg & Disp) or EEE 598 (Phys-based Comp Vision)
EEE	517	Sensors and Machine Learning	Integrated sensor devices and algorithms; microphone arrays, chemical sensing, mobile sensing; accelerometers and magnetometers, nanopore sensors, and flexible and patch sensors. Signal pre-processing for sensors; feature extraction; image sensing; voice processing; filters; frequency analysis; autocorrelation; principal components; k means algorithm; sensor fusion; neural nets; applications to health, security and mobile systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 517 or EEE 598 (Sensor & Machine Learning Apps)
EEE	521	Low-Power Bioelectronics	Begins with fundamental theory and techniques for low-power analog circuit design especially subthreshold CMOS and BJT circuits (e.g., translinear circuits), then moves to biomedical applications and bio-inspired systems focused upon neuromorphic circuits. Also touches on concepts such as wireless challenges for implants, energy harvesting and electrochemistry. Students have the opportunity to have their final projects fabricated in a commercial CMOS process.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	522	RF Test	Covers current production test schemes for mixed-signal and RF circuits, the economics of production test, and recent research techniques in reducing the production test cost. Prior knowledge of Matlab is necessary to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	523	Adv Analog Integrated Circuits	Analysis and design of analog integrated circuits; analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	524	Comm Transceiver Circuit Design	Communication transceivers and radio frequency system design; fundamentals of transceivers circuits; RF, IF, mixers, filters, frequency synthesizers, receivers, CAD tools, and lab work on IC design stations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	525	VLSI Design	Analysis and design of Very Large Scale Integrated (VLSI) circuits. Physics of small devices, fabrication, regular structures, and system timing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	526	VLSI Architectures	High throughput and low-power VLSI architectures for signal processing. Array processor systems; data path design and optimization; memory design; high-level synthesis; low-power design at system level, algorithm level, and architecture level.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	527	Analog to Digital Converters	Detailed introduction to the design of Nyquist rate, CMOS analog to digital converters. Requires knowledge of analog integrated circuits (analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits) to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	528	Snsrs Intrnet Things&Wear Dev	Fundamentals, concepts of system analysis and design, and principles that apply to phase-locked loops (PLLs) used in frequency synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EEE	529	Semicondctr Memory Tech & Sys	Design of semiconductor memory technologies and systems, from the device cell structures to the array and architecture design, with emphasis on the industry trends and cutting-edge technologies including SRAM, DRAM and FLASH technologies and emerging memory technologies such as STT-MRAM, PCRAM and RRAM.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Comp & Energy Engr (ECEE), POLY, SBHSE, SCAI, SEMTE, or SSEBE graduate student; Credit is allowed for only EEE 529 or EEE 598 (Semicondctr Memory Tech & Sys) or CEN/CSE 591 (Memory Sys: Device, Circuit & Architecture)
EEE	530	Advanced Silicon Processing	Thin films, CVD, oxidation, diffusion, ion-implantation for VLSI, metallization, silicides, advanced lithography, dry etching, rapid thermal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student

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EEE	531	Semiconductor Device Theory I	Transport and recombination theory, pn and Schottky barrier diodes, bipolar and junction field-effect transistors, and MOS capacitors and transistors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	532	Semiconductor Device Theory II	Advanced MOSFETs, charge-coupled devices, solar cells, photodetectors, light-emitting diodes, microwave devices, and modulation-doped structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
EEE	533	Semiconduct Process/Device Sim	Device simulation concepts: conventional and advanced MOS devices, bipolar transistors, heterostructures including HEMTs and solar cells. Process simulation concepts: oxidation, ion implantation, diffusion.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	534	Semiconductor Transport	Carrier transport in semiconductors. Hall effect, high electric field, Boltzmann equation, correlation functions, and carrier-carrier interactions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	535	Electron Transport Nanostruct	Nanostructure physics and applications. 2-D electron systems, quantum wires and dots, ballistic transport, quantum interference, and single-electron tunneling.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	536	Semiconductor Characterization	Measurement techniques for semiconductor materials and devices. Electrical, optical, physical, and chemical characterization methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	537	Semiconductor Optoelectronics	Electronic states in semiconductors, quantum theory of radiation, absorption processes, radiative processes, nonradiative processes, photoluminescence, and photonic devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	538	Optoelectronic Devices	Provides graduate students with detailed theory and practical knowledge of semiconductors materials and optoelectronic devices such as light-emitting diodes, lasers, photodetectors and solar cells. Also discusses the applications of these devices. Offers not only classroom lectures but also demonstration of real-world experiments in research laboratories at ASU.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	539	Intro Solid-State Electronics	Crystal lattices, reciprocal lattices, quantum statistics, lattice dynamics, equilibrium, and nonequilibrium processes in semiconductors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	540	Fast Comput Electromagnetics	Method of moments, finite difference time-domain, finite element methods implemented using fast algorithms (wavelets, FMM, Nystrom) to gain high efficiency.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	541	Electromag Fields/Guided Waves	Polarization and magnetization; dielectric, conducting, anisotropic, and semiconducting media; duality, uniqueness, and image theory; plane wave functions, waveguides, resonators, and surface guided waves.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	543	Antenna Analysis and Design	Impedances, broadband antennas, frequency independent antennas, miniaturization, aperture antennas, horns, reflectors, lens antennas, and continuous sources design techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	544	High-Resolution Radar	Fundamentals; wideband coherent design, waveforms, and processing; stepped frequency; synthetic aperture radar (SAR); inverse synthetic aperture radar (ISAR); imaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	545	Microwave Circuit Design	Analysis and design of microwave attenuators, in-phase and quadrature-phase power dividers, magic tees, directional couplers, phase shifters, DC blocks, and equalizers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	546	Advanced Fiber Optics	Theory of propagation in fibers, couplers and connectors, distribution networks, modulation, noise and detection, system design, and fiber sensors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	547	Microwave SS Circuit Design I	Applies semiconductor characteristics to practical design of microwave mixers, detectors, limiters, switches, attenuators, multipliers, phase shifters, and amplifiers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	548	Coherent Optics	Diffraction, lenses, optical processing, holography, electro-optics, and lasers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	550	Transform Theory/Applications	Introduces abstract integration, function spaces, and complex analysis in the context of integral transform theory. Applications to signal analysis, communication theory, and system theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	551	Information Theory	Entropy and mutual information, source and channel coding theorems, applications for communication and signal processing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	552	Digital&Wireless Communication	Complex signal theory, digital modulation, optimal coherent and incoherent receivers, channel codes, coded modulation, Viterbi algorithm.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	553	Coding and Applications	Introduces algebra, block and convolutional codes, decoding algorithms, turbo codes, coded modulation, private and public key cryptography.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	554	Probability & Random Processes	Applies statistical techniques to the representation and analysis of electrical signals and to communications systems analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	556	Detection/Estimation Theory	Combines the classical techniques of statistical inference and the random process characterization of communication, radar, and other modern data processing systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	557	Broadband Networks	Physics of wireless and optical communications. Broadband multiplexing and switching methods. Blocking and queuing analysis. Network optimization, routing, and economics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	558	Recent Advances in Communicatn	Cellular systems, path loss, multipath fading channels, modulation and signaling for wireless, diversity, equalization coding, spread spectrum, TDMA/FDMA/CDMA.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	559	Wireless Networks	Design principles of cellular networks. Multiple access control protocols for wireless systems. Wireless routing and TCP/IP. Mobile management. Call admission control and resource allocation (e.g., power control and rate control). Wireless security. Future-generation wireless networks. A previous course in random signal theory is required to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	562	Nuclear Reactor Theory&Design	Principles of neutron chain reacting systems. Neutron diffusion and moderation. One-, two-, and multigroup diffusion equation solution methods. Heterogeneous reactors. Nuclear fuel steady-state performance. Core thermal-hydraulics. Core thermal design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	563	Nuclear Rx Dynamics&Diagnostics	Time-dependent solution to neutron diffusion equation. Reactor kinetics and reactivity changes. Dynamics, stability, and control of reactor systems. Modeling neutronic and thermal processes. System characterization in time and frequency domains. Reactor surveillance and diagnostics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	564	Interdisciplin Nuclear Pwr Ops	Nuclear power plant systems. Studies interrelationship and propagation of effects that systems and design changes have on one another, especially in relation to nuclear power plant safety and operations. Case studies and design projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	565	Solar Cells	Introduction to the generation and utilization of electricity from solar energy. Exploration of the science and engineering of direct conversion (photovoltaics), including the design, fabrication, and operation of solar cells, and the construction and performance of solar cell modules. Prior knowledge of properties of electronic materials is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	566	Adv Device Modeling & Simulatn	Understanding semi-classical and quantum transport theory in conjunction with device simulations at the nanoscale. Prior knowledge of semiconductor device theory, quantum mechanics and classical semiconductor device simulation is necessary to be successful in this class.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 566 or EEE 598 (Advanced Device Modeling)
EEE	571	Power System Transients	Simple switching transients. Transient analysis by deduction. Damping of transients. Capacitor and reactor switching. Transient recovery voltage. Travelling waves on transmission lines. Lightning. Protection of equipment against transient overvoltages. Introduces computer analysis of transients.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	572	Advanced Power Electronics	Analyzes device operation, including thyristors, gate-turn-off thyristors, and transistors. Design of rectifier and inverter circuits. Applications such as variable speed drives, HVDC, motor control, and uninterruptable power supplies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	573	Electric Power Quality	Sinusoidal waveshape maintenance; study of momentary events, power system harmonics, instrumentation, filters, power conditioners, and other power quality enhancement methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	574	Computer Solution of Power Sys	Algorithms for digital computation for the Newton and fast-decoupled power flow problem, and fault analysis. Sparse matrix and vector programming methods, creation of elimination trees, network equivalencing, solution of the least squares problem, introduction to state estimation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	575	Power System Stability	Dynamic performance of power systems with emphasis on stability. Modeling of system components and control equipment. Analysis of the dynamic behavior of the system in response to small and large disturbances. Knowledge of EEE470, 471 and 473 (or equivalents) is required to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	576	Power System Dynamics	Dynamic performance of power systems with emphasis on control. Modeling of control equipment, FACTS devices, wind generators, and nonlinear loads. Design of power system stabilizers. Prior knowledge of electric power devices, power system analysis, and electrical machinery is required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	577	Power Engr Operations/Planning	Economic dispatch, unit commitment, dynamic programming, power system planning and operation, control, generation modeling, AGC, and power production.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	579	Power Transmission/Distributn	High-voltage transmission line electric design; conductors, corona, RI and TV noise, insulators, clearances. DC characteristic, feeders voltage drop, and capacitors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	581	Filtering Stochastic Processes	Modeling, estimation, and filtering of stochastic processes, with emphasis on the Kalman filter and its applications in signal processing and control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	582	Linear System Theory	Controllability, observability, and realization theory for multivariable continuous time systems. Stabilization and asymptotic state estimation. Disturbance decoupling, noninteracting control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	585	Security & Privacy Network Sys	Comprehensive understanding of critical cyber security and privacy threats as well as corresponding solutions in emerging wireless networks, mobile systems, social networks, Internet-of-Things, critical infrastructures, cloud computing, big data analytics, wearable and edge computing, and mobile health. Requires prior knowledge of communications systems or computer networking to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Elect, Comp and Energy Engr (ECEE) or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only EEE 585 or EEE 598 (Adv Topics in Wireless & Internet Security) or EEE 598 (Selected Topics in Network Security)
EEE	586	Nonlinear Control Systems	Stability theory, including phase-plane, describing function, Liapunov's method, and frequency domain criteria for continuous and discrete, nonlinear, and time-varying systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	587	Optimal Control	Optimal control of systems. Calculus of variations, dynamic programming, linear quadratic regulator, numerical methods, and Pontryagin's principle.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	588	Design Multivar Control Sys	Practical tools for designing robust MIMO controllers. State feedback and estimation, model-based compensators, MIMO design methodologies, CAD, real-world applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	589	Convex Optimization	Linear algebra and convex optimization. Vector spaces, matrix algebra, linear programming, Lagrange multipliers, Karush-Kuhn-Tucker (KKT) conditions, duality theory and algorithms for convex optimization. Newton's method, gradient and steepest descent methods. Algorithms for unconstrained, equality constrained and inequality constrained problems, which include interior point methods. Applications to approximation and data fitting and some geometric problems. Applications to signal processing, communications and control systems. Background in linear algebra necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or SBHSE, SCAI, SEMTE or SSEBE graduate student; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
EEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD students
EEE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	606	Adaptive Signal Processing	Principles and applications of adaptive signal processing, adaptive linear combiner, Wiener least-squares solution, gradient search, performance surfaces, LMS/RLS algorithms, block time/frequency domain LMS.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	607	Speech Coding Multimedia Comm	Speech and audio coding algorithms for applications in wireless communications and multimedia computing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	625	Advanced VLSI Design	Practical industrial techniques, circuits, and architectures appropriate to high-performance and low-power digital VLSI designs such as microprocessors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	627	Oversampling Sigma-Delta Data	Introduces design and analysis of sigma delta oversampled data converters from an IC design perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	4		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	641	Adv Electromagnet Field Theory	Cylindrical wave functions, waveguides, and resonators; spherical wave functions and resonators; scattering from planar, cylindrical, and spherical surfaces; Green's functions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	643	Adv Topics Electromagnet Rad	High-frequency asymptotic techniques, geometrical and physical theories of diffraction (GTD and PTD), moment method (MM), radar cross section (RCS) prediction, Fourier transforms in radiation, and synthesis methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	686	Adaptive Control	Main topics covered: adaptive identification, convergence, parametric models, performance and robustness properties of adaptive controllers, persistence of excitation, and stability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering MS, MSE, or PHD student or Master of Engineering student
EEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	731	Advanced MOS Devices	Threshold voltage, subthreshold current, scaling, small geometry effects, hot electrons, and alternative structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	3		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-12		Prerequisite(s): Electrical Engineering PhD students
EEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student

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EEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Electrical Engineering Program	1-15		Prerequisite(s): Fulton Electrical, Computer and Energy Engineering (ECEE) graduate student or POLY, SBHSE, SCAI, SEMTE or SSEBE graduate student
EET	406	Control System Technology	Control system components, analysis of feedback control systems, stability, performance, and application.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3-4		Pre-requisites: EST 310; MAT 266; Credit for EET 506 or EET 406
EET	408	Digital Real-Time Control	Analysis, simulation, and design of discrete systems. Approach taken in this class begins with the analysis, simulation and design of a continuous system, which yields an s-based, transfer function compensator. Then, this compensator is transformed into a z-based transfer function, which can be realized with a difference equation in a microcontroller.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EET 406; Credit is allowed for only EET 408 or 494 (Digital Realtime Control)
EET	430	Instrumentation & Measurement	Instrumentation and measurement techniques, sensors operating principles. Signal and error analysis. Signal conditioning and data acquisition.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 310; Credit is allowed for only EET 430 or 530
EET	506	System Dynamics and Control	Time, frequency, and transform domain analysis of physical systems. Transfer function analysis of feedback control systems performance and stability. Compensation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EET 406 or EET 506
EET	508	Digital Real-Time Control	Sample data control techniques and applications to process control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EET	530	Electronic Test Syst & Apps	Analysis, design, and application of electronic test equipment, test systems, specifications, and documentation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only EET 430 or EET 530
EGR	101	Found of Eng Design Proj I	Introduces engineering as a profession, critical thinking in engineering design and modeling, team dynamics, engineering communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		
EGR	102	Found of Eng Design Proj II	Development and experimental verification of engineering models, engineering design, data acquisition, critical analysis of data, introduction to CADD, engineering communications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 101; Pre- or corequisite(s): MAT 170 or higher OR Visiting University Student
EGR	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
EGR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	201	Use-Inspired Design Project I	Design, professionalism, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 102; MAT 265 or 270 with C or better OR Visiting University Student
EGR	202	Use-Inspired Design Project II	Design, problem solving, and engineering practice developed in a multidisciplinary project setting.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 104 or TWC 104 with C or better; EGR 201 with C or better OR Visiting University Student
EGR	216	EGR Electrical Fundamentals	Introduces modeling of electrical systems using mathematical and scientific principles. Covers electrical circuit analysis techniques including Kirchhoff's and Ohm's laws, series and parallel circuit elements, equivalent elements and circuits, and nodal analysis. These techniques are developed for DC, AC, and transient conditions. Also introduces the basic structure of a modern electronic measurement system and relates this structure to measurement accuracy, precision and resolution.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only EGR 216 or EGR 294 (Engineering Fundamentals I) OR Visiting University Student

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EGR	217	Engr Mechanics Fundamentals	Provides a foundation in the theory and principles of statics and dynamics. Examines the effect of forces acting on particles and rigid bodies. Extensively uses vector mechanics. Statics addresses the topics of equilibrium in two and three dimensions, to include distributed loads, trusses, frames, friction and the moment of inertia. Dynamics addresses kinematics and kinetics of particles.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better OR Visiting University Student
EGR	218	Materials and Manufact Process	Applies material properties and manufacturing processes to the design and fabrication of engineered artifacts.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 or 114 with C or better OR Visiting University Student
EGR	219	Computational Modeling Eng Sys	Introduces computing that develops software to find solutions to engineering problems. Students write and document code to solve problems in data acquisition, modeling of physical systems, and optimization.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MAT 266 or 271 with C or better; Pre- or corequisite(s): MAT 274 or 275 OR Visiting University Student
EGR	240	CADD and Solid Modeling	Uses 3-D solid modeling software to model mechanical parts and produce valid engineering drawings, including use of geometric dimensioning and tolerancing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		
EGR	280	Engineering Statistics	Applications-oriented introduction to statistics with computer-based experience using statistical software for formulating and solving engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Prerequisite(s): MAT 265 or 270 with C or better OR Visiting University Student
EGR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	303	Mechanical Systems Project I	Analyze, design, implement and characterize a mechanical system through an in-depth mechanical system design project. Project includes modeling, analysis and measurement of the dynamic behavior of the mechanical system. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	304	Embedded Sys Design Project I	Design, implement and debug an embedded electromechanical system through an in-depth design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	305	Robotics Systems Project I	Analyze, design, implement and debug a robotic electromechanical system through an in-depth robotic system design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 216 with C or better; EGR 219 with C or better
EGR	306	Automotive Systems Project I	Analyze, design, implement and verify an automotive system through an in-depth design project. Develops professional and engineering skills in this project setting.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	307	Humanitarian Eng Project I	Provides students with the opportunity to work on a real-world project that is or will be taking place "in the field," in a part of the world with fewer material resources than most places in the United States. Builds the skill sets of students who are interested in pursuing development-related work after graduation. Course is team-based, project-focused and extremely hands-on. Emphasizes skills development on equal par as working with peers, mentors and in-field partners.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing OR Visiting University Student
EGR	313	Mechanical Systems Project II	Applies design principles to conceptualize, implement and characterize a fluid and/or thermodynamic system in a project setting. Project emphasizes communication with project stakeholders; applying an appropriate design approach in the context of a fluid and/or thermodynamic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 303 with C or better; EGR 340 with C or better OR Visiting University Student
EGR	314	Embedded Sys Design Project II	Applies design principles to conceptualize, implement and characterize an embedded electromechanical system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an embedded system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 304 with C or better

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EGR	315	Robotic Systems Project II	Applies design principles to conceptualize, implement and characterize an electromechanical robotic system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of a robotic system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 305 with C or better; EGR 455 with C or better
EGR	316	Automotive Systems Project II	Applies design principles to conceptualize, implement and characterize an automotive system in a project setting. Project emphasizes communication with project stakeholders; applying a human-centered design approach in the context of an automotive system; critical thinking in developing system specifications and evaluating a prototype relative to these specifications; and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 306 with C or better
EGR	317	Humanitarian Eng Project II	Applies design principles to conceptualize, implement and characterize an engineered system that addresses a humanitarian objective in a project setting. Project emphasizes communication with project stakeholders, applying an appropriate design approach, thinking critically in developing system specifications and evaluating a prototype relative to these specifications, and increasing technical competence.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): minimum junior standing
EGR	321	Water Resource Systems	Fundamentals of water supply and surface water hydrology in the context of the engineering, design and analysis of water resources systems. Places particular emphasis on those aspects of water systems that apply in the context of the developing world as well as in the context of environmentally sustainable systems. Course delivery is designed for engineering students with a broad understanding of engineering fundamentals but without specialist civil engineering knowledge.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better
EGR	325	Water and Wastewater Treatment	Essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies. Provides a fundamental basis for understanding sustainable water and wastewater treatment processes and their design considerations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework to strengthen and emphasize importance of adequate practices used in operation and design of engineered water and wastewater treatment systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): CHM 113 with C or better; EGR 321 with C or better; Credit is allowed for only EGR 325 or ERM 302 OR Visiting University Student
EGR	330	Design of Electrical Systems	Overview of electrical system architectures and components used in design of smart electrical and electromechanical systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
EGR	334	Analog-Digital Interface	Signal processing and operational tools that lie between sensors and digital data processors developed from a system perspective. Includes selection, deployment and analysis of sensors, analog signal processors and converters as well as their appropriate power supplies and the impact of all these components on system performance and cost. Uses experimental and simulation tools to demonstrate typical-use cases for medical, military, industrial and consumer applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better OR Visiting University Student
EGR	338	Microcontrollers in Smart Sys	Microcontroller implementation of smart systems. Microcontrollers applied to control dynamic systems, including the interface with sensors and actuators as well as developing simple open- and closed-loop control laws.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	340	Engineering Thermo-Fluids I	First and second laws of thermodynamics, systems, processes, equations of state, property tables. Fluid statics, conservation of momentum, Bernoulli's equation, applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 121 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
EGR	343	Mechanics of Solid Materials	Studies strength and physical performance, such as deformations and load-carrying capacity, of natural and artificial solid structures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
EGR	360	Concepts in Auto Engineering	Fundamental engineering principles as they apply to the design of ground vehicles used for the transportation of individuals or materials.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 202; Credit is allowed for only EGR 360 or EGR 394 (Intro to Concepts in Automotive Engineering)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
EGR	363	Auto Powertrain & Thermal Sys	Internal combustion engine (ICE) design in the context of automotive systems and heat management in vehicle systems, including thermal design of engine and transmission cooling systems. Operating characteristics and efficiencies of the ICE, terminology and abbreviations used in the automotive industry, contemporary fuels and the latest hybrid technology, CAFE standards and EPA vehicle emissions standards, lubrication systems and fluids appropriate for a given design, and current and future standards requirements.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): EGR 340 with C or better if completed
EGR	370	Welding Survey	Theory and practical application of the most widely used industrial welding processes; introductory welding, fundamental welding metallurgy, weldment design and weld cost estimating; lab experiences using SMAW, GTAW, GMAW, FCAW, RSW, SW, OFC, OAW, PAC, and brazing. Aligns with the American Welding Society (AWS) SENSE standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
EGR	371	Best Practice Humanitarian Eng	Technological and process-based best practices for engineering students to gain applied competence in low-cost and low-tech appropriate methods and technologies for small-scale technical problems in local and international humanitarian development contexts.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering major; junior or senior standing
EGR	380	Advanced CADD & Solid Modeling	Advanced techniques and practices of solid modeling and drafting, including motion, Finite Element Analysis (FEA), and sheet metal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 240; Credit is allowed for only EGR 380 or EGR 394 (Advanced CADD & Solid Modeling) OR Visiting University Student
EGR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	401	Professional Design Project I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; EGR 313, 314, 315 or 316 with C or better OR ENG 101, 105, or 107 with C or better; MFG 318 with C or better
EGR	402	Professional Design Project II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 401 with C or better taken within one previous term
EGR	425	Unit Treatment Tech and Sys	Addresses fundamental concepts of unit treatment technologies and the scientific and engineering principles that govern the proper design, operation and management of these systems. Course is divided into two overlapping major categories of unit treatment technologies: air-pollution controls and soils/groundwater remediation. Enhances understanding of the unit treatment technologies by reviews of dimensional analysis, mass transport mechanisms, mass balances, modeling, kinetics and reactors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 425 or ERM 402 OR Visiting University Student
EGR	426	Integrated Solid Waste Sys	Addresses the fundamental concepts of solid waste, pathways and transformation processes following the from cradle-to-grave approach. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes describing the present solid waste systems as an integrative set of functional units. Considers physical, chemical and biological transformations of the solid waste, together with the existing technologies and practices for management, treatment and disposal of the solid waste. Includes a specific overview of sustainable solid waste practices such as waste minimization, pollution prevention, reuse and reclamation, together with current domestic and foreign regulations. Addresses planning and design of solid waste operations and facilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 426 or ERM 432 or ERM 532 OR Visiting University Student
EGR	427	Princ of Hazard Waste & Mat	Trains future environmental engineers and professionals in fundamental hazardous waste and materials concepts. Addresses regulatory requirements; materials hazard communication; material safety concepts; types of hazardous waste/materials (chemical, radioactive, and infectious); risk assessment and routes of exposure; personal protective equipment; prudent practices; treatment; storage and disposal of hazardous waste/materials through the lens of the cradle-to-grave concept. Gains knowledge about the hazardous waste enforcement processes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 325 with C or better; Credit is allowed for only EGR 427 or ERM 401 or ERM 501 OR Visiting University Student

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EGR	430	Design Fab Arch Elect Devices	Comprehensive introduction to the design, operation, production and application of the most common semiconductor devices and categories of integrated circuit. Demonstrates the close interaction among materials, semiconductor physics and circuit performance, especially in terms of the applications and economics of digital systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better OR Visiting University Student
EGR	431	Power Management	Devices and techniques to supply and manage power in electrical systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 330 with C or better
EGR	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
EGR	433	Transforms & Systems Modeling	State-space and transform-domain modeling and analysis of electrical and electromechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 455 with C or better; MAT 274 or 275 with C or better; Pre- or corequisite(s): MAT 342 or 343
EGR	438	RF Systems	Applies fundamental principles of electromagnetics to design and analyze engineered RF systems and applications. Introduces and describes transmission lines, Smith Charts, s-parameters, waves in free space, reflection and refraction and their use in engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): PHY 331; Credit is allowed for only EGR 438 or EGR 494 (Fundamentals of RF)
EGR	444	Engineering Design	Applies fundamentals of mechanics in analysis and synthesis of machine components and systems, with emphasis on stress and failure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 343 with C or better OR Visiting University Student
EGR	445	Mechanical Engineering Systems	Design and modeling of multicomponent electromechanical systems. Applications of computers, controllers, electronics using system hardware and software development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 219 with C or better; EGR 444 with C or better
EGR	455	Robotic Systems I	Analysis and design of robotic systems focusing on kinematics, dynamics, coordinate transformations and modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 217 with C or better; EGR 219 with C or better; Credit is allowed for only EGR 455 or EGR 545 or EGR 598 (Robotic Systems I) OR Visiting University Student
EGR	456	Robotic Systems II	Design of robotic systems focusing on dynamics, modeling and controlling a robot.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 455 with C or better; Credit is allowed for only EGR 456 or EGR 546 or EGR 598 (Robotics Systems II) OR Visiting University Student
EGR	463	Vehicle Elect Sys & Hybrid Sys	Basic theory and operation of hybrid electric drive systems of motor vehicles. Covers fundamentals of next generation electrification including: batteries technology, charging, power electronic operation. Emphasizes the principals of HEV energy management strategies and HEV modeling fundamentals.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 216 with C or better; EGR 363 with C or better OR Visiting University Student
EGR	465	Ground Vehicle Dynamics	Basic understanding of vehicle dynamics principles and a sufficient knowledge to analyze vehicle dynamic performance and associated chassis system design concepts. Understanding of various dynamical equations of motion governing vehicle behavior as well as computer simulation.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 363 with C or better OR Visiting University Student
EGR	475	Alternative Energy	Covers basic principles, thermodynamics and economics of alternative energy conversion technologies including solar photovoltaics, concentrating solar, wind, biomass, nuclear, fuel cells and energy storage. Briefly discusses conventional heat and power systems as they pertain to alternative energy integration. Introduces operating characteristics of renewable energy technologies through simulation and then reinforces through hands-on demonstrations and experiments with renewable energy systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, or PHY 151 with C or better; Credit is allowed for only EGR 475 or EGR 598 (Alternative Energy) OR Visiting University Student
EGR	476	Microgrid Design and Operation	Design, modeling, integration, operation and maintenance of microgrids. Simulation-based design is coupled with hands-on integration to provide a comprehensive approach to microgrid systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EEE 202, EGR 216, EGR 340, or PHY 151 with C or better; Credit is allowed for only EGR 476 or EGR 598 (Microgrid Design and Operation) OR Visiting University Student
EGR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
EGR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6		Prerequisite(s): Barrett Honors student

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EGR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EGR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		
EGR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
EGR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	520	Engineering Analysis I	Analytical methods for evaluation of engineering systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	521	Engineering Analysis II	Mathematical techniques for developing solutions of engineering problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 520; Credit is allowed for only EGR 521 or EGR 598 (Engineering Analysis II)
EGR	522	Stats Qulty Cntrl Manufact	Seven QC tools and control charts for data analysis and interpretation; Process capability, 6-Sigma, Lean Manufacturing, Quality system, Case study.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 522 or EGR 598 (Statistics for Engineers)
EGR	523	Finite Element Mod & Analysis	Analyzes machine elements, frames and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy. Introduces the fundamentals of finite element analysis as well as providing hands-on experience using finite element software to model, analyze and design structures.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 523 or EGR 598 (Finite Element Modeling & Analysis)
EGR	525	Lean Systems	Creates a framework and model of lean engineering and a methodology for applying lean practices to systems engineering as a basis for lean product development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	530	Principles System Engineering	Engineering is increasingly about complex systems. Addresses scale, scope and complexity increase that engineers need to consider to bring together technical and social issues in a highly integrated way as they design flexible, adaptable, robust systems that can be easily modified and reconfigured to satisfy changing requirements and new technological opportunities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; EGR 520
EGR	535	Innov&Design ofEngr Acad Set	Innovation plays an important role in the evolution of the field of engineering education. Explores innovation processes in a variety of contexts, including (but not limited to) engineering education research and methods, theory, dissemination, teaching and training within formal and informal academic settings.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	545	Robotic Systems I	Analysis and design of robotic systems focusing on kinematics, dynamics, coordinate transformations and modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 455 or EGR 545 or EGR 598 (Robotic Systems I)
EGR	546	Robotic Systems II	Design of robotic systems focusing on dynamics, modeling and controlling a robot.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 456 or EGR 546 or EGR 598 (Robotics Systems II)
EGR	550	Mechatronic Systems	Presents a clear and comprehensive approach to the area of mechatronic systems, including the sensors, actuators, microcontrollers and applications which are found at the heart of everyday products and devices. Provides a systems-level approach to integrating these elements into a functioning device.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student

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EGR	555	Mechatronics Device Innovation	Project-based course on the design of mechatronic devices to address needs identified by hospital-based clinicians. Students work in teams with physicians to develop a novel mechatronic device while in parallel an entrepreneurial mindset is fostered. The design process includes: needs finding; problem identification; prior art searches; strategy and concept generation; estimation; sketching; sketch modeling; machine elements, ergonomics and prototyping. Emphasizes the development of creative designs that is motivated by analytical models. Also includes lectures on specific aspects pertinent to novel devices including intellectual property, marketing, licensing and startups and lean launchpad for startups, provided by Skysong Innovations. Significant communication component as students present ideas in class and at an industry forum. Students also write a publication quality final paper, which they are encouraged to submit to a conference or journal.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only EGR 494 (Mechatronics Device Innovation) or EGR 555 or EGR 598 (Mechatronics Device Innovation)
EGR	556	System Control & Optimization	Topics include state-space models, Lyapunov stability, controllability and observability, optimization and optimal control, and nonlinear systems and control. Includes both theories and real-world engineering examples/demos, and students apply the advanced control system approaches to self-selected course projects. Prior knowledge in classical linear control theory is necessary to be successful in this course.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506
EGR	557	Foldable Robotics	Organized around new types of robots being developed in research labs and industry across the country, foldable robots are designed and built using layered, flat sheets of a wide variety of materials and folded up to create both form and motion. Design of these devices begins with initial prototypes and proceeds through implementation and optimization, with a focus on application-specific projects that seek to solve problems of cost, parallelism, complexity and time using a relatively fast and easy prototyping method. Students delve deeper into the analytical problems associated with foldable mechanisms in topics such as design, kinematics, manufacturing, dynamics, simulation, optimization and stiffness analysis. Familiarity with programming fundamentals, scripted languages like Python or Matlab, linear algebra, differential equations, calculus, trigonometry and vector math is strongly suggested.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only EGR 557 or EGR 494 (Foldable Robotics) or EGR 598 (Foldable Robotics)
EGR	560	Vehicle Dynamics and Control	Covers modeling, estimation, control and optimization of a typical vehicle (sub)system dynamics. Recent advances in automotive technology, such as vehicle electrification and automated/connected driving, further complicate vehicle (sub)systems as nonlinear multi-input-multi-output systems with unmodeled dynamics, structure uncertainties and external disturbances. Thus, effective vehicle control design requires to sophisticatedly combine advanced control theory with knowledge of vehicle characteristics. To achieve this goal, the course introduces a variety of modeling, advanced control, estimation and optimization techniques for typical vehicle (sub)systems. Discusses applications of control theories to various vehicle (sub)system dynamics through examples inspired by pertinent research projects. Extensively utilizes co-simulation between Matlab/Simulink and CarSim® for vehicle dynamics analysis, vehicle control design and verification.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only EGR 560 or EGR 598 (Vehicle Dynamics and Control)
EGR	565	Qualitative Meth in Eng Ed	Provides a deep, empirical exposure to interpretive research methods in engineering education research.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	572	Quant Meth in Eng Ed Res	Specific quantitative analysis techniques used in the field of engineering education, with special focus on instrument design, ANOVA and multiple regression. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	574	Eng Sys in Context	Provides a systems understanding of current trends in engineering education research to engage engineering education research graduate students with the latest developments in the field in which they will situate their research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student

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EGR	576	Examining Inequities in STEM	Provides a novel opportunity for students to learn about inequities that have persisted in STEM and to challenge the way inclusion is cultivated. Challenges students to become aware of the past, give context to the present and think creatively about new ways forward. Additionally, takes an entrepreneurial approach toward being inclusive. As both teachers and students, in developing critical consciousness, it is imperative that we refute the banking approach to education and constantly work to critically consider our realities. Adopts an inclusive, student-centered pedagogy. Facilitates learning through activities that provide exposure to and experience with critical content.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or non-degree seeking graduate student; Credit is allowed for only EGR 576 or EGR 598 (From Then Until Now: Examining Inequities in STEM)
EGR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	581	Sim. Manufac. Systems	Specific modeling and simulation tools used to understand and optimize manufacturing systems operations, with an emphasis on both model building and statistical interpretation of model output.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only EGR 581 or EGR 598 (Simulating Manufacturing Systems)
EGR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	602	Princ Ind Res	Practice of key components of independent research that include project planning, literature survey, interview, data collection and analysis, proposal development, technical writing and presentation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	608	Adv Simulation	Simulation has a central role in design, operation, optimization and evolution of complex systems. There are many tools but they have a common need for rigorous science/math, parameterized models and realistic validation. Uses and compares five common platforms.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	611	Complex Engineering Systems	Advanced concepts in design and evaluation of engineering systems: subsystems, systems architectures and seamless integration of subsystems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student
EGR	671	Application of Qual Methods	Provides a deep, situated exposure to making and handling data in qualitative engineering education research projects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 565

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EGR	673	App Quant Meth Eng Ed Res	Applies quantitative analysis techniques to an engineering education research project. Specific focus on data collection, instrument development, and ANOVA/regression analysis techniques. Prior coursework or experience with basic statistical techniques is necessary to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Engineering PhD student; EGR 572
EGR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EGR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	504	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
ELL	515	Structured Engl Immersion (SEI)	Addresses the role of language and culture in teaching, program types, and specific SEI strategies for teaching English Language Learners (ELLs).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELL	516	Advanced SEI Methods for ELLs	More fully prepares teachers for linguistically diverse classrooms in which there are students learning through SEI methodology.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	501	Env Life Sci: Grand Challenge	Introduces first-year graduate students to a range of fields related to the Environmental Life Sciences graduate program. Co-instructed by an interdisciplinary faculty team, combines overview lectures and active discussion of current literature in the fields of inquiry. Culminates in synthetic collaborative research proposals on topics that foster transdisciplinary approaches to environmental life science questions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
ELS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
ELS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ELS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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EMS	501	First Workshop and Orientation	Covers the four learning threads of the EMSL program: global context, strategic sustainability, communications and sustainability, and sustainability leadership. Students engage in meaningful group discussions, field trips and hands-on experiences directly tied to sustainability. Faculty, guest speakers and practitioners engage students in critical thought and apply sustainability theories into real-world scenarios.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): Executive Masters for Sustainability Leadership major
EMS	502	Global Context I	Examine global sustainability issues, determine materiality for their organization and practice communicating this information to critical stakeholders, i.e., translating the complex global context into compelling organizational realities. Applies tools to identify relevant risks and opportunities within their organizational context and investigates potential responses.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	503	Strategic Sustainability I	As a foundational course in strategic sustainability, focuses on sustainability as a strategic lens. Explores the interface among strategy, sustainability and ongoing success, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Identifies the different levels and implications of organizational maturity from a strategic sustainability perspective. Engages in systems mapping, planning and prioritizing methods, tools and techniques to identify and assess strategic opportunities.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	504	Comm & Sustainability I	This foundational course for professional communications aims to create chief sustainability storytellers. Helps students survey their internal communications environments, understand their target audiences and their unique customer centricities, and develop their voices through the use of proven story structures and techniques.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	505	Sustainability Leadership I	Focuses on emerging sustainability leadership. Students meld powerful and traditional leadership skills while challenging their prior knowledge with a multiple lens examination of leadership in a sustainability context. Provides a view of oneself to prepare students to better understand others. Students create the first phase of their personal plans for their unique needs and individual growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Pre- or corequisite(s): EMS 501 or SOS 501
EMS	506	Global Context II	Building on the skills gained in previous course work, explores proactive response strategies to material global sustainability challenges and opportunities. Examine how organizations can evolve from risk avoidance and compliance to innovation and thought leadership and explores what role they can play as sustainability leaders.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 502
EMS	507	Strategic Sustainability II	Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization both internally and externally. Students apply and integrate various science-based methods, used successfully by organizations large and small, for developing flexible action platforms for sustainable enterprises. Expects students to create a strategic vision and action plan for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 503
EMS	508	Immersive Experience	The EMSL program focuses on sustainability leadership and organizational design and development; students directly interact with numerous executive-level sustainability leaders and strategists who work in diverse organizations. During a week-long stay in Washington D.C., EMSL students also interact and work on teams with other members of their student cohort. The final assignment is development of a plan for a sustainability leadership capstone project.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership - Executive EMSL student; minimum 3.00 GPA
EMS	509	Comm & Sustainability II	Focuses on audiences and looks at how and where students are telling their stories of sustainability. Students map internal, external and target audiences/markets, strategize channels to reach them with their sustainability stories, and create multi-channel communications plans that incorporate modes of engagement for all audiences.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 504

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EMS	510	Sustainability Leadership II	Challenges prior definitions of systems, responsibility and community from a sustainability and leadership perspective. Also provides a toolbox for leading with sustainability as a fundamental success platform. Provides information needed for students to better understand others, a necessary skill to be able to persuasively lead others to transform their organization into a sustainable enterprise. The focus shifts away from being centered around oneself and towards a focus on audience/stakeholders. Students continue to develop their personal leadership skills.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 505
EMS	511	Global Context III	Expands student perspectives beyond the needs of their organizations and considers what could be gained from industry and cross-industry collaborations. Assesses the implications of changes in leadership perspectives to their organizational contexts.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 506
EMS	512	Strategic Sustainability III	Focuses on expanding efforts for strategic planning and sustainable success beyond the bounds of a given enterprise through strategic collaboration, partnering, innovation and resource development. Applies strategic sustainability as a tool for developing synergistic collaborations and driving innovation for more sustainable enterprises and enterprise systems. Also develops sustainability-informed collaborative approaches to identify and garner resources for strategic imperatives.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 507
EMS	513	Comm & Sustainability III	Ignites the storyteller within as students learn to think like authors; craft their stories in scenes; and produce their presentations to entertain, educate and engage their audiences to move them to action. Reveals the students' transformation into courageous storytellers in presentations that combine their compelling narratives with captivating visual storytelling. Also creates social media editorial calendars to publish their stories to help express their thought leadership in sustainability online. By the end of this course, students learn how to own any room, from the boardroom and break room to the chat room and living room.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 509
EMS	514	Sustainability Leadership III	Focuses on transformational leadership for global success, which requires students to identify and apply pathways to inspire, persuade and influence others to act toward a shared global vision. Some of the challenges that all future sustainability leaders face are future orientation; reframing organizations to be globally scalable yet locally focused; and redefining success and growth using sustainability as a success lens. These are just a few of the challenging tasks that sustainability leaders face. Importantly, sustainable leadership involves being an effective change leader, and this course provides the tools and learning needed to initiate and sustain change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 510
EMS	515	Capstone	In this online-only capstone course, students complete drafts of the major deliverables leading to the completion of their capstone. Throughout this process, faculty advise and provide feedback to students.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 513, 514
EMS	516	Capstone Course EMSL Students	Final and culminating course in the EMSL sequence. As such, via initiation of a sustainability project, students apply knowledge and skills learned in all preceding EMSL courses and, especially, what was learned during the "immersive" course taught in Washington D.C. The final project an ideation and proposal for a sustainability leadership project in a specific organization. Thus, students actually initiate that project, track and report its progress, and reflect on the experience going from plan to implementation.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 508
EMS	522	Mastering the Global Context	Leaders in any organizational context face an increasingly connected and transparent world where social and environmental issues must be weighed in everyday decisions, requiring increasingly more proactive response strategies to meet stakeholder expectations and adapt to market and policy dynamics. Explores iconic sustainability issues and trends and their impact on their organization, institutions, communities and stakeholders. Applies tools to identify the relevant risks and opportunities within their organizational context and evaluate and prioritize relevant solutions and management approaches.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510

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EMS	523	Strategic Sust and Leadership	As sustainability becomes a core strategic goal of any organization, it impacts all aspects of the organization from informing risk and reward to the definitions and dimensions of innovation and overall success. Explores the interface between strategy and sustainability, developing a framework for strategic sustainability that underpins authentic and transparent strategic efforts. Uses reframing, re-visioning and backcasting via a sustainability lens as constructs for introducing strategic sustainability across all aspects of an organization. Explores and applies multiple sustainability-informed approaches, methods and tools to identify, assess and recommend strategic opportunities and adaptable action-pathways. Upon completion, students should be able to use strategic-sustainability knowledge to integrate and apply emerging sustainability approaches and to create strategic visions and action plans for an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	524	Sustainability Storytelling	Fundamentals of applying storytelling to sustainability. Leads students through the power of storytelling and effective communications in modern business, nonprofit and government settings. Discovers the why of storytelling, and the neuroscience and anthropology behind its effectiveness. Students learn about communication styles within leadership, their own personal communication strengths and weaknesses, discern the barriers to persuasive communication and storytelling within sustainability, how to remedy common communication missteps, and how to better understand and engage audiences by making them the "hero of the story." Uses digital tools to create and deliver compelling sustainability communications and presentations to any audience, anywhere to enhance the efficacy of sustainability leadership within and outside of an organization.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	525	Transformative Leadership	Melds traditional leadership applications with powerful skills aimed to develop or reawaken innate desires to effect change. Challenges prior knowledge and assumptions with multiple lenses of leadership within a sustainability context while teaching how to lead others. Critically examines prior definitions of systems, responsibility and community from the perspective of sustainability and leadership and provides a toolbox for leading with sustainability as a fundamental success platform. Students create a personal leadership plan for their unique needs and personal growth toward sustainability leadership.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 508 or 510
EMS	586	Intro to MSL Capstone	Students select and prepare for their final capstone project in the MSL program. Students have an opportunity to present and discuss their concepts and plans with faculty and with other students in the cohort. Students also learn project management techniques for completing their capstone project.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability Leadership MSL student; EMS 502; EMS 503; EMS 504; EMS 505; SOS 501
EMS	587	MSL Capstone Prep	Students take their culminating capstone project from proposal to hands-on implementation. Students connect, network, leverage, test, adapt and finally implement their capstone projects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): EMS 586
EMS	588	MSL Capstone	Students complete and fully implement their capstone projects.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): EMS 587
EMS	589	MSL Capstone Project Prep	One challenge for sustainability leaders is the translation of an idea to an actionable project or program which can lead to sustainable outcomes. Guides students through the initiation and planning stages of a sustainability project, going from theory to hands-on implementation. The capstone is the student's idea in action, allowing him or her to learn to connect, network, leverage, test, adapt and finally implement sustainability solution.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): EMS 522; EMS 523; EMS 524; EMS 525; SOS 508; SOS 509
EMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	101	First-Year Composition	Discovers, organizes and develops ideas in relation to the writer's purpose, subject and audience. Emphasizes modes of written discourse and effective use of rhetorical principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): All students; For students for whom English is not the native language, enroll in ENG 107 (or WAC 107).
ENG	102	First-Year Composition	Critical reading and writing; emphasizes strategies of academic discourse. Research paper required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	105	Adv First-Year Composition	Concentrated composition course for students with superior writing skills; intensive reading; research papers; logical and rhetorical effectiveness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ACT English score of 26 or above, or SAT Verbal score of 660 or above (or SAT Verbal score of 620 or above if taken before 2016), or Accuplacer score of 8 or above; Credit is allowed for ENG 101 or ENG 105 OR Visiting University Student
ENG	107	First-Year Composition	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prereq(s): TOEFL score 560PBT/220CBT/83IBT+, or IELTS score >=6.5, or Global Launch ENG Prof score 80+, or ACT English score >=19, or SAT Verbal score >=520 (SAT Verbal score >=470 if before 2016), or Accuplacer score >=5 OR Visiting University Student
ENG	108	First-Year Composition	For students for whom English is not the native language. Critical reading and writing; emphasizes strategies of academic discourse. Research writing required. Satisfies graduation requirement of ENG 102.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 101 or 107 with C or better OR Visiting University Student
ENG	130	Prototyping Dreams	How do you build your dreams? Explores speculative design and inspirational prototyping as a way to imagine and organize worlds. These prototypes do not have to be functional or material, but they must be functional stories, effectively communicating the creator's vision with others. Surveys a number of creative paradigms for imagining alternative worlds that are more ethical and sustainable, and experiments with techniques for physical, digital, literary and artistic prototyping.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only AME 130 or ENG 130 OR Visiting University Student
ENG	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): freshman standing; maximum 25 hours
ENG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
ENG	200	Critical Reading & Writing/Lit	Introduces the terminology, methods, and objectives of the study of literature, with practice in interpretation and evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	201	World Literature	Classical and medieval periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	202	World Literature	Renaissance and modern periods. Selections from the great literature of the world in translation and lectures on the cultural background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	203	Intro to Health Humanities	Introduces the field of health humanities. Through readings in cultural studies of literature and other media, history of medicine, bioethics, disability studies, cross-cultural and global health, and related scholarly areas, introduces some of the fundamental challenges and debates in this growing interdisciplinary field. Also addresses questions of medical professional ethics and teaches structural awareness of the sociocultural aspects of health and health care.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	204	Topics in Contemporary Lit	Topics in contemporary literature, which may include narrative and medicine.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	205	Intro to Writing, Rhet, Lit	How do we understand the ways in which people in systems--both small and large--social, political, and economic, throughout the world use language and other symbolic resources to carry out work? Three fields of study take this kind of questioning especially seriously: studies in writing, studies in rhetoric, and studies in literacy. Inquiry--that persistent, deliberate commitment to question and to build methods sufficient to that questioning--is a generative force in each of these fields of study. Familiarizes students with such questioning traditions and to help them judge for themselves what each is good for. The goal is to strengthen your own repertoire and decision-making power for producing and circulating work (widely defined across material, print, and digital media) that matters in our risk-ridden world. Quite simply, then, this is a course in asking good questions and in evaluating responses to situations that spur questioning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	206	Intro to Literary Studies	Introduces the terminology, methods and objectives for interpreting and writing about literary and cultural texts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	207	English Language/Cultures I	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107; ENG 108
ENG	208	English Language/Cultures II	English communication and cultural awareness for international users of English. Relies on the many contexts of English use around the world to teach aspects of grammar, reading, writing, listening and speaking.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 107 with C or better; ENG 108 with C or better
ENG	210	Intro to Creative Writing	Beginning creative writing in genres other than poetry and fiction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	211	Intro to English Studies	Introduces key terms and conventions for analyzing and interpreting diverse literary and cultural texts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	213	Intro to the Study of Language	Language as code; phonetics, phonology, morphology, and syntax; the lexicon; language acquisition; sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	214	English Grammar and Usage	Fundamentals of English grammar (word and phrase structure), English usage (punctuation, grammatical correctness), and grammatical and usage theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	215	Strategies of Academic Writing	Advanced course in techniques of analyzing and writing academic expository prose. Writing is research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	216	Persuasive Writing Public Issue	Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. Papers are research based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	217	Writing Reflective Essays	Critical examination of the influences discourse has on formation of identity; narrative analyses of self and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	218	Writing About Literature	Advanced writing course requiring analytical and expository essays about fiction, poetry, and drama.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	220	Gender, Media and Culture	Introduction to gender and the media including magazines, films, advertising, new media, and other popular culture forms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Credit is allowed for only ENG 220 or WST 220
ENG	221	Survey of English Literature	Medieval, Renaissance, and 18th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	222	Survey of English Literature	Romantic, Victorian, and 20th-century literature. Emphasizes major writers and their works in their literary and historical contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	228	Introduction to Shakespeare	-	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 228 or 294 (Shakespeare for Teachers) OR (Introduction to Shakespeare)
ENG	229	Love and Lust in Medieval Lit	The medieval period, roughly 600-1500, cannot reasonably be called the "dark ages." Indeed, the Middle Ages provides us with a corpus of literature replete with complex characters struggling to live and love, dealing with sin and lust, unity and diversity, faith and reason within a tumultuous cultural milieu and religious rigor, all of which are feeling the winds of changes. Explores medieval literature, noting the astonishing differences from our own time, as well as surprising similarities. Western civilization, our own 21st century, for better or for worse, is indebted to the love and lust of the medievals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only ENG 229 or 294 (Love and Lust in Medieval Lit)
ENG	230	Introduction to Film Studies	Introduces the style and cultural significance of feature films.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	235	Intro to Contemp Theory	Introduces key ideas and concepts in contemporary critical and cultural theory. In addition to the "posts"--postmodernism, poststructuralism, post-Marxism, postcolonial studies, post-feminism and posthumanism--explores new theoretical formations that have emerged in response to our contemporary social condition, such as queer theory, trauma theory, disability studies, cognitive studies, the new "object-oriented" philosophies and materialist theories. And then there's the "trans" domains--transnationalism, transgender studies and transhumanism--which, like so many contemporary theoretical formations opens up new perspectives on where and how we live, who we are and even what we are. The contemporary theories studied in this course provide the tools for understanding 21st-century life and the limits and enjoyments of our humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 235 or ENG 294 (Literary Theory & Interdisciplinary Studies) or ENG 294 (Introduction to Contemporary Theory)
ENG	241	Literatures of the US to 1860	Surveys literary movements and genres from colonization to the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	242	Literature of US Post 1860	Surveys literary movements and genres from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	243	Intro to Writing Family Hist	Interdisciplinary writing course on theories, methodologies and issues in writing family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	244	Intro Research Fam Hist	Introduces research methods in family history.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	245	Popular Culture Issues	Selected topics in various forms of popular culture related to written texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	287	Beginning Workshop Poetry	Beginning writing of poetry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	288	Beginning Workshop Fiction	Beginning writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	301	Writing for the Professions	Advanced practice in writing and editing expository prose. Primarily for preprofessional majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student
ENG	302	Business Writing	Advanced interdisciplinary writing course designed to improve the workplace writing competence of W. P. Carey School of Business professional and preprofessional students. Lecture, discussion, case studies, cooperative learning, interactive, Internet, student presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): W. P. Carey major; ENG 102, 105, or 108 with C or better; minimum 55 hours or junior standing; Credit is allowed for only ENG 301 or ENG 302 OR Visiting University Student
ENG	303	Classic Backgrnds: English Lit	Readings of Greek and Latin literature in translation as they relate to literature in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	304	Critical Theories and Methods	Covers ideas and concepts in contemporary critical and cultural theory.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	305	Interpretive Theory	Develops interpretive practices necessary for English studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	307	Writing Science Fiction	Writing science fiction, primarily the short story.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	308	Form and History/Culture	Examines how literary and rhetorical forms are situated both historically and culturally.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	309	Rhetoric for Writers	Students identify, analyze and employ key concepts and theories of rhetoric to understand and compose written texts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	310	Intermediate Creative Writing	Intermediate creative writing in genres other than poetry, fiction, or science fiction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 with C or better OR Visiting University Student
ENG	311	Persuasive Writing	Advanced writing course that focuses on persuasive writing for diverse audiences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	312	English in its Social Setting	Introduces the sociolinguistic study of the English language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	313	Phonology and Morphology	The study of language sound-structure (phonology) and word-structure (morphology) in the framework of current linguistic theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; ENG 213 or SLC 201 with C or better OR Visiting University Student
ENG	314	Modern Grammar	Modern descriptive models of English grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	315	Medieval Lit in Translation	Medieval literature (insular and continental) in translation, from Beowulf to Malory (excluding Chaucer), emphasizing cultural and intellectual backgrounds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
ENG	317	Cross-Cultural Writing	Cultural differences and their impact on writing and/or their role in miscommunication and misinterpretation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	318	Life and Death of Lang	The history of language development, spread and contraction as well as thinking on where language may be going in the future. Discusses how languages differentiate and become new languages, how they mix with each other and how the development of writing can change this process. Maintains a focus on the ways speakers from different language communities have found to communicate through pidgin languages, bilingualism and languages of wider communication. Moreover, discusses the invention of new varieties and languages by people who feel their current choices do not fit their needs. Lastly, in considering what might be needed in the future, addresses issues such as machine translation, brain-to-brain communication, aspects of intergalactic communication posed in science fiction and interspecies communication.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 318 or ENG 394 (The Life and Death of Languages) OR Visiting University Student
ENG	319	Future of English	This transdisciplinary course investigates what varieties of English are currently used by whom and for what purposes, and attempts to predict the future of English and its significance at the individual, national and global levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 319 or ENG 394 (Future of English) OR Visiting University Student
ENG	320	Medievalism in Modern Culture	Studies the representation of Medieval narratives, characters, themes, myths, and images in modern culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	321	Shakespeare	Readings in Shakespeare's major comedies, tragedies, histories, romances and/or poems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	322	Westerns: Film & Short Stories	A survey of classical short stories and recent films. Focuses on Wister, L'Amour, Grey and Leonard.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 322 or ENG 494 (Westerns: Films and Short Stories) or ENG 494 (Westerns: Movies and Short Novels)
ENG	323	Rhetoric and Grammar	Practical course taught in the computer lab. Emphasizes rhetorical strategies and grammar for writers.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	324	Horror: Films & Short Stories	A survey of major writers since 1800, and of classic filmmakers. The historical development of horror in relation to Gothic and grotesque short stories and films.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	325	Restoration & the 18th Century	Writers and movements in nondramatic literature of the restoration and early 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	326	English Drama 1660-1800	English drama 1660-1800.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
ENG	327	English Studies Research	How to evaluate and conduct various research methods for different areas of English studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	328	The Novel to Jane Austen	From origins of prose fiction through the 18th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	329	19th-Century British Fiction	Includes such authors as Austen, Dickens, Eliot, and Conrad.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	330	19th-Century British Poetry	Romantic and Victorian poets studied in context.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	331	American Drama	Major works in the development of American drama from its beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	332	Race&Ethnicity in Lit/Culture	Investigates racial and ethnic dynamics through literature and culture.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	333	American Ethnic Literature	Examines America's multiethnic identity through works of literature that depict American ethnic, gender, and class sensibilities.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334 OR Visiting University Student
ENG	335	American Poetry	Themes and developments in American poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	336	Women, Film and Culture	Critical examination of the way films can reflect, reinforce or challenge mainstream cultural ideas about women.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 336 or WST 330 OR Visiting University Student
ENG	337	Major American Novels	Major American novels studied in their ethnically diverse literary, historical, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	338	Protest Literature	Examines traditions of social protest literature across a variety of historical periods and literary and rhetorical genres.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, or ENG 108 with C or better; minimum 24 earned hours; Credit is allowed for ENG 394 (Banned Literature), 338 or 440 (American Protest Novels)
ENG	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Dm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Dm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Dm Wrk:Pg to Stg&Scrn) OR Visiting University Student
ENG	342	20th-Century British/Irish Lit	Major works in the development of literature since 1900, studied in their historical and cultural contexts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	343	Crime: Film & Short Stories	A survey of classical crime fiction and recent crime films. From Poe, Doyle, Hammett and Chandler through Sayers, Highsmith, Grafton and Paretsky.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 343 or AMS 494 (Crime: Stories and Movies) or ENG 494 (Crime Fiction: Film & Short Stories)

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ENG	344	Int Family History Research	How to locate records, analyze and interpret evidence, and write a family history narrative.	N	RSC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	345	Selected Authors or Issues	Different topics may be offered. Film topics with lab may carry 4 credits. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
ENG	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
ENG	349	Global Literary Studies	Studies multiple literatures and cultures across the globe, often deploying transnational and comparative methodologies.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	350	Studies in Lit Hist&Traditions	Studies of one or more literary traditions or historical movements	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	352	Short Story	Development of the short story as a literary form; analysis of its technique from the work of representative authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353 OR Visiting University Student
ENG	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ENG	355	European Dramatic Traditions	Development of European drama since Aeschylus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	356	The Bible as Literature	Readings in the Jewish and Christian Scriptures in modern translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	359	Indigenous American Literature	Selected oral traditions and contemporary works by Indigenous American authors.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	360	Western American Literature	Critical examination of ideas and traditions of the literature of the western United States, including the novel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	361	Scriptwriting	The art of scriptwriting using 10-minute plays as the platform. Designed to help students learn craft techniques and to expose them to the various forms of the 10-minute script. Includes lectures, writing assignments, discussion, and criticism.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): first-year composition; credit is allowed for only ENG 361 or 394 (Scriptwriting)
ENG	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
ENG	364	Women and Literature	Approaches to issues of gender and representation in literature by and about women.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	365	History of Film	Development of motion pictures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3-4	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	366	Literature on Film	Studies literary texts and their adaptation to film.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	367	Environmental Literature&Film	Evaluates literary texts and films that address interconnected cultural, historical, and environmental issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	368	Art of the Personal Essay	Writing personal essays drawing on both research and personal experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)

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ENG	369	Science Fiction Studies	Development of science fiction and fantasy literature. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	370	Science, Values, & the Public	Examines science, communication, and a range of public opinion to understand science as a discourse of profound social power.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 35 hours; Credit is allowed for only BIO 315 or ENG 370
ENG	371	Rhetoric of Environmental Mvmt	Examines how language is used to conceptualize, clarify/obfuscate, and resolve problems among those who concern themselves with the disposition of natural resources.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	373	Pub in Literary Magazines	Analyzes the history, publishing preferences, editorial staff, and submission guidelines of literary magazines.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	374	Technical Editing	Fundamentals of editing technical and professional materials. Role of editors in analyzing, revising, and polishing manuscripts. Successful writer-editor dialogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	375	Titans of Business	Explores leading CEOs and corporations from a humanities perspective.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	376	Writing a Personal History	Interdisciplinary writing course emphasizing theories, methodologies, and issues of composing personal histories.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 376 or VTS 376 OR Visiting University Student
ENG	377	Editng Family Hist for Pub Auds	Fundamentals of editing family writing. Role of editors in analyzing, revising, and polishing manuscripts for publication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	378	Environmental Creative Nonfict	Lectures, discussion, and criticism concerning the literary history of nature writing and techniques of writing environmental creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	379	Travel Writing	Studies the genesis of travel writing, what theories inform travel writing, and the various genres of travel writing today.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	384	Gender&Sexuality Lit/Culture	Approaches to issues of gender and sexuality in literary and cultural texts. May focus on historical period, literary movement, genre, single author, literary theory, theme or other field of study.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	385	Career Develop English Majors	Theoretical and practical aspects of career planning related to skills and interests developed in English studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	386	American Gothic	The development of modern American Gothic as a literary form from Poe to Oates. Emphasizes the short story.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	387	Intermediate Workshop Poetry	Intermediate writing of poetry. Requires term paper or equivalent out-of-class written work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 287 with C or better OR Visiting University Student
ENG	388	Intermediate Workshop Fiction	Intermediate writing of fiction. Requires term paper or equivalent out-of-class written work.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 210 or 288 with C or better OR Visiting University Student
ENG	390	Methods of Inquiry	Studies in writing, rhetoric and literacy are multiple and diverse because these areas deal with complicated ways people create meaning, circulate meaning, and understand meaning in a variety of contexts and a variety of modal formats. Examines ways of developing research problems and questions, designing studies and conducting, reading and evaluating research in the areas of writing, rhetoric and literacy. Qualitative methods (e.g., case study, ethnographic methods, interviewing); historical methods (e.g., archival, document analysis and artifact interpretation); rhetorical analysis and discourse analysis; feminist approaches to research and analysis; and recent advances in research in the fields of rhetoric, writing and literacy studies. Investigates the many attitudes and assumptions about creativity and cultural work that make methods of inquiry as controversial as they are significant to contemporary public life.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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ENG	391	Writing in Context	How do we understand the ways in which people use written language to carry out work in professional, academic, social and/or personal contexts? How does our understanding of the ways writing is produced for an audience shift between and among these different contexts? More importantly, how do writers adapt their writing practices in order to facilitate audience understanding as well as cultivate an audience's capacity for action? Familiarize students with rhetorical practices that position them to read, assess and respond to the rhetorical demands of a wide range of writing contexts. Strengthens students' existing rhetorical skill sets and problem-setting capacities for producing and circulating work (widely defined across material, print and digital media) that responds to a range of problems in an applied manner. Assesses the rhetorical demands of writing contexts and in developing and producing tailored, audience-specific texts that forward work in complex, interdisciplinary environments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	392	History of Rhetorical Theory	Begins in ancient Greece with the rise of the art of public oratory (known as rhetoric) and ends in the present, an era dominated by mass media. Engages in a great deal of reading--lots of very old writings as well as some newer ones. Covers a great many topics and ideas; focuses by continually returning to the subject of public discourse. Challenging readings designed to emphasize the connection between systems of philosophy (or "worldview") and systems of communication. By focusing on big ideas, students become a better thinker and communicator in any chosen career.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	393	Theories of Literacy	While theories of literacy have, for the most part, been determined by the primacy of reading and writing script, more recent scholarship in literacy theory and history has served to challenge such limitations. Many contemporary perspectives on literacy view scripted text as one component of complex acts and practices of written communication that occur in social contexts. Studies that examine such communicative acts in their local contexts reveal that literate practices and the texts that are produced are imbued with social and cultural values and traditions and the needs and desires of individuals. As the statements above illustrate, theories of literacy themselves are embedded within the values and assumptions of individuals, institutions, and academic specialization. Examines some of these theories, their influences on academic scholarship and pedagogy, the ideological assumptions that inform them, and how we might view these theories within broader social-cultural landscapes.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	395	Combat in Film	Interdisciplinary approach to and qualitative method for analyzing war movies and military dramas as both historical and cinematic narratives that represent the experiences of infantry marines and soldiers in 20th- and 21st-century U.S. wars.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENG 394 (Combat in Film) or ENG 395 or FMP 395 or HST 306 (Combat in Film) or HST 395 or VTS 395 OR Visiting University Student
ENG	400	History of Literary Criticism	Major critics and critical traditions in the Western world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	401	Topics in Critical Theory	Major critical schools of recent decades--postcolonialist, psychoanalytic, deconstructionist, feminist, new historicist.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student

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ENG	403	Semantics	Program and methods of contemporary formal semantics. Characterizes knowledge of meaning as knowledge of truth conditions. The goal of semantics is thus to uncover the rules that allow the speakers of a language to know under what conditions any sentence is true; or in other words, to construct a theory of truth for natural language. Simple fragments including: predication, quantification, definite descriptions, simple temporal and modal expressions, and attitude verbs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 314 with C or better OR Visiting University Student
ENG	404	Studies 2nd Lang Acquisition	Specialized topics in second language teaching and learning, including theory, pedagogy, curriculum, and assessment.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better OR 8 credit hours of a second language earned within the last year; minimum 56 hours OR Visiting University Student
ENG	408	Gender,Sexualities & Literacies	Presents diverse perspectives on gender, sexualities and literacies from preschool to adulthood. Focuses on race, ethnicities, sexual orientation and gender identities to provide overviews of current research on gender, sexualities and ethnicities and examines how these subjectivities are expressed in multiple modes of communication. Explores representations and performances of gender and sexualities through literacy practices in sociocultural and educational contexts. Explores related issues through textbook readings, videos, websites, activities, online discussions and projects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): min 45 hrs; Crdit is allwd for only ENG 408 or WST 408 or ENG 494 (Gndr, Sexualities, & Lit) or ENG 598 (Gndr, Sexualities, & Lit) or MAS 598 (Gndr, Sexualities, & Li) or WST 494 (Gndr, Sexualities, & Lit) OR Visiting University Student
ENG	409	Analyzing Rhetoric	Provides students with the tools and methods by which the effectiveness, truthfulness, ethicality, and/or artistry of persuasive speech and language can be evaluated. Students take a systematic approach to analyzing rhetoric on a variety of selected topics.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 409 or ENG 494 (Analyzing Rhetoric: Fake News & Alternative Facts)
ENG	410	Writing for Publication	Lectures and conferences concerning techniques of writing for publication.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 and one 200-level literature course with C or better, OR New College undergraduate student with minimum 45 hours
ENG	411	Advanced Creative Writing	Advanced creative writing in genres other than poetry, fiction, creative nonfiction, or screenwriting.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 with C or better
ENG	412	Creative Nonfiction	Lectures, discussion, and criticism concerning techniques of writing creative nonfiction for publication.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310, 388 or 411 with C or better
ENG	413	History of English Language	Development of English from the earliest times to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 413 or LIN 517 OR Visiting University Student
ENG	414	Studies in Linguistics	Specialized topics in linguistics including phonology, syntax, semantics, pragmatics, discourse, language variation, and change.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; ENG 213 with C or better OR 1 year language study and minimum 56 hours OR Visiting University Student
ENG	415	Studies in Medieval Lit/Cultr	Medieval English and continental literature in translation, emphasizing cultural and intellectual backgrounds.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	416	Chaucer in Middle English	Yearly alternate between Chaucer's The Canterbury Tales and Troilus and Criseyde.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	417	Virtual Worlds/Global Communic	Explores the nature of virtual worlds and the multiple uses of these three-dimensional environments (also called metaverses) for new literate and global communications in the 21st century. Uses a combination of a textbook; Blackboard; popular virtual worlds, including Second Life (SL), and Internet resources (e.g., Web sites, e-discussion lists, YouTube videos) to explore the potential of virtual worlds. Explores the capabilities of several of the more than 70 virtual worlds for education, recreation, advancing social justice, global communication, socializing and networking. Participants critically examine the affordances of virtual worlds through readings, videos, online discussions, self-paced tutorials and brief reaction papers. Students receive demonstrations and guided tours by the professor and participate in individual and group explorations of virtual worlds	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for CMM 598 (Virtual Worlds) or ENG 417 or ENG 494 (Virtual Worlds) or MAS 598 (Virtual Worlds)
ENG	418	Renaissance Literature	Prose, poetry, and drama of the Renaissance Era with an emphasis on cultural history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	419	Writing for Podcasts	Focuses on digital communication skills, which are highly valued by companies and nonprofits. Increases awareness and understanding of how podcasts require specific attention to context, audience and meaning making. Emphasizes the theory and practical rhetorical conventions for social and digital media.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ENG 419 or ENG 494 (Writing in Digital Communities) OR Visiting University Student
ENG	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prereq(s): ENG 101, 105, or 107 w/ C or btr; ENG 200 w/ C or btr; one 200-level lit course w/ C or btr OR New College ugrad std; ENG 101, 105, or 107 w/ C or btr; min 45 hours; Credit is allowed for only ENG 420 or IAS 420 OR Visiting University Student
ENG	421	Studies in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	422	Special Topics in Shakespeare	Close examination in selected dramatic and/or nondramatic works.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	423	Renaissance Drama	Topics, authors, and themes in the drama of the Tudor and early Stuart periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	424	Milton	Selected prose and poetry, emphasizing Paradise Lost, Paradise Regained, and Samson Agonistes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	425	Studies in Romanticism	Romanticism in continental, British, and American literature and culture.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	426	British Culture and Empire	Examines British imperial culture in art and literature, 1870-1914, and postcolonial theory.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	427	Studies 18th-Cent Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	428	The Pre-Raphaelites	Visual and literary works by Victorian Pre-Raphaelites as works in themselves and through relations between images and texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ARS 435 or ARS 533 or ENG 428
ENG	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
ENG	430	Studies Victorian Lit/Culture	Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	431	Whitman and Dickinson	Evaluates the 19th-century American Literary Renaissance through the specialized examination of its poetry and authors in their historical context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student
ENG	432	The American Renaissance	Novels, poetry, short fiction, and criticism of the major literary figures of the early to mid-nineteenth century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR New College undergraduate student; minimum 45 hours OR Visiting University Student
ENG	434	Studies: Lit/Culture Americas	Literature and culture of North America, South America, and the Caribbean. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	435	Lits of Immigration/Diaspora	Specialized topics in literary and cultural representations of immigration and diaspora studied in an interdisciplinary context.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	436	Studies Anglophone Lit/Culture	Literary, social, and cultural issues of English-speaking former colonial territories. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	437	The American Novel, 1900 -1960	Developments in theory and practice of major novelists.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student
ENG	438	American Novel Since 1960	Major novelists of the period. Developments in theory and practice.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 w/ C or better; ENG 200 w/ C or better and one 200-level literature course w/ C or better OR New College undergraduate student; ENG 101, 105, or 107 w/ C or better; minimum 45 hours OR Visiting University Student

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ENG	439	Technoliteracies	Critically explores the nature of digital communications and expanded definitions of what counts as text and as literate expression in the 21st century. Emphasizes the 21st-century skills and abilities required for and fostered by digital communications (e.g., collaboration, multitasking, intertextual analyses) and examines the newest technologies that enable digital communications (e.g., digital storytelling, virtual worlds, social media, digital crafting, video gaming/modding). In doing so, focuses on the intersections of technologies and the arts as literate communications with implications for teaching and learning. Participants explore these topics through readings, videos and Web sites and by reflecting on their own experiences. Students respond to questions/prompts through online discussions, reflective thought papers, and media or virtual presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 439 or ENG 494 (Technoliteracies) or MAS 598 (Technoliteracies)
ENG	440	Studies in Amer Lit & Culture	Various genres in their literary, political, theoretical, and historical contexts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	441	Intro to Participatory Media	The spread of participatory media, ranging from zines, e-zines, podcasting and video production tools to video games and virtual worlds has led to significant changes in how we communicate, learn, collaborate, network and create. Introduces theory and research on participatory media and the changing nature of "literacy" in a media age to "literacies." Addresses key concepts and issues, such as language, identity, access and community. Explores these topics through engaging in readings, videos and Web sites; by reflecting on their own experiences; and by responding to questions/prompts through online discussions, thought papers, social media or virtual presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only CMN 598 (Intro to New Media) or ENG 441 or ENG 494 (Intro to New Media) or ENG 598 (Intro to New Media) or MAS 598 (Intro to New Media) OR Visiting University Student
ENG	442	20th-C Brit/Irish Lit/Culture	Major literary genres (novel, poetry, and drama) in their cultural and historical contexts. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	443	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit for only ENG 443 or ENG 494 (Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student
ENG	444	Interdisciplinary Lit&Culture	Uses methodologies from literary studies and other disciplines to understand a topic or problem. Interdisciplinary areas may include fields such as environmental humanities or American studies, as well as other areas of interdisciplinary study.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	445	Studies in American Realism	Writers and influences that shaped the development of literary realism. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	446	Visual Narratives	Reads, analyzes and crafts visual narratives including graphic novels, picturebooks, films, commercials and videogames.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520 OR Visiting University Student
ENG	447	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450

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ENG	448	Studies in Irish Lit/Culture	Themes and problems pertaining to Irish literature, film, and social and cultural history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	449	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
ENG	450	The British Novel	Focuses on the British novel from the 18th century to the present.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Pre-requisites: ENG 200 with C or better and one 200-level literature course with C or better OR New College undergraduate student and minimum 45 credits
ENG	452	Studies in the Novel	May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	453	Studies in the American Novel	Poetics and politics of the novel, 18th through 21st centuries. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	454	Gender and Literature	Focuses on the representation of gender in literature.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ENG	455	Contemporary Women Writers	Critical examination of literature by contemporary women writers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
ENG	457	Studies in American Poetry	May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	458	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
ENG	459	Studies African Amer/Carib Lit	Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; minimum 45 hours; Credit is allowed for only AFR 459 or ENG 459 OR Visiting University Student
ENG	460	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Hispanic, and Asian American.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better; one 200-level literature course with C or better OR Integrative Sciences & Arts or New College undergraduate student; minimum 45 hours; Credit allowed for only ENG 460 or WST 467 OR Visiting University Student
ENG	461	Studies in Women and Lit	Advanced topics in literature by or about women.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours

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ENG	462	Africana Literature	Focuses on the literature of the African Diaspora, including texts from the Caribbean, the Americas, and Africa. May be repeated for credit when topics vary.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	463	African American Literature	Thematic and cultural study of African American literature.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR Integrative Sciences and Arts or New College undergraduate student with minimum 45 earned hours
ENG	464	Great Directors	Studies the work of one or more influential directors.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	465	Studies in Film	Advanced topics in cinema.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3-4		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	466	Studies in International Film	Studies non-American narrative film.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	467	American Film Musicals	A cultural history of American film musicals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	468	Environmentl Literary Criticism	Evaluates the disparate critical practices that constitute what is the emerging literary project known as "ecocriticism" or "environmental literary criticism."	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	469	Science and Literature	Historical and theoretical links between science and literature, from Francis Bacon to the present, examined in cultural context. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	470	Symbols/Archetypes Child Lit	Various critical approaches and recurring themes studied in relation to classical and contemporary children's literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student
ENG	471	Literature for Young Adults	Prose and poetry that meet the interests and capabilities of junior high and high school students. Stresses recent literature. A passing grade of at least "C" (2.00) required before students are permitted to student teach in English.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	472	Rhetorical Studies	Developments in theory and practice of major rhetorical inquiries.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ENG	473	Crit Approaches Children's Lit	Reads picture books, chapter books and fairy tales and analyzes these texts through multiple critical lenses (e.g., feminist, Marxist, historical, structuralism, formalist).	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 473 or ENG 394 (Reading Children's Literature)
ENG	474	Review Writing	Advanced writing course exploring rhetorical approaches to writing reviews.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Completed ENG 102, 105, or 108 with C or better; Minimum 56 hours
ENG	475	Popular Periodical Writing	Advanced writing course analyzing and imitating genres in popular periodical writing.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Pre-requisite(s): Completed ENG 102, 105, or 108 with C or better. Minimum 56 hours
ENG	476	Studies in Folklore	Surveys the history, genres, and dynamics of folklore, with emphasis on oral traditions. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours OR Visiting University Student
ENG	477	World Literature	Readings in world literature, mostly outside the United States and England.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & G	Prerequisite(s) w/ C or better: ENG 101, 105, or 107; ENG 200; one 200-level lit course OR Integrative Sciences & Arts or New College ugrad std; ENG 101, 105, or 107; min 45 hours; Credit allowed for only ENG 477 or IAS 477 OR Visiting University Student

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ENG	478	Studies in Modernism	Cultural, historical, and literary issues in American and European modernism.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	479	Studies in Postmodernism	Literary, social, and cultural topics in postmodernism. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours
ENG	480	Methods Teaching English: Comp	Methods of instruction, organization, and presentation of appropriate content in the teaching of composition and other writing skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG course with C or better OR Visiting University Student
ENG	482	Methods of Teaching: Language	Methods of instruction, organization, and presentation of appropriate content in language and usage for junior and senior high schools.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L	Prerequisite(s)/w/ C or better: ENG 101, 105, or 107; ENG 200; one 200-level literature course OR Integrative Sciences and Arts or New College undergraduate student; ENG 101, 105, or 107; minimum 45 hours OR Visiting University Student
ENG	483	Methods Teach Sec Lit & Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 200 with C or better and one 200-level literature course with C or better OR New College or Integrative Sciences and Arts undergraduate and minimum junior academic level and one 200-level (or higher) English course with C or better
ENG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	485	Digital Tools	Digital (online, electronic) tools as best utilized in language arts curriculum and instruction for junior and senior high schools. Addresses many practical classroom matters; broadens knowledge of Web 2.0 opportunities for teaching and learning. Creates a detailed inventory of the digital tools familiar to secondary students, and compares these to what a clever English teacher can access in a public school classroom. Imaginations, studies, and designs digital tools to enhance student achievement. Uses digital tools to increase student access to history and culture and opportunities for individuals to find and articulate their voices, as well as opens avenues for their creativity. Empowers the English language arts classroom with critical understandings of media, culture and public relations (digital information manipulation) and develops secondary students from passive consumers to literate participants in democracy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105, 108 and one other ENG course with C or better
ENG	486	Teaching Text	Approaches to texts (poetry, nonfiction and fiction) as best utilized in language arts curriculum and instruction for junior and senior high schools. Language arts teachers want all of their students to love literature and become immersed in the texts they assign (poems, short stories, plays, nonfiction and informative texts, and novels). Explores activities and philosophies for building a strong reading workshop in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into books, designs and experiences reading workshops based on innovative and effective teaching strategies. Offers hands-on strategies for supporting struggling readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): English (Secondary Education) BA major; ENG 102, 105 or 108 and one other ENG course with C or better; Credit is allowed for only ENG 486 or ENG 598 (Teaching Text) OR Visiting University Student
ENG	487	Advanced Workshop Poetry	Advanced writing of poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 310 or 387 with C or better; Credit is allowed for only ENG 411 or ENG 487 OR Visiting University Student
ENG	488	Advanced Workshop Fiction	Advanced writing of fiction.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 388 with C or better; Credit is allowed for only ENG 411 or ENG 488 OR Visiting University Student
ENG	489	Scholarly Products	Students develop culminating projects that demonstrate comprehensive knowledge and command of skills within the field of English studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 87 hours OR Visiting University Student

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ENG	490	Forms Theory Practice Poetry	Types, history, analysis of traditional forms, and contemporary adaptations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 411 or 487 with C or better. Credit is allowed for only ENG 490 or ENG 495
ENG	491	Topics for Advanced Research	Students define a conceptual question related to a specific topic in literary scholarship; conduct appropriate research; and craft a response or argument that assesses the question, the evidence and possible responses to it.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
ENG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
ENG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ENG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
ENG	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
ENG	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7	L	Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): ENG 102, 105, or 108 with C or better (FYC)
ENG	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Familiarizes students with the areas of research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ENG 501 or LIN 501
ENG	502	Contemporary Critical Theories	Studies the principles and techniques of contemporary theory and criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	503	History of Narrative	Historical overview of narrative as a mode of discourse and communication. Begins with the study of influential traditional narrative forms from Biblical and classical sources and moves to study innovation in narrative, including flashbacks, interior monologue, nonlinear narrative and frustration of narrative expectations.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	504	Cross-Cultural Studies	Theoretical and analytical issues for comparative research across distinct cultural regions and traditions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	505	Narrative Research Methods	Addresses narrative and arts-based forms of qualitative research. Focuses on reporting study findings in narrative form.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	506	Methods Issues Tching Language	Developing the language skills of native and non-native speakers through a process approach and advanced writing workshops in junior and senior high schools.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	507	Methods/Issues Teaching Comp	Up-to-date theory, practice, and implementation of secondary writing instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	509	Studies in Narrative Writing	Writing course focusing on specific kinds of narrative writing (e.g., blogging, travel writing). Regardless of particular topic focus, this course covers basic structural issues in narrative writing and gives students practical and applied experience crafting their own narratives for multiple audiences.	Y	SEM	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	513	Cissic Txts in Ldrshp/Stsmnshp	Encounters classic texts featuring analyses and discussions of important historical leaders and their actions. These texts both situate examples of leadership and statesmanship in their historical context, and highlight timeless principles of wise and effective leadership. Texts include Thucydides' History of the Peloponnesian War, Plutarch's Lives, Cicero's On Duties, Shakespeare's histories, and the writings and speeches of Abraham Lincoln.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEL 513 or ENG 513
ENG	514	Studies Experimental Narrative	Critical analysis of experimental or unconventional narratives, including nonlinear narrative, surrealist narrative and metanarrative. Course materials include both text and visual narratives.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	516	Literary Publishing	Explores various aspects of literary publishing, including market profile of journals, techniques for preparing submissions, role of literary awards and contests.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517
ENG	518	Scientific Narratives	Examines how fictional narratives have shaped popular constructions of science and how scientific works can be read as narrative. Coursework emphasizes critical thinking, discussion and argumentative writing.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	519	Superstition Review	Students collaborate to complete tasks that lead to the publication of one issue of the national online literary magazine Superstition Review.	N	PRA	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	520	Visual Narratives	Students read, analyze and craft visual narratives. Includes various types of visual narratives such as graphic novels, picturebooks, films, commercials and videogames.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 394 (Visual Narratives) or ENG 446 or ENG 520
ENG	521	Writing the Southwest	Cultural representation in twentieth-century narratives of the Southwest United States. Focuses on canonical and noncanonical texts and addresses multiple representations of race, time periods and genres in the Southwest literature.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	522	Narratives of Conquest	Critical study of narratives relating/responding to the conquest of the Americas from the fifteenth century to the present. Addresses conquest narratives that reflect the Spanish colonization period (1510-1810) and the United States colonization period (1848-1965) in the Southwest. Chosen texts illuminate themes related to the nature of colonial relationships, notions of barbarie/civilization and empire building	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
ENG	530	Old English	Study of Old English grammar, syntax, and phonology, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	531	Old English Literature	Intensive literary, linguistic, and cultural study of Old English literature.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; ENG 530
ENG	532	Middle English Dialects	Study of the principal dialects of Middle English, with selected readings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	533	Studies in Medieval Literature	Selected topics in English literature from the 11th through the 15th centuries.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	534	Studies in Renaissance Lit	Selected topics and literary works studied in the contexts of English Renaissance culture.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	535	Study 18/19th Cent British Lit	Selected topics, issues, figures, and genres in British literature and culture of the 18th and 19th centuries.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	536	Study Amer Lit before 1900	Selected topics, issues, figures, and genres in 17th-, 18th-, and 19th-century American literature, including the literature of conquest and contact.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	537	Studies Mod/Contemp Brit Lit	Selected topics, issues, figures, and genres in British literature and culture after 1900.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	538	Studies Mod/Contemp Amer Lit	Selected topics, issues, figures, and genres in American literature and culture after 1900.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	539	Studies Mod/Postmod Lit/Theory	Selected topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	540	Tchnlg Young Adult Literature	Issues and new approaches in teaching contemporary literature in high school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	541	Teaching Texts	English language arts teachers want all of their students to love literature and become immersed in the texts they assign. Explores activities and philosophies for building a strong reading curriculum in the secondary language arts classroom. Through identifying proficient readers, conducting thoughtful conversations about students and reading, and using a variety of ways to invite readers into texts, designs and experiences reading workshops based on innovative and effective teaching strategies. Students learn to create and implement reading units, literature circles, books of choice, literary tea parties, reading portfolios and final projects. Students also learn hands-on strategies for supporting ethnically and linguistically diverse readers and for teaching reading from a critical lens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 541 or ENG 598 (Teaching the Novel Grades 6-12)
ENG	542	Studies North Amer Ethnic Lit	Selected works studied in their cultural contexts from authors representing ethnic experiences in the United States.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	544	Studies Colonial/Postcol Lit	Selected topics, periods, theories, and figures in works by authors representing colonial and postcolonial regions and/or experiences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	550	Translation	Surveys theories and practices of translation into English. Considers target, audience and market.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	551	Rhetorical Traditions	Examines rhetorical traditions spanning ancient to contemporary rhetorics.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	552	Composition Studies	Selected topics in the history and theories of composition.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	553	Technologies of Writing	Critical study and cultural analysis of information technologies and their effects on various writing practices.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	554	Rhetorics Race, Class, Gender	Study of interdependent relationships of race, class, and gender in rhetorical constructions of self and community.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	556	Theories of Literacy	Examines various theories of literacy, their embedded values and assumptions, and their influences on academic scholarship and pedagogy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
ENG	560	Genre Studies	Critical analysis and study of works from a single genre or comparative analysis and study of multiple genres.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	561	Film Studies	Analysis and study of film genres, cinematic techniques, and problems of interpretation and representation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	562	Forms of Poetry	Types, history, criticism, and schools of theory of metrical form. Analyzes lyric, narrative, and dramatic poetry.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	563	Forms of Fiction	Types, history, criticism, and schools of theory in the forms of fiction. Analyzes narrative and dramatic structure.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WW5 567

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ENG	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568
ENG	571	Foundations for Teaching ELs	Provides teachers with foundational knowledge of English language learner education including: identification and knowledge of English language learners in school contexts, the role of culture in learning, principles of second language acquisition and teaching, historical and current perspectives and policies related to English learner education, and the role of parents and communities in the education of English learners.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 580 (1 hour); Credit is allowed for only ENG 571 or ENG 598 (Foundations for Teaching English Learners)
ENG	572	Strategies for Teaching ELs	Supports teachers through a review of core knowledge of strategies and correlated assessments for the instruction of English learners. Teachers learn to assess EL language needs and apply appropriate teaching strategies for supporting learning English and content. Primary emphasis is in the integration of EL language and learning needs and implementation of lesson planning, strategies and appropriately leveled instruction. Teachers complete a semester-long inquiry on integrating course content into their teaching practices.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 571; Pre- or corequisite(s): ENG 580 (2 hours); Credit is allowed for only ENG 572 or ENG 598 (Strategy/Assessment/Core for Teaching Eng Learners)
ENG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	581	Methods Teaching Sec Writing	Emphasizes methods of planning, teaching, and assessing appropriate content in the instruction of composition and related skills in secondary classrooms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
ENG	582	Pedagogy	Overview of diverse theories of English instruction, including composition/rhetoric, linguistics and literary, with emphasis upon development and implementation for high school- and community college-level instructors.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): admission to any graduate program
ENG	583	Methods Teaching Sec Lit&Lang	Emphasizes educational methods of planning, teaching, and assessing appropriate content in the instruction of secondary literature, literacy, and language usage.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	597	Graduate Capstone Seminar	The capstone seminar is required for graduate students who must complete a culminating experience for a degree or certificate program.	N	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 597 or LIN 597

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ENG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	601	Job Market Workshop	Focuses on the professional training of graduate students who pursue an academic or alt-ac (alternative academic) job. The material enables students to learn more about their professional opportunities and improve their chances on the job market. In a workshop format, some of the professionalization skills may include conference presentations, increasing professional digital presence, using job search tools, applying for internships and postdocs, writing job letters and grant proposals, managing stress, preparing for interviews, interviewing, presenting job talks and teaching demonstrations, and creating work/life balance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 601 or ENG 791 (Job Market Workshop)
ENG	602	Adv Studies Theory/Criticism	Seminar courses on the principles, strategies, and applications of critical, cultural, and/or literary theory and/or criticism.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	603	Adv Studies Comparative Lit	Seminar courses on the problems, methods, and principles of comparative analysis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	604	Interdisciplinary Culture Stds	Seminar courses on work from literature, anthropology, and/or other disciplines, with an emphasis on cultural influences and functions.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	606	Adv Studies in English Educ	Current research, issues, and trends in English education.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing—an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
ENG	632	Adv Studies Med/Ren Lit/Cultur	Seminar in works of the Medieval or Renaissance periods, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	635	Advanced Studies British Lit	Seminar courses on works produced in or about England, Scotland, and Wales, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	636	Advanced Studies American Lit	Seminar courses on works produced in or about the United States, studied in their cultural contexts.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	639	Adv Studies Modernism/Postmod	Seminar courses on topics in Modernist and Postmodernist studies. May include literary and theoretical texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	642	Adv Ethnic, Anglo, Post C Lits	Seminar courses that consider the influence of cultural or geopolitical developments on the production and circulation of texts.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	651	Adv Studies/History/Theories	Selected topics in the history and/or theory of rhetoric.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	652	Advanced Composition Studies	Selected topics on particular composition theories, practices, pedagogies, and figures.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	654	Adv Studies-Rhet,Writ,Tech&Cit	Advanced study of theoretical, methodological, and pedagogical issues concerning the interrelationships among rhetoric, culture, writing, and writing technologies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	655	Disciplinary Discourses	Investigation of professional and disciplinary issues related to English.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	656	Studies Cross-Cultural Discrse	Theoretical and methodological issues in the comparative study of discourses between cultures and communities of practice.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	662	Poetic Genres	Creative writing courses in the long poem, the erotic image, death and transfiguration, reading and influence, and others.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ENG	664	Mixed Genres	Creative writing courses in the prose poem, magical realism, the literature of obsession.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	665	Creative Methods	Creative writing courses in theory of the novel, poetics, story into film, and others.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	667	Issues in Writing Professions	Focuses on career preparation, resources, the role of writing in the community, creative writing, and the Internet.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ENG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ENT	290	Entrepreneurship: Oppr Impact	How do you know if entrepreneurship is right for you? Don't have an idea today but want to work for a start-up? Focuses on developing an entrepreneurial mindset to prepare students for creating or participating in new ventures in the future, whether that is right now or after graduation. While this course does not contain the secret entrepreneurship code or the instruction manual for entrepreneurial success, it does provide a solid foundation of theory and practice that can set a budding entrepreneur on the right path. Students learn foundational entrepreneurship theories, participate in field activities where those theories are being put to the test, as well as learn to critically analyze their own ideas and other venture opportunities. Utilizes a mixture of teaching mediums including readings, videos, guest speakers, simulations, case studies and assignments completed as an individual and in teams.	N	LEL	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		

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ENT	305	Princ of Entrepreneurship	Entrepreneurship, with an interdisciplinary basis, focusing principles that involve the startup of a new organization, as well as its management into a fully established firm. Specific discipline-based concepts range from marketing to finance and strategic management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.50 GPA; minimum 30 hours OR Visiting University Student
ENT	340	Creativity and Innovation	Teaches key concepts and useful tools and techniques of creativity and innovation to students in order to encourage development of creative skills and habits that can propel them in their career or guide them down a path to start a new venture of their own. Coursework and activities involve complex problem solving activities and relevant trend and environmental analysis in order to explore alternative approaches to challenges. Coursework includes both individual and team activities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 2.50 GPA; minimum 40 hours; Pre- or corequisite(s): ENT 305 with C or better if completed OR Visiting University Student
ENT	360	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s): Business student; ACC 241, 242, 271 with C or better OR Engineering student; minimum junior standing OR Non-Business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
ENT	440	Entrepreneurship	Prepares students for the challenges of assembling and growing high-potential innovative ventures through the use of analytical frameworks that encompass uncertainty inherent in entrepreneurship (or in entrepreneurial activity). In-depth discussion of cases provides a strong empirical foundation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; FIN 300, 302, or 303 with C or better; MGT 300, 303, or 310 with C or better
ENT	441	Entrepreneurial Management	Provides a framework for dealing with issues from an entrepreneur's perspective. Covers all areas of entrepreneurship from idea conception to prototype development, to testing, refining and harnessing resources. Covers readings and cases related to topics of business models, business plans, managing startups, business law, founder's issues, managing growth, broad business functions and overall strategic and financial positioning.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major or Entrepreneurship & Innovation cert student or Small Business & Entrepreneurship cert student; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	445	Business Model Development	Develops a complete strategic business model emphasizing the planning process undertaken by successful small business owners and entrepreneurs.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ENT 440 (or MGT 440) with C or better
ENT	446	Venture Capital Experience	Students learn the details of the startup funding process and available resources. Exposes the history of venture capital and other types of capital, current trends, and the trends that are anticipated in the future. Students learn due diligence process as performed by investors and applies these concepts to building and growing their own ventures. Coursework includes both individual and team activities and is open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 240, 241, or 242 with C or better OR non-business student; minimum 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 446 (or MGT 446) or MGT 494 (Venture Capital Experience)
ENT	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 w/ C or better OR non-Business student; minimum 2.50 GPA; minimum 56 hours; Credit allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch) OR Visiting University Student
ENT	448	Corporate Entrepreneurship	Covers five general areas of corporate entrepreneurship: entrepreneurial orientation and corporate venturing; franchising the refining of business models; social venturing; and the extension of partnerships (e.g., joint ventures, strategic alliances).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey Business Entrepreneurship BS major; ENT 305 with C or better; ENT 360 (or MGT 360) with C or better OR Visiting University Student
ENT	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student

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ENT	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
ENT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): minimum 45 hours
ENT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student
ENT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ENT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
ENV	103	Field & Lab Geology Enviro Sci	Covers the basic principles of geology, geochemistry and geophysics. Topics include plate tectonics, minerals, rocks, weathering, earthquakes, volcanoes, mountain building, geologic time, geologic resources (energy and water), global climate change. Students learn robust field and laboratory skills in geology during this 3-hour lab, with some field trips, that accompanies GLG 101 lecture.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): Environmental Science major; Corequisite(s): GLG 101; Credit is allowed for only ENV 103 or GLG 103
ENV	130	Intro to Environmental Science	Introduces the interconnected nature of Earth's hydrosphere, lithosphere (soils and rocks), atmosphere, and biosphere.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	Credit is allowed for only ABS 130 or BIO 130 or ENV 130 OR Visiting University Student
ENV	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
ENV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ENV	201	Environmental Science	Examines the functioning of the earth system and how it has changed over long and short time scales. Emphasizes understanding global processes and how human activities can disrupt these processes, changing the ability of our global environment to support life. Also emphasizes important feedbacks between biological and physical processes and their effects on the biosphere. Discusses the response of natural and managed ecosystems to global change along with prospects for the future.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 and 182 with C or better or BIO 281 and 282 with C or better; CHM 116 with C or better OR Visiting University Student
ENV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
ENV	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student
ENV	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
ENV	345	Spatial Analysis	Develops an understanding of the methods, tools and technologies used to collect, display, analyze and interpret spatial data in environmental science and natural resource management. Provides overview of geographic information system (GIS) applications in these fields. Basics of integrating the global position system (GPS) and remote sensing (RS) into GIS to solve problems in environmental science and natural resource management.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better
ENV	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)

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ENV	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
ENV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	410	Soil Science	Fundamental principles of soil science, including physical, chemical, biological and ecological properties. Applies these principles to explain the importance of soil as both a natural resource and ecosystem. Discusses the role of soils as the heart of terrestrial ecosystems, both natural and managed, and the importance of this key natural resource to environmental health and biological productivity. Explores how human activity and global change are impacting this vital natural resource and ecosystem that is crucial to life on earth. The laboratory component also introduces applications and standard methodology for investigating these principles.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 320 with C or better; CHM 116 with C or better; PHY 101 or higher with C or better OR Visiting University Student
ENV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
ENV	485	Environ Impact Assessment	An understanding of federal and state environmental laws, including the scientific processes that are incorporated into decision making, is critical for a variety of careers in the environmental sciences. Provides an overview of these laws and processes and develops the specific written and oral communications skills needed for many environmental, biophysical and natural science professions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENV 201 with C or better OR Visiting University Student
ENV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ENV	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
ENV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
ENV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
EPA	532	Infmed Consumer of Ed Research	Development of critical analyses skills in the examination and synthesis of educational research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	555	Translating Rsrch for Ed Chang	Teaches educators how to translate research to promote educational change in their schools and districts. Three concepts emerge to empower practitioners to translate research to their individual schools and communities: (1) a needs assessment to understand the context (student population, community, networks); (2) an emphasis on the generalizability of research to provide an understanding of which findings are most applicable to specific contexts at which times and under which conditions; and (3) explicit training on ways of knowing to encourage practitioners to develop their own theoretical perspectives and test them against the academic research.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	556	Data Anlysis for Ed Decsn Mker	Prepares educators to use the sources of information (i.e., results, reports and interactive programs) at their disposal to make educational decisions. Dynamic content is adapted based on the real-world information sources brought forth by the course participants.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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EPA	559	Systmtc Inqry for Prblm Solvng	Trains participants to produce a policy analysis aimed at addressing a problem they identify within their own organizations. Participants identify a problem, gather, analyze data and evidence to draw conclusions, and clearly and succinctly report their findings and recommendations to policymakers.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	565	Critical Topics in Ed Policy	Critical topics in contemporary educational policy debates in the USA. Explores the dominant ideological and theoretical perspectives about what should be the purposes of schooling. Students analyze the humanist, core-curriculum, vocational, pragmatic as well as the standards-based, market-driven, professionally led, and networked models of reform, theories of change, implementation challenges, and the critiques leveled against these approaches. Students analyze critical topics such as policy formation, leadership, teachers unions, academic performance and community involvement. Encourages students to learn critical "policy skills" and reach reflexive and research-based conclusions about what are the requirements to develop "good school systems" and what their their individual and collective contributions could be.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		
EPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
EPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	701	Proseminar Education Policy I	Small class emphasizing discussion, student presentations and written research papers on the fundamentals of education policy analysis.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EPA 691 (Pro-Seminar in Educ Pol Study) or EPA 691 (Pro-Seminar in Ed Policy Analysis I) or EPA 701
EPA	702	Prosem Education Policy II	Small class emphasizing discussion, student presentations and written research papers on the fundamentals of education policy analysis.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): EPA 701; Credit is allowed for only EPA 691 (Pro-Seminar in Ed Policy Analysis II) or EPA 702
EPA	752	Research Design	Focuses on learning the principles of researching design through discussion, presentations by students and written research papers.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EPA 691 (EPE Research Design) or EPA 691 (Introduction to Quantitative Research Design) or EPA 752
EPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
EPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): EPD 710, 712, or 714 with C or better
EPD	710	Current Research in Design	Review and critical evaluation of contemporary literature and research in design, environment and the arts.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisite: Design, Environment and the Arts PhD OR Design, Environment and the Arts (Digital Culture in Design) PhD OR Environmental Design and Planning PhD OR Environmental Design and Planning (Healthcare and Healing Environments) PhD
EPD	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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EPD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EPD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	201	Environmental Management	Develops an understanding of the fundamentals of environmental science, environmental issues and major environmental standards. Topics covered include basic ecology, population dynamics, environmental resources, environmental pollution and its prevention, the environmental management regulatory framework, sustainability, pollution prevention, waste minimization, and environmental management systems. Provides the foundational knowledge used by environmental professionals who manage environmental problem solving for industry, regulatory agencies, municipalities, consulting firms, military installations, academic institutions and nonprofit organizations specializing in environmental advocacy. Overview course covering elements that are developed in more depth in other ERM courses.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	203	Environmental Regulations	Explains and discusses federal environmental laws and regulations that apply to the field of environmental management. Addresses the most important Arizona state and county/local regulations that impact decision making in the environmental management practice area. Emphasizes the federal-level requirements, including laws that are most likely to be used by professionals who are not lawyers and working in positions having environmental management and engineering assignments. Uses case studies to help students learn how the laws are applied and implemented in practical situations. Develops an understanding of the fundamentals of environmental laws and regulations. Provides essential knowledge used by environmental and engineering professionals who manage regulatory issue problem solving for industry, government, consulting firms, military installations, academic institutions and nonprofit organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): any SG or SQ course
ERM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	302	Water and Wastewater Treatment	Explores the development of treatment technologies for drinking water and wastewater.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116 with C or better; MAT 170 or higher with C or better; PHY 111 with C or better; PHY 113 with C or better; Credit is allowed for only EGR 325 or ERM 302 OR Visiting University Student
ERM	364	Toxicology/Biohazards/Emer Mgt	Introduces poisons. Dose response routes of exposure and toxicokinetics. Diseases associated with natural disasters. Clinical presentation of treatments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		
ERM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	401	Hazardous Waste Management	Definition of hazardous waste, RCRA and CERCLA regulations, hazardous waste classification system. Overview of hazardous waste management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher with C or better; ERM 203 with C or better or Environmental Engineering BSE major; Credit is allowed for only EGR 427 or ERM 401 or ERM 501 OR Visiting University Student
ERM	402	Unit Treatment Technologies	Addresses various treatment technologies for contaminated air, water, and soil. Emphasizes design based upon medium, type of contamination, and concentration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 302 with C or better or CEE 361; Credit is allowed for only EGR 425 or ERM 402 OR Visiting University Student

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ERM	406	Environmental Chemistry	Applies basic chemical principles to understanding the reaction, fate and transport of chemicals in water, soil, air and living organisms. Considers major environmental issues in three areas: energy use and sustainable options to fossil fuels; atmospheric pollution including photochemical smog, ozone depleting substances, acid rain and climate change; and water pollution and water management options.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 116 with C or better; MAT 170 or higher with C or better; Credit is allowed for only ERM 406 or ERM 598 (Environmental Chemistry) OR Visiting University Student
ERM	407	Occupational Hygiene	Overview of occupational health hazards, including recognition, evaluation, and control. Includes regulatory status and health standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): CHM 113 or higher with C or better OR Visiting University Student
ERM	426	Environmental Issues	Explores the science and policy implications of contemporary problems that threaten the environment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ERM 426 or ERM 520 OR Visiting University Student
ERM	428	Intl Environmental Management	Examines environmental management issues faced by countries outside of the United States and compares approaches to solving these problems from a technological, economic and political basis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ERM 428 or ERM 528
ERM	432	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): MAT 170 or higher with C or better; minimum junior standing; Credit is allowed for only EGR 426 or ERM 432 or ERM 532 OR Visiting University Student
ERM	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): ERM 203 with C or better; ERM 302 with C or better; Pre- or corequisite(s): ERM 402
ERM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		
ERM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6		Prerequisite(s): Barrett Honors student
ERM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ERM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		
ERM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-3		
ERM	501	Prin of Hazard Mtrls/Waste Mgt	Foundation for courses in curriculum. Topics include definitions of toxic and hazardous substances and wastes, RCRA classification, and OSHA criteria.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EGR 427 or ERM 401 or ERM 501
ERM	502	Regulatory Framework/Toxic	Examines federal, state, and local regulations for hazardous materials and wastes. Includes history and trends in regulatory development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	503	Principles of Toxicology	Interaction of chemicals with life and environment. Mechanisms of toxic action, dose-response relationships, toxicity testing models, predictive toxicology, and epidemiology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	506	Chemistry of Hazardous Mtrls	Chemistry and toxicology of hazardous chemicals. Topics include proper handling, storage, transportation, and disposal.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 494 (Chemistry of Hazardous Materials) or ERM 506
ERM	507	Industrial Hygiene	Emphasizes chemical hazards in industrial settings. Topics include recognizing and measuring hazards, control techniques, and regulatory standards.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	520	Sustainability/Sustainable Dev	Explores broad field of environmental sustainability with U.S. and international coverage of green living practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 426 or ERM 520
ERM	522	Air Pollution & Toxic Chemical	Examines issues in the measurement analysis and control of toxic chemicals in air pollution.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	523	Soils/Grndwater Contamination	Theoretical and practical hydrogeology as it applies to cleaning up contamination. Investigative techniques, monitoring, risk assumptions, and assessment methodology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	527	Enviro/Resources Regulations	Environmental regulations related to water, land use, endangered species, NEPA and other policy issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	528	Intl Environmental Management	Studies environmental issues and laws outside the U.S., impact of free trade, and multinational corporations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ERM 428 or ERM 528
ERM	532	Sustainable Solid Waste Mgmt	Addresses engineering and management principles associated with integrated solid waste systems. Follows the life of the solid waste from point of generation, reclamation and treatment to point of disposal. Emphasizes the functional units of a solid waste system and the relationships among them. Addresses the physical, chemical and biological transformations of the solid waste, together with the existing technologies and engineering practices for collection, management, treatment and disposal of the solid waste. Emphasizes the sustainable practices such as waste minimization, pollution prevention, reuse and reclamation of the solid waste. Also discusses existing domestic and foreign regulations guiding the proper solid waste management techniques, as well as planning and design of solid waste system operations and facilities.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): Fulton Schools of Engineering or School of Sustainability or Urban and Environmental Planning graduate student or enrolled in ERM 4+1 program; Credit is allowed for only EGR 426 or ERM 432 or ERM 532
ERM	533	Water/Wastewater Treat. Tech.	Covers the most essential elements of aquatic chemistry, water pollution and water and wastewater treatment technologies to graduates in environmental and resource management and other interested parties. Provides a fundamental basis for understanding sustainable water and wastewater treatment operations. Includes critical evaluation of contemporary issues concerning our water environment and the associated regulatory framework in the lectures to strengthen and emphasize the importance of adequate practices used in the management of engineered water and wastewater treatment systems. Incorporates lectures, field trips and professional guest speakers.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): graduate student in Ira A. Fulton Schools of Engineering, the School of Sustainability, or Urban Planning
ERM	535	Water Law and Policy	Regulatory framework that governs use of surface water and groundwater, including federal and state laws, interstate compacts and international treaties. Emphasizes the history and development of water resources in the arid American West. Explores the impact of climate change, population growth and competing interests of sectors such as agriculture, municipalities, tribes and hydropower in terms of policy implications for water use.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	540	Intl Environmental Law/Policy	Studies international environmental agreements, enforcement mechanisms, and the role of NGOs and international organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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ERM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ERM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Environmental and Resource Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	501	Social Theory and Environmt	Investigates key conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	502	Politcl Ecology: Thry & Rsrc	Investigates key theories and research of political ecology through the conceptual domains of environmental social science from interdisciplinary and comparative perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	513	Institutions	Studies formal and informal institutional arrangements for the governance of natural resources using case studies, experiments, and formal models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	4		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
ESS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
ESS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EST	210	Circuit Analysis I	Parallel/Series circuits, ohm's law, network theorems, capacitors/inductors and transient analysis. Overview of electronic devices, BJTs, FETs, op-amps.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisites: MAT 266 (or 271); PHY 112 (or 131)
EST	310	Circuit Analysis II	Electronic device analysis and introduction to design. Power supplies, diode circuits, FETs, BJTs, op-amps. Emphasizes frequency response.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210
EST	315	Digital Systems II	Digital electronics systems, HDL circuits and systems design techniques, and device applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 115 and 210; Credit is allowed for only EST 315 or 394 (Digital Electronics II)
EST	350	Microcontroller Applications	Interfacing of microcontrollers to sensors, switches, indicators, and other human interfaces using the C programming language. Applications involve the integration of both hardware and software. Also addresses applications dealing with open- and closed-loop applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 315; Credit is allowed for only EST 350 or 394 (Adv Micro Controllers)
EST	370	Sensors	Overview of sensor technology, including mechanical, magnetic, radiation, thermal, chemical, and biological applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 200; EST 210; UET 331
EST	380	Electronic Devices	Covers materials, structures, and technology for the design, production, and application of the major categories of electronic devices.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: UET 331; Credit is allowed for only EST 380 or 394 (Intro to Electronic Devices)
EST	410	Electronic System Design	Analysis and design of Op-amps, power amplifiers, and digital logic families, Feedback design using frequency response. Computer analysis and design.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 310; Credit is allowed for only EST 410 or 494 (Electronics Systems Design)

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EST	465	Statistical Process Control	Introduces statistics, seven QC tools, and control charts for data analysis and interpretation; process capability, 6-sigma, lean manufacturing, and quality system.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): Fulton Schools of Engineering undergraduate student; Senior standing; Credit is allowed for only EST 465, 494 (Statistical Process Control) or 565
EST	470	Capstone Design I	Small-group projects designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 345; EST 370; EST 372
EST	471	Capstone Design II	Continuation of a small-group project encompassing designing, building, evaluating, and analyzing components, assemblies, and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EST 470
EST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
EST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
EST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		Prerequisite(s): Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student OR Fulton Schools of Engineering senior student with minimum 3.00 ASU GPA
ETH	100	Ethnic and Indigenous Lives	Undertakes an introductory comparative analysis of ethnic groups to understand cultural diversity within the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	
ETH	300	Principles of Ethnic Studies	Familiarizes students with a range of analytical and theoretical frameworks in the field of ethnic studies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	
ETH	310	Critical Research Methods	Examines methodological approaches common to programs in such disciplines as American Studies, Ethnic Studies, and Women's Studies. Critical qualitative, historical, archival, and feminist methodological approaches to the study of diverse United States populations comprise the focus of this course.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Pre-requisite: Minimum 40 hours
ETH	334	Am Southwest Literature & Film	Evaluates literary texts and films addressing the diverse literatures and cultures of the American Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 336 or ENG 334 or ETH 334 OR Visiting University Student
ETH	353	Af/Am Lit: Begin-Harlem Renais	Focuses on the history of African American literature through the Harlem Renaissance, as exemplified in selected slave narratives, poems, and fiction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 353 (or AFH 353) or AMS 353 or ENG 353 or ETH 353
ETH	354	Af/Am Lit: Harlem Renais-Pres	Examines the literary productions of African Americans from the Harlem Renaissance (about 1920) to the present focusing on fiction, poetry, drama, and essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 354 (or AFH 354) or AMS 354 or ENG 354 or ETH 354 OR Visiting University Student
ETH	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
ETH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ETH	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student
ETH	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)

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ETH	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Movt)
ETH	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
ETH	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
ETH	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
ETH	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
ETH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
ETH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
ETH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
ETH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
EVE	214	Envr Engineer Mechanics	Concepts of engineering statics and dynamics in the context of environmental processes. Includes application of calculus-based physics, where differentiation and integration are applied to basic physical relationships; introduces hydrostatics; and material, force and energy balances.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): MAT 266 or MAT 271; PHY 121; PHY 122 OR Visiting University Student
EVE	261	Intro to Environmental Process	Environmental laws and regulations; mass and energy balances; concepts of water and wastewater treatment, air quality and control, and solid and hazardous waste management.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): CHM 116 OR Visiting University Student
EVE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		

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EVE	302	EnvEngineer Fundmntls:Phys/Chm	Physical and chemical processes in the environment emphasizing environmental chemistry, and fate and transport of substances in and between water, air, soil, and sediment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	303	Envnm Engr Fund: Microbio Proc	Role of microbiology in the environment including detection and identification of organisms, bacterial growth, microbial metabolism, biogeochemical cycles, and applications to environmental engineering	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 261 OR Visiting University Student
EVE	304	Environ Engineer Processes Lab	Laboratory experiments, data analysis and interpretation of environmental processes in air, water, and other environmental engineering focus areas.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	2		Prerequisite(s): EVE 302; EVE 303 OR Visiting University Student
EVE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	452	Environ InvestgIn Remediation	Engineering practice and design covering environmental laws and regulations, environmental sources of contamination, contaminated site investigation and characterization, risk assessment, and remediation technologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): EVE 302; EVE 303 OR Visiting University Student
EVE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): minimum 45 hours
EVE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6		Prerequisite(s): Barrett Honors student
EVE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EVE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		
EVE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-7		Prerequisite(s): minimum 45 hours
EVE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-3		Prerequisite(s): minimum 45 hours
EVE	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	568	Environmental Risk Assessment	Risk assessment is an increasingly important set of tools used to inform environmental, engineering and public health regulatory decisions. Additionally, risk assessment can be used to navigate complex decisions and prioritize resource allocation when those resources are scarce. Framework for analyzing risks in engineering and environmental health applications including microbial, chemical and engineering failure risks. Probability and statistics concepts needed to complete a risk assessment including curve-fitting, Monte Carlo analysis, sensitivity analysis, and techniques for interpreting both sparse and large datasets. Additionally, summarizes the principles of toxicology and microbiology to inform case study projects. Explores risk perception, management and communication approaches for applications to multiple scenarios including water and wastewater treatment, indoor air quality and failure analysis.	N	IND	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student
EVE	571	Water Quality Modeling	Identifies point and nonpoint source pollution in urban and agricultural watersheds, models the fate and transport of this pollution in watersheds, and evaluates strategies for their mitigation. Additionally, touches on water quality standards and the U.S. regulations governing the pollution sources and control strategies. Focuses on nutrient and sediment pollution of surface waters, but also introduces these concepts for other pollutants and groundwater systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	3		Prerequisite(s): Civil, Environmental and Sustainable Engineering MS or Civil, Environmental and Sustainable Engineering MSE or Environmental Engineering MS student
EVE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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EVE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVE	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Sustainable Engineering & Built Environmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
EVO	501	Current Topics in Ev. Biology	Broadly conceived presentation of papers and current research in evolutionary biology in a journal-club style format.	N	LEC	N	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
EVO	557	Pract Apps in Comp. Life Sci	Working group to troubleshoot challenges in computational life sciences.	N	LEC	Y	OP2	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 498 (Pract Apps in Comp. Life Sci) or BIO 557 or BIO 598 (Pract Apps in Comp. Life Sci) or EVO 557 or EVO 598 (Pract Apps in Comp. Life Sci)
EVO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
EVO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	601	Principles of Evolution	Introductory course for graduate students; covers the principles of evolutionary biology from theoretical, empirical, and historical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	610	Research Areas of Evolution	Broadly conceived description of the current research areas of evolutionary biology. Expected of all first-year evolution students.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EVO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	101	Found of Health & Fitness Sci	Student-centered instructional course designed to excite and propel the student into the development of a successful academic and professional career path in the fields of health coaching, fitness or wellness. Presents a general overview of the career opportunities for students in the health and fitness fields with group and individual assignments that enable participants to more thoroughly explore options related to their goals. Divided into 3 major sections: academic preparation, professional development and career exploration. Assists students to develop their own individual blueprint for accomplishing their professional goals and understand the skills they need to develop along the way to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 101 or EXW 290 or EXW 300 OR Visiting University Student
EXW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	214	Flex Instruc Comp Lab	Science and methods of instruction related to flexibility exercises and activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	215	Resistance Training & Recovery	Detailed instruction designed to teach students to safely and properly perform a variety of muscular strengthening exercises. Introduces and reviews fundamental principles of physiology and kinesiology underlying the ability to properly perform a wide variety of resistance training exercises and to properly instruct individuals of varying ages and physical abilities in safe and effective performance of those movements. Additionally, covers the purpose for the cool-down and recommendations for recovery techniques to allow participants to prepare for additional bouts of physical activity.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	216	Musc Str Instr Comp Lab	Science and methods of instruction related to resistance training and muscular strength activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate

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EXW	217	Cardio & Flexibility Training	Comprehensive foundational course designed to teach students how to safely and effectively instruct a wide variety of cardiorespiratory and flexibility exercises one-on-one, and to groups of individuals of varying ages and physical abilities. Provides a basic understanding of the effects of cardiorespiratory exercises on the body and the general scientific principles relative to improving cardiorespiratory fitness. Prepares students to assess joint range of motion and provide specific recommendations for flexibility routines designed to increase joint range of motion and improve the comfort of a client participating in physical activity programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
EXW	218	CV Instruct Competency Lab	Science and methods of instruction for cardiovascular exercise and fitness activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Exercise and Wellness major or enrolled in Personal Fitness Training certificate
EXW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	302	Fundamentals of Wellness	Overview of fundamental health, exercise and wellness concepts. Emphasizes personal wellness assessment and application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
EXW	321	Consumer Health	Provides preprofessional primary/secondary educators and community health education specialists with (1) a model for making informed consumer health-related decisions; (2) current information involving consumer related topics, emphasizing necessity of current information for making informed decisions; (3) mechanisms for continued consumer awareness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361)
EXW	325	Fitness for Life	Analyzes physical fitness and benefits of exercise with emphasis on application of strategies for fitness and wellness evaluation, behavior change, and lifelong program planning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101; minimum 30 hours OR Visiting University Student
EXW	330	Kinesiological Found of Mvmt	Study and consideration of human movement with emphasis on kinesiology principles and their application to movement and fitness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Recreational Therapy BS major; BIO 160 or 201 with C or better OR BIO 160 or 201 with C or better; Pre- or corequisite(s): EXW 101 with C or better or KIN 101 with C or better OR Visiting University Student
EXW	331	Violence Prevention	Examines violence prevention strategies and violence prevention content. Examines the literature to understand principles for use in the development of violence prevention curriculum in school and community settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)
EXW	335	Phys Activity & Physio Concept	Specifically designed instruction in human physiology for the health and fitness professional with focus on application of basic exercise physiology and bioenergetics in the design and implementation of exercise and physical activity programs to increase physical function and improve overall health.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
EXW	342	Health Behavior Change	Examines major theories of health behavioral change. Develops intervention strategies and techniques employed to facilitate health behavioral change.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 45 hours; Credit is allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
EXW	344	Phys Activity in Hlth&Disease	Examines the influence of physical activity and fitness on the development of chronic disease and improvement in life expectancy.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better OR Visiting University Student
EXW	351	Substance Abuse Prevention	Prepares preprofessional primary/secondary school and community health educators to prepare and deliver substance abuse prevention education and programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 251 (or EXW 312) or EXW 351
EXW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	400	Stress Management for Wellness	Examines the stress response and management from a behavioral perspective as it pertains to individuals or groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PSY 101; minimum 60 hours OR Visiting University Student
EXW	412	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)

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EXW	420	Exercise Testing	Theoretical basis and practical application of pre-exercise screening, exercise testing, estimates of energy expenditure, and interpretation of results.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s) with C or better: EXW 214; EXW 216; EXW 218; EXW 330; SSP 315 (EXW 315); min 60 hours OR EXW 215; EXW 217; EXW 330; KIN 340; min 60 hours OR EXW 215; EXW 217; EXW 330; SSP 315 (EXW 315); min 60 hours OR Visiting University Student
EXW	425	Exercise Rx Hlth & Wellness	Comprehensive course allowing students to learn and apply the principles of exercise prescription for individuals of various ages, fitness levels and health states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 335 or SSP 315 (EXW 315) with C or better OR Visiting University Student
EXW	426	Exercise for Neuromuscular Con	Studies the impact of various neurological and neuromuscular conditions on the physiological function, motor control, exercise capacity and health of the human body. Researches and applies evidence-based best practices for exercise prescription for persons with such conditions with the goal of maximizing functional abilities and capacity, independence, and health-related physical fitness and preventing or treating secondary conditions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 330, KIN 334, or PRM 364; KIN 340 or SSP 315 (EXW 315); Credit allowed for only EXW 426 or EXW 494/KIN 494/EXW 598 (Neuromuscular Exercise Prescrip) or EXW 598 (Exercise for Neuromuscular Conditions) OR Visiting University Student
EXW	442	Motivational Interviewing	Provides a structure for understanding, critiquing and application of core concepts associated with motivational interviewing. Assigns each student to formally interview a volunteer, review the audio/visual stream, and evaluate the efficacy via accepted software and hardware instruments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 or EXW 342 with C or better; Credit is allowed for only EXW 442 or EXW 494 (Motivational Interviewing)
EXW	446	Worksite Wellness	Provides insights and tools to effectively promote the transformation of workplaces into communities that care for their employees while improving productivity and moderating increases in health care costs through sustainable wellness programming.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 101 with C or better; Pre- or corequisite(s): EXW 342
EXW	450	Soc Deter of Health and Beh	Examines broad determinants of health that influence the well-being of individuals and communities (e.g., early life, education, employment, culture, policy, the built and food environments, stress and socioeconomic status).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 60 hours OR Visiting University Student
EXW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Wellness major; EXW 420 with C or better; minimum 2.00 GPA OR Health Education and Health Promotion major; EXW 284 with C or better; EXW 476 (or EXW 436) with C or better
EXW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
EXW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
EXW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
EXW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
EXW	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	501	Research Statistics	Statistical procedures; sampling techniques, hypothesis testing, and experimental designs as they relate to research publications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	510	Obesity Persp and Prescip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. In addition, explores applications for prevention and treatment of obesity. Challenges students to examine a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410)

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EXW	515	Advanced Exercise Physiology	Comprehensive and in-depth investigation of human physiology to exercise circumstances. Provides content on the immediate and long-term adaptations to exercise with special reference to exercise metabolism, immune function, skeletal muscle, cardiovascular and pulmonary systems. Also includes critical analysis of the effect of exercise on human physiologic function with in-depth examination of current literature.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Clinical Exercise Physiology MS major or Exercise and Wellness MS major; Credit is allowed for only EXW 515 or KIN 494 (Advanced Exercise Physiology) or KIN 598 (Advanced Exercise Physiology)
EXW	535	Adv Exercise & Prescription	Theory and practice of laboratory methods in applied exercise physiology. Procedures for assessment and prescription for individuals with chronic disease.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	536	Physiological Aspects/Phys Act	Role of physiological mechanisms associated with acute and long-term physical activity and its influence on chronic disease and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	538	Obesity, Exercise and Health	Critically examines scientific and medical evidence concerning obesity, exercise, and health across the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	540	Mindfulness, Stress and Health	Overview of the theory, measurement, research and efficacy of mindful awareness practices and programs on stress reduction, health outcomes and health behavior. Includes an experiential learning component focused on practices and content consistent with mindfulness-based stress reduction.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 540 or EXW 598 (Mindfulness Stress and Health)
EXW	542	Health Promotion	Theory and research concerning fitness and wellness programs in nutrition, physical activity, smoking cessation, and stress management.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	544	Fitness/Wellness Management	Development of the fitness/wellness industry. Planning, organizing, promoting, and managing fitness/wellness programs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	554	Plan Implem Health Promotion	Covers selected topics in health promotion across a variety of domains of health. Program planning concepts include the application of planning frameworks, needs assessments, and theory in health promotion program planning and development. Also focuses on practical issues related to health promotion program implementation such as implementation planning, resource management and program marketing. Also covers process evaluation and quality improvement strategies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 554 or HEP 454 (EXW 454)
EXW	556	Program Eval Health Prom	Comprehensive and systematic introduction to the key concepts and methodologies of program evaluation, specifically related to health programs. Discusses approaches to program evaluation in relation to the program's stage of development, resources and informational needs for decision-making. Focus includes program evaluation literature related to physical activity and nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 554; Credit is allowed for only EXW 556 or HEP 456 (EXW 456)
EXW	560	Cardiopulmonary Rehab	Exercise testing and prescription for cardiac and pulmonary patients as well as pharmacology, electrocardiography, pathophysiology of chronic diseases, and leadership of patients in cardiac rehabilitation and pulmonary rehabilitation programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	562	Funct Assmt Ex Presc Older Adu	Assessment of functional capacity and prescription of exercise that is appropriate for older adults including healthy, frail, diseased and very old.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Clinical Exercise Physiology or Exercise and Wellness major
EXW	564	Aging and Lifestyle Behav	Provides an overview of health behaviors in older adults. Centers on the perceptions and behaviors of older adults in reference to illness prevention, health promotion and reactions to acute and chronic illness and the context in which these behaviors occur. Specifically examines the psychological, familial, cultural and contextual factors which influence older adults' personal health practices and illness behaviors. Considers the older person as an individual in a complex system, engaged in decision making and his/her subsequent actions to maintain or improve health status. Solidifies concepts through the use of in-class case studies and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 542
EXW	565	Cardio-Pulmonary Physiology	In-depth study of the physiology of exercise with special regard to cardiovascular and pulmonary responses in healthy and chronically diseased individuals.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Clinical Exercise Physiology MS students

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EXW	568	Mgmt Trmt Chronic Disease CEP	Investigates the physiology, pathophysiology and treatment options for a variety of diseases that the clinical exercise physiologist routinely encounters in the work environment. Prepares students to qualify for ACSM Clinical Exercise Physiologist certification.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre-requisite: EXW 560
EXW	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	597	Capstone Project	For non-thesis students in the MS degree program to provide a culminating field experience or non-research project for students to apply the coursework and healthy aging concepts.	N	RSC	N	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): EXW 500; EXW 501; EXW 536; EXW 542; EXW 591
EXW	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	635	Physical Activity and Aging	Examines and discusses the theoretical and applied health-related research on physical activity and aging.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	640	Analy of Variance for Exercise	Analyzes variance methods with an emphasis on research measures of human performance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	641	Qualitative Research Methods	Introductory overview of qualitative research methods frequently used in education and health. Emphasizes analysis of research and practical application.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	642	Exercise Epidemiology	Physical activity, exercise, and physical fitness and the development of chronic disease.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500 with C or better; EXW 501 with C or better
EXW	643	Correlation/Regression/Multiva	Graduate-level statistics course for PhD/master's students who will be doing research in the area of exercise and wellness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	645	Adv Applied Methods & Analysis	Heavily applied focus on implementing research methods and statistical modeling techniques in the health promotion sciences. Addresses practical issues in specifying, interpreting and presenting research findings using appropriate statistical techniques. Addresses reporting standards (e.g., CONSORT, STROBE, PRISMA) and practical issues related to manuscript submission. Covers analytical methods including multiple regression and logistic regression, ANOVA, mediation and moderation, exploratory factor analysis, multilevel models for hierarchical data and intensive longitudinal data, basic time-to-event analyses (i.e., survival), and meta-analysis; also remains flexible to address critical and emerging methodologies in the health promotion sciences. Covers statistical methods in a conceptual nature with a focus on the use of statistical software packages (primarily SPSS) and interpretation of outputs.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 640

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EXW	655	Phys Activity Public Health	In-depth analysis of the role of physical inactivity as a public health problem and public health approaches to the study and practice of increasing physical activity. Includes analysis of public health strategies for increasing physical activity at the community, national and international levels.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EXW 655 or EXW 598 (Pa Pub Health)
EXW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	701	Advanced Research Methods	Provides doctoral students in Nutrition and Health Promotion with instruction in methods to enhance scientific writing skills in the health sciences and guidance through the process required to organize and submit a fundable research grant proposal.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 700
EXW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
EXW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
EXW	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	101	Personal Growth Human Relatnsp	Personal development and behavior as related to competency in interpersonal relationships with the family. Processes of family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshman Standing; Maximum 25 hours
FAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
FAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	301	Introduction to Parenting	Integrated approach to understanding parenting and parent-child interactions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
FAS	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
FAS	331	Marriage/Family Relationships	Issues, challenges, and opportunities relating to present-day marriage and family living. Factors influencing interrelations within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	332	Human Sexuality	Relationship of sexuality to family life and to major societal issues. Emphasizes developing healthy, positive, and responsive ways of integrating sexual and other aspects of human living.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
FAS	361	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student

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FAS	370	Family Ethnic & Cultural Diver	Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Credit is allowed for only AFR 370 or FAS 370 OR Visiting University Student
FAS	390	Supervised Research Experience	Practical, firsthand experience within current faculty research projects in family studies or child development. Y grade only; may be repeated for total of 6 hours.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
FAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	410	Military Families	In-depth overview of recent research, issues, trends relating to military families and the interactions within the military culture and societal cultures.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 101 or PSY 101 or SOC 101; minimum 30 hours OR Visiting University Student
FAS	435	Adv Marriage/Family Relatnshps	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
FAS	436	Sexuality Mid-Life & Beyond	Analyzes physical changes, myths and stereotypes, gender issues, and relationship issues pertaining to sexuality in the middle and older adult years.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 60 hours; 6 hours of PSY and/or SOC courses
FAS	440	Fund Marriage/Family Therapy	Introduces the fundamental orientations of marriage and family therapy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
FAS	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
FAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
FAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
FAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
FAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
FAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
FAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	503	Academic Professional Dvlpmnt	Becoming and working as a academic, including how to write a vita, choose a thesis topic, or find dissertation data.	N	REC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 505
FAS	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 507
FAS	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 508
FAS	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only FAS or SOC 509

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FAS	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
FAS	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
FAS	531	Theoretical Issues Family	Historical and current approaches to theory development, evaluation, and application in family studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	539	Rsch Issues in Family Interact	Critical review of current and past research in the area of family dynamics. Emphasizes interactional processes within the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	570	Introduction to MFT	Introduces major marriage and family therapy orientations. Reviews history, theory, application, and outcome research for each orientation.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	571	Assessment in MFT	Assessment and outcome evaluation of couples and families involved in marital and family therapy.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	572	Advanced Techniques in MFT	In-depth review of assumptions and advanced techniques associated with contemporary marriage and family therapy approaches.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	573	Dysfunctional Families	Critical review of current theory and empirical evidence connecting marital and family interaction patterns with aberrant behavior.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	574	Family Theory for MFT	Examines the theoretical orientations within the family therapy field, including the evolution, premises, and assumptions of each.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	575	Appl Issues in Couples Therapy	Examines issues unique to therapeutic work with couples, including lifespan transition, multicultural issues, divorce, parenting, and remarriage. Seminar. Enroll requirements: Pre-requisites: Admission into MAS-MFT program.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	576	App Iss in Hum Dev MFT Psych	Recognition and diagnosis of maladaptive behavior according to DSM criteria across human development.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	577	App Iss in Child & Ado in MFT	Examines developmental factors that lead to disorders in children and adolescents, with an emphasis on a systemic framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	578	Issues in Sexuality for MFT	Examines the major methods used to assess and treat sexual issues and the treatment of sexual disorders.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	579	Applied Research in MFT	Critical examination of research concepts, quantitative and qualitative research designs, and applicability in clinical settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	581	Professional Issues and Ethic	Examines legal and ethical concerns of marriage and family therapists, emphasizing licensing standards and the Code of Ethics.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisite: MAS-MFT student
FAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
FAS	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587

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FAS	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588
FAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FAS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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FIN	123	ASU Financial Literacy	A practical approach to financial challenges faced by ASU students. Emphasizes financial choices likely to be encountered while at ASU, as well as issues to be encountered immediately upon graduation. Topics include credit cards, student loans, credit scores, saving, investing, insurance, transportation, housing, taxes, goal setting and budgeting.	N	LEC	N	YGB	W. P. Carey School of Business	Department of Finance	1		Credit is allowed for only FIN 123 or 191(ASU Financial Literacy)
FIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
FIN	300	Fundamentals of Finance	Theory and problems in financial management of business enterprises.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better:WPC maj or non-WPC maj w/min 2.5 GPA &min 56 hr; ACC 231,232 or 261; ECN 212; ECN 221,231,IEE 380 or STP 280; MAT 210,251,265 or 270; Pre/coreq:ACC 241,242 or 271; Credit allowed for FIN 300,302 or 303 OR Visiting University Student
FIN	302	Managerial Finance	Theories and techniques used for business decisions in working capital management, capital budgeting, financial control, and long-term financing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: WPC Finance major; ACC 231, 232, 261; ECN 211, 213; ECN 212, 214; ECN 221, 231; MAT 211, 266, 271; Pre/coreqs: ACC 241, 242, or 271 w/C or better if complete; Credit allowed for only FIN 302 or 303 OR Visiting University Student
FIN	303	Honors Finance	Covers basic principles of finance, practical tools for financial decision making, and evaluation methods employed by the firm.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s) with C or better: WPC Honors student; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211 or 271; Pre- or corequisite(s): ACC 241, 242 or 271 with C or better if completed; Credit allowed for only FIN 302 or 303
FIN	331	Financial Markets/Institutions	Analyzes financial markets and intermediaries. Theory of financial intermediation, interest rate theory, money and capital market instruments, and government regulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereqs w/C or better: W.P. Carey BS major or Business minor; ACC 231, 232, or 261; ECN 211 or 213; ECN 212 or 214; ECN 221 or 231; MAT 211, 266, or 271; Pre/coreqs: ACC 241, 242, or 271 with C or better if completed OR Visiting University Student
FIN	361	Advanced Managerial Finance	Builds on FIN 302. Advanced material on capital budgeting, cost of capital, CAPM, asset valuation, capital structure, and financial policy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P.Carey Finance BS student; FIN 302 with C or better OR Visiting University Student
FIN	380	Personal Financial Management	Dynamic analysis of personal financial planning, including time value of money, stock and bond investment, and retirement and estate planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student; Not for Finance major credit OR Visiting University Student
FIN	385	Personal Insurance Planning	Fundamentals of personal risk and insurance. Understanding and evaluating personal insurance coverage. Helpful for an insurance license.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300, 302, or 303 with C or better OR Visiting University Student
FIN	386	Estate Planning Strategies	Estate planning concepts, issues and strategies. Evaluates a personal estate plan and identifies needed components. Planning for client objectives and wealth.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey major; FIN 300, 302, or 303 with C or better; FIN 380 with C or better; Pre- or corequisite(s): FIN 385 with C or better if completed OR Visiting University Student
FIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey BS non-Finance major; FIN 300, 302, or 303 with C or better OR Visiting University Student
FIN	420	Personal Portfolio Management	Managing a portfolio of securities through the investment process. Valuing stocks, bonds, managing risk, and considering tax and inflation consequences.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; FIN 300, 302, or 303 with C or better; FIN 380 with C or better OR Visiting University Student

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FIN	421	Security Analys Portfolio Mgmt	Security analysis theory and practice. Selection and management of financial asset portfolios. Securities markets and portfolio risk-return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	427	Derivative FinancI Securities	Study of stock options, index options, convertible securities, financial futures, warrants, subscription rights, and arbitrage pricing theory.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	431	Management of Financial Insts	Asset/liability and capital management in financial institutions. Influence of market factors and regulatory agencies. Emphasizes commercial banks.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	455	Entrepreneurial Finance	Examines principles of entrepreneurial finance with a focus on the underlying economics and institutions involved. Provides insight into evaluating new ventures and practical financial tools for the entrepreneur.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W. P. Carey Finance BS major; ACC 261 or 340 with C or better; FIN 303 or 361 with C or better; Credit is allowed for only FIN 455 or FIN 555 OR Visiting University Student
FIN	456	International Financial Mgmt	Exchange rate determination, financial markets, managing multinational corporations, capital budgeting, and hedging currency risk exposure from an international perspective.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	G	Prerequisite(s): W. P. Carey Finance BS major; ACC 340 with C or better; FIN 303 or 361 with C or better OR Barrett Honors student; Finance BS major; FIN 303 with C or better OR Visiting University Student
FIN	460	Personal Fin Cases & Modeling	Capstone course. Case method training to simulate situations as a financial planner for self and for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Business (Financial Planning) BA major; ACC 435 with C or better; FIN 385 with C or better; FIN 386 with C or better; Pre- or corequisite(s): FIN 420 with C or better if completed
FIN	461	Financial Cases and Modeling	Case-oriented capstone course in managerial finance. Contemporary issues of liquidity management, capital budgeting, capital structure, and financial strategy.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3	L	Prerequisite(s): Finance BS major; ACC 340 with C or better; ENG 101, 105, or 107 with C or better; FIN 303 or 361 with C or better; minimum 87 hours; Pre- or corequisite(s): FIN 421 with C or better if completed OR Visiting University Student
FIN	471	SIM Fund	Under faculty supervision, students manage over \$500,000 of the ASU Foundation's assets over the course of the year. Must take for a total of 3 hours.	N	LEC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): FIN 303 or 361 with C or better OR Visiting University Student
FIN	472	Invstm Bnk Industry Schol	Provides conceptual basis for performing analysis, providing advice and making decisions in elite financial services firms. Must take for a total of 3 hours.	N	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-3		Prerequisite(s): application and selection process; Credit is allowed for only FIN 472 or FIN 494 (Investment Banking Industry Scholars)
FIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): W.P. Carey BS student; FIN 300, 302 or 303 with C or better
FIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-6		Prerequisite(s): Barrett Honors student
FIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Finance	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance BS major; ACC 261 or 340 with C or better; FIN 303 or 361 with C or better OR Visiting University Student
FIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Finance	1-3		Pre-requisites: W.P. Carey Finance students with professional status
FIN	501	Basics of Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree-seeking graduate student
FIN	502	Managerial Finance	Develops analytical techniques and financial theories used to make optimal decisions in a corporate setting.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2-4		Prerequisite(s): W. P. Carey MS Finance or MBA student; ACC 502 with C or better

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FIN	509	Quantitative Methods Fin I	Empirically investigates properties of financial data such as basic probability theory, matrix algebra, ordinary least squares, and maximum likelihood estimation. Explores these methods both through algebraic derivation and programmed implementation in PYTHON. Provides the basis for portfolio optimization by focusing on the estimation and testing of financial factor models.	N	SEM	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student
FIN	520	Valuation Techniques	Improves the understanding of valuation concepts and how to apply them. Shows how to value assets using free cash flow and economic value-added methods.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	525	Investment Strategies	Presents the fundamental principles of risk and return, portfolio diversification, asset allocation, efficient markets, active portfolio management, portfolio evaluation. Reviews selected alternative investment strategies such as hedge fund investments.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance MS or MBA student; FIN 502 with C or better
FIN	530	Derivatives	Intermediate- to advanced-level course in derivative assets such as options, forward and futures contracts, swaps and financial engineering.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W. P. Carey Finance MS student; FIN 502 with C or better
FIN	535	Quantitative Methods Fin II	Investigates financial data by using techniques such autoregressive and vector-autoregressive models, dimension-reduction techniques motivated by latent factor models and machine learning dimension-reducing techniques. Explores these methods using algebraic derivation and implementation in PYTHON. Builds on the statistical and programming skills developed in FIN 509 and emphasizes forecasting for the optimization of portfolios.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Finance MS student; FIN 509; Credit is allowed for only ECN 502 or FIN 535
FIN	540	Advanced Financial Management	Offers a comprehensive exploration of the revolutionary developments occurring in the world's financial markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	545	Advanced Corporate Finance	Studies major decision-making areas and selected topics in corporate finance. Attempts to develop decision-making ability in these areas using both lectures and cases.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 545 or 591 (Advanced Corporate Finance)
FIN	550	Fixed Income	Intermediate- to advanced-level course in fixed income instruments and associated relative valuation of the securities.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	555	Entrepreneurial Finance	Provides an overview of the economics and institutions involved in entrepreneurial finance. Focuses on the financing of new ventures. Consists primarily of case analysis, supplemented with in-class exercises and lecture material.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P. Carey degree-seeking graduate student; Credit is allowed for only FIN 455 or FIN 494 (Entrepreneurial Finance) or FIN 555
FIN	560	International Finance	Examines the financial issues of an international investment decision. Main topics include foreign exchange market, investment alternatives in the international capital markets, and the management of foreign exchange risk.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): Degree-seeking graduate student; FIN 502 with C or better
FIN	565	Risk Mgmt in Banks & Fnc'l Inst	Provides a risk management view of financial institutions (also known as financial intermediaries). Traditionally, banking courses have focused on an overview of the financial services industry, sector by sector, concentrating on balance sheet presentations and overlooking management decision making and risk management. In contrast, this course emphasizes a risk management approach.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	575	Finance Capstone	Provides a culminating experience as a step in completing the degree. Applies finance principles related to the investment, risk management and financing policies of the firm to develop decision-making ability in these areas. Emphasizes analysis of finance problems through selected readings and case studies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1-4		Pre-requisite: W. P. Carey degree-seeking graduate student; Credit is allowed for only FIN 575 or 591 (Finance Capstone)
FIN	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): FIN 502 with C or better

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FIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	781	Theory of Finance	Fundamental tools of financial economics: asset pricing, arbitrage, option pricing, capital structure, dividend policy, asymmetric information, and transaction-cost economics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	782	Theory of Finance II	Fundamentals of corporate finance, contract theory, agency problems, and game theory applications in Finance.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	783	Empirical Asset Pricing	Asset pricing models in finance; efficient market hypothesis, empirical factor models, option pricing basics.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	785	Financial Econ of Cap Mkts	Asset pricing theory, equilibrium asset pricing models, and the equity premium puzzle; incomplete and imperfect markets.	N	SEM	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey graduate student
FIN	786	Corporate Finance	Issues in corporate finance covering topics that impinge on corporate finance, financial contracting, intermediation; empirical corporate finance; microstructure.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Pre-requisite: W. P. Carey degree-seeking graduate student
FIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisite: W.P. Carey degree-seeking Graduate student
FIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Finance	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
FIS	101	SFIS: The ASU Experience	Welcomes freshman students enrolled in the Innovation in Society major at ASU. Introduces the array of resources available to them as ASU students, stimulates them to reflect on their choice of major, and provides an opportunity to hear about the career trajectories and interests of faculty and alumni from the School for the Future of Innovation in Society. Capped at sections of 20 students to promote discussion and a sense of community.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		
FIS	111	Welcome to the Future	Explores the ways in which the future inspires, shapes and motivates the present. Illustrates how possible futures are used by people and institutions to advance agendas, shape conversations and sell products. Examines how science, technology and other forces are mobilized to create change. Empowers students to play a role in shaping our collective future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	201	Innovation in Society	Examines the vast implications of innovation, why it is so powerful, and why it really matters. Introduces the theories and processes of innovation as they relate to socio-political change. Students gain knowledge about the history and future of innovation and explore how innovation is entangled with social, political and ethical issues. By identifying and applying analytical tools, students learn to account for the diverse workings and effects of innovation. This course strives to debunk the myth that innovation happens automatically. Rather, different actors rally to create innovations that shape our society, economy and cultures--and that those innovations are not inevitable and could be otherwise.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	H	

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FIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	305	Ways of Knowing	Students research, beginning with the concept of research itself and its various purposes, highlighting knowledge and how it is created in different disciplinary approaches. Exposes historical and philosophical underpinnings of how research is conceptualized, presented and implemented, including what constitutes information, knowledge and evidence. Introduces material that is in a traditional research design and methodology course; however, the emphasis uniquely focuses on knowledge creation, innovation, the nature of disciplinary knowledge and its impact on society. Explores the epistemological differences in problem identification and approaches to inquiry in the disciplinary perspectives of engineering, the sciences and in the social sciences.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
FIS	307	Navigating Futures	Foresight methods and their potentials as entry-points into public discussions about near- and mid-range technoscientific developments. Four elements constitute the organizing axis of the course: (1) the history of foresight exercises in government agencies and business organizations; (2) the methods of four forms of foresight exercises (technology foresight, science and technology studies, anticipatory governance and scenario development); (3) a comparative assessment of these dominant forms; and (4) a group-based application exercise using one of the foresight methods.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	308	Politics, Markets, and Innovat	Studies the roles that governments, markets and other factors play in promoting, disseminating and regulating science-based technological innovation. Includes examining the theoretical literature on factors that structure markets and shape diffusion, as well as case studies that illustrate the processes and mechanisms that govern innovations in society. In addition to studying the role of governments, firms and universities, also considers the role of publics as consumers who adopt innovations but also as citizens who may be skeptical of them. Includes case studies in agriculture, health care, biotechnology and digital rights.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	331	Technology and the Modern Worl	Explores how technological systems are developed and embedded in the modern world with an eye to playing a role in creating better futures. Examines how machines and techniques can shape institutions, relationships and values. Challenges students to envision futures that they want and work to develop strategies for moving us (and our systems) toward those futures. Analyzes technologies past, present and imagined, and describes the ways in which technologies shape our world and the ways in which we shape those technologies. Through repeated practice in class students play a productive role in and even facilitate conversations that tease out the relationships between values and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	332	Risk and the Future	Examines the evolving global risk landscape that is resulting from rapidly increasing global connectivity, tight coupling and massive complexity. Develops an understanding of how innovation in society is changing the risk landscape and considers how innovation in approaches to risk can help navigate this emerging landscape. Topics include technological risk, sociopolitical risk, catastrophic risk, existential risk, converging technologies, perception and uncertainty, anticipation, precaution, uncertainty and risk innovation.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student

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FIS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334
FIS	335	Designing Knowledge	Provides a foundational understanding of how social organizations make and use knowledge. From research laboratories to biotechnology companies to statistical agencies, many organizations are specifically designed to be knowledge enterprises, enterprises whose primary purpose is to produce knowledge. All organizations in modern societies also operate knowledge systems: systems whose purpose is to create, validate, circulate, communicate and apply knowledge in the making of decisions. Examines how these forms of organization work and contribute to modern societies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	336	Science and Technology Policy	Science and technology are powerful forces in the modern world. They have been hailed as a way to address everything from world hunger to old age. This does not, however, happen automatically, nor does it always work out the way one presumes. Governments make numerous decisions that affect the direction and application of science and technology, and government policies are affected by a myriad of social, political, and cultural factors. This class will explore the variety of ways in which governments make these policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures. Governments around the world have coalesced around the idea that science and technology are necessary for the promotion of the good life. We will examine how they put this idea into action by looking at five interrelated topics: Food, Security/Military, Health, Economy, and Sustainability.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		
FIS	337	Innovation and Global Developm	Persistent inequality and poverty continue to plague nations including the USA even in the 21st century. Global development is a complex idea that attempts to address interrelated paradigms of culture, economy, equity, governance, history, societal dynamics, as well as technological issues. Using the framework of the Sustainable Development Goals 2030 (SDGs) this course examines, analyzes and critiques indicators of SDGs as well as explores innovative measures of development that nations around the world are planning and implementing in order to improve the lives of their citizens now and for the future.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	338	Moviegoer's Guide to Future	Unique introduction to cutting-edge technologies and their socially responsible and ethical development and use. Whether you are majoring in science, engineering, the social sciences, the humanities, innovation and entrepreneurship, business, design, film, communication, or the arts, this class enables a better understanding of how particular skills, knowledge and interests can help ensure the socially responsible development and use of emerging science and technology. Uses science fiction movies to explore emerging trends in science and technology and their ethical, responsible and beneficial development. Instructs how to describe how responsible innovation is relevant to developing just and vibrant global futures; discusses a wide range of emerging technologies and their ethical and responsible development; and articulates the importance of taking a transdisciplinary approach to ethical and beneficial entrepreneurship.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 338 or FIS 394 (The Moviegoer's Guide to the Future) OR Visiting University Student

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FIS	351	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student
FIS	371	Impact Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Innovation allows for amazing possibilities, and within each one of us is the potential to create, apply, research and scale innovation to realize impact goals. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on what constitutes and how one achieves sustainable and scalable outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	372	Inquiry Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a particular focus on meaning making, grounded claims, and what it means to gather, analyze, construct and advance meaningful assertions and storied truths that advance productive claims about the potential of an innovation to realize impact goals.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours
FIS	373	Innovation Journey	Builds on the ideas, concepts and experiences engaged in earlier course work. Grounded in a use-inspired framework with a focus on transforming society, engages innovation for impact with a focus on imagining, designing, developing and optimizing a particular innovation such that it is likely to realize impact goals. Beyond product-centric perspectives that locate change within the innovation, this journey emphasizes an ecological perspective that positions innovation as a shared accomplishment distributed across the designed innovation, engaged participants, prepared facilitators and a responsive ecosystem.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	403	Governing Emerging Technologie	Examines the variety of ways in which societies make collective decisions or govern science and technology. Focuses on a particular category of science and technology: the set of emerging technologies like nanotechnology, artificial intelligence and robotics, genetic modification and synthetic biology, cognitive science and neurotechnology, geoengineering, and others that pose particular problems of high stakes, high uncertainty and ambiguous novelty. Closely allied with the research agenda of numerous faculty in the School for the Future of Innovation in Society, especially those in the Center for Nanotechnology in Society, the Risk Innovation Lab, and others; exposes students to inquiry and skills directly from the research front. Students perform numerous research tasks.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
FIS	431	Technology, Security and Insec	Focuses on the international political aspects of technological change; examines the impact of technological innovation and political change on the international political system. The overall goal is to create an awareness of and ability to analyze and synthesize world events, the particular role of technology, and consider the myriad ways that globalization and technology as a main driver could be changing the international system of nation-states. Technological innovation often takes place within a political context, including international politics, as nation-states and other entities develop technologies within the context of competition and power. There are several issues that run throughout the course as major themes. One is the role of technology in political and social change, and the impact of the latter on the former.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours

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FIS	432	Prob Solving-StrategicThinking	Students learn how to ask questions, brainstorm and communicate ideas, while dealing with uncertain outcomes and unpredictable risks caused by the ideas and solutions they propose. In understanding which ideas and solutions stick and which don't, students learn how different factors influence the birth, life and death of ideas and the socio-technical systems in which ideation exists. Does it matter who asks the questions and proposes the ideas, who is trying to participate, who was there first, if there is a profit or other conflicting motive and the context and the interests that result in certain solutions being picked over others? This course uses exploration learning approaches, where students follow a progression through what they discover, from understanding who they are as individuals, to how ideas are formed and hypothesis made about proposed solutions.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): minimum 45 hours
FIS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
FIS	480	Innovation Studio	Facilitates experiential learning and allows students to work with clients in the field of technology, innovation and sustainability. Through team projects with identified stakeholders, students engage, plan, design, implement and assess projects while learning interpersonal skills and managing client relationships. Students gain real-world experience and develop skills in project management, including planning, implementing and evaluating a complete project cycle. Allows students to manage both client-based projects and team relationships to complete projects. Students carry out project-based research, conduct interviews and meetings, make site visits, develop work plans and scope of works, negotiate clear deliverables with clients, implement projects and give public presentations. Presentations are grounded in the idea of conducting effective science communication.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 305
FIS	481	Application Journey	As a culminating experience, course brings together the previous experiences and emerging expertise to investigate, innovate and cultivate an impact innovation to achieve impact goals. Starting with building a grounded appreciation for a particular impact outcome, participants then design an innovation to realize a better future state, grounding this work in lessons with respect to logic models, design fictions, agile startups, and rapid prototyping. Some participants simply test a component and produce a reflective analysis, while others expand credit requirements and iterate to achieve transformative outcomes.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): FIS 371; FIS 372; FIS 373
FIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		
FIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6		Prerequisite(s): Barrett Honors student
FIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Global Futures	School for the Future of Innovation in Society	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-4		
FIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	RSC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-7		
FIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-3		
FMP	180	Prin of Production Technology	Introduces the basic terms, functions, theories and applications of film and media-making equipment and technology related to camera, sound and editing.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		
FMP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	201	Film: The Creative Process I	History, elements, and techniques of theatrical film: cinematography, directing, acting, scriptwriting, producing, and criticism.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
FMP	210	Principles of Filmmaking	Introduces majors to the world of professional film and media production. Examines all aspects of the process from a practical, real-world perspective. Students learn the importance of each phase of the creative process through the five stages of filmmaking: development, preproduction, production, postproduction, and marketing/distribution.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production BFA major; FMP 180 with C or better OR Visiting University Student
FMP	211	Film Spark Campus Intensive	Dynamically dated courses and experiences designed to bring students in contact with working industry professionals via Film Spark.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Credit is allowed for only FMP 211 or FMP 294 (Producing Independent Film and Media) or FMP 294 (Pro Casting Practices: Advice from Professionals)
FMP	215	Beg Post-Production Film & TV	Introduces the basics of post-production for digital narrative media, including instruction on Adobe Premiere Pro.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 215 or FMP 394 (Non-Linear Editing for Film and Media)
FMP	220	Film & Media Post-Production I	Required 45-hour lab designed to teach students how to use the Avid Media Composer editing program and supporting software with an emphasis on editing techniques and workflow. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor. Satisfies the Media Composer 100-level certification as part of Avid's official curriculum. Upon completion of this course, students take an exam to become an Avid Certified User.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film and Media Production student OR Visiting University Student
FMP	222	Education in Film	Critically examines how teachers, students, administrators and educational issues are dramatized and represented in popular media. Explores professional teacher preparation, socio-cultural contexts of education systems and learning, and the use of cinema as social critique.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	L	Prerequisite(s): ENG 101 (or ENG 102) with C or better. Credit is allowed for only FMP 222 or FMP 294 (Education in Film)
FMP	225	Intro VFX	Introductory look into the theory and practice of creating visual effects for film, television and games. Focuses on principles of 2D visual effects as derived and modernized from traditional special effects practices as seen in pre-digital film making. Students view, discuss and critique effects from films in the 20th and 21st centuries and engage in the creation of visual effects shots in a variety of styles employing a number of standard techniques. Covers the use of Adobe Photoshop and After Effects; however, considers some use of 3D applications in the second half of the semester. At the heart of good visual effects is a critical eye and attention to detail that is gained through critique of professional and student works on a weekly basis.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 225 or FMP 394 (Introduction to Visual Effects)
FMP	240	Intro Animation	Introduces history, theory, technique and practices of 2D and 3D animation. Covers types of animation and how to create projects for a broad variety of end uses (e.g., motion graphics, TV/film, Web, games). Students create short projects that serve as exercises to study animation techniques as well as more in-depth projects of student design.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Credit is allowed for only FMP 240 or FMP 294 (Introduction to Animation)
FMP	250	Ethics Survey Film & TV	Sex and violence portrayals in media; examines societal evolution, technological development, market imperatives, production codes, and industry realities and practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		
FMP	255	Media Authorship	Surveys the manipulation, editing, compression, encoding and search engine optimization of digital sound and video media.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	CS	Credit is allowed for only FMP 255 or FMP 294 (Media Authorship) OR Visiting University Student
FMP	261	Principles of Screenwriting	Explores fundamental skills of script writing for entertainment industry screen media, including: standard script writing software, formatting and technical standards; exercises in character creation and dramatic conflict; and analysis and understanding of common narrative structures of feature-length, series and short-form content.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): THF 160 OR Visiting University Student
FMP	280	Intro to Film/Media Production	A hands-on production course where students learn first-hand how to make films in a structured, informative environment that works through all phases of production, focusing on collaboration and application of basic mediamaking skills and technology.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Pre- or corequisite(s): FMP 180; Credit is allowed for only FMP 280 or FMP 294 (Intro to Film Production) OR Visiting University Student
FMP	285	Portfolio Prep and Rev I	Introduces the basics of Digication e-Portfolio platform, including preparation and presentation of sophomore portfolio milestone for faculty review and admission to upper-division.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): Film and Media Production BFA major; minimum 32 hours OR Visiting University Student
FMP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
FMP	300	Short Film Production	Specialized study of conventional film techniques; emphasizes the creative process through project-based, hands-on learning. Group and individual exercises cover all phases of short film production from creative inspiration to online distribution.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA major or Film and Media Production BFA major; FMP 280 with C or better OR Visiting University Student
FMP	315	Sound Design Film & Media I	Introduces creative and technical aspects of sound design for film and digital media production, including introduction to Avid Pro Tools software.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prereq(s): Film (Film & Med Prod) BA, Film (Filmmak Pract) BA, or Film and Media Production BFA major; Pre- or corequisite(s): FMP 280 or 300; Credit is allowed for only FMP 314 or FMP 294 (Sound Design: Film) OR Visiting University Student
FMP	318	Directing for Film and Media I	In-depth analysis of directing theory, textual analysis, visualization, shot composition and spatial connection, staging, rehearsal techniques, and camera movement.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 300 with C or better OR Visiting University Student
FMP	320	Film&Media Post-Production II	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and equipment, basics of visual and audio effects and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Part of the Avid Learning Partner program, taught by a Certified Avid Instructor.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 220 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student
FMP	325	Guerilla VFX	Offers the opportunity to work with a broad variety of projects with assets ranging from excellent quality to those that are more difficult to work with. In addition to work with pre-prepared assets, students also get the opportunity to create their own effects sequences from scratch (including capturing footage). Students learn best practices for capturing all needed elements on the day of the shoot as well as planning the sequence before recording. Covers work in both 2D and 3D visual effects including: matte painting (2D and 3D), set extensions and additions, blue/green screen compositing, and 3D animation for the addition of elements into a shot. The first section of the class consists of short individual assignments aimed at teaching basic core VFX skills, finishing with the production of a class-produced VFX short film. Class member assignments are based off of individual skill and interest.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 225 with C or better; Credit is allowed for only FMP 325 or FMP 294 (Guerilla VFX) OR Visiting University Student
FMP	330	Pro & Tech Writing for Film/TV	Professional (noncreative) writing skills that prepare students for a career in the entertainment industry.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 261 with C or better; minimum 56 hours OR Visiting University Student
FMP	335	Careers in Film/Media Ind	Basics of starting a freelance career in the film and media industry; the necessary tools and skills needed to move that career forward through the creation of various business and professional tools; and the various techniques needed to succeed in a variety of production environments.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Digital Culture (Film) BA, Film BA, or Film and Media Production BFA major; FMP 201 or 285 with C or better OR Visiting University Student
FMP	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
FMP	345	Cinematography I	Cinematographer's role, photographic and visual theory, framing, shot composition, cameras and equipment, crew management, basic lighting for film and video.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): The Sidney Poitier New American Film School major; FMP 201 or 280 with C or better; Pre- or corequisite(s): FMP 300 OR Visiting University Student
FMP	350	Directing Documentary Media	Introduces directing students to the various practices, approaches and techniques of professional documentary media making, including creation of short-form projects that highlight both individual and collaborative perspectives on real-life figures, events and communities.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 280 or 300 with C or better; Credit is allowed for only FMP 350 or FMP 394 (Documentary Production) OR Visiting University Student
FMP	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)

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FMP	360	The Filmmaker's Voice	Explores the various ways in which film artists demonstrate their unique perspective and ability, via extended analysis of noted works defined by strong artistic vision, discussion of cultural and historical values, and development of each student's creative voice.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Dance BFA, Digital Culture (Film) BA, Film BA, Film (Film and Media Production) BFA, or Theatre BA major or Film minor; minimum junior standing OR Visiting University Student
FMP	361	Int Screenwriting	Explores the basic components of feature screenwriting: story creation, story structure, character development, conflict, pace, tone, dialogue. Each of these skills will be revisited in more detail, culminating in a series of writing exercises (10-20 pages each), verbal pitch exercises and other focused exercises designed to develop the student's unique writing voice.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 261 with C or better; Credit is allowed for only FMP 361 or FMP 394 (Intermediate Screenwriting) or FMS 394 (Intermediate Screenwriting) OR Visiting University Student
FMP	365	Developing a Series	Acquaints students with the development process for episodic series (network, cable, Web, on-demand). Also explores the many facets of the television industry (creative, financial, cultural, historical) and surveys the advances in television content along with an analysis of the cultural impact of television on society.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Digital Culture (Film) or Film major or Film & Media Production minor or Film & Media Production concentration; FMP 261 w/ B or better; Credit is allowed for only FMP 365 or FMP 394 (Developing a TV Series) OR Visiting University Student
FMP	370	Producing	Provides the information and techniques to understand the process of being a producer in the film and media industries.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 300 with C or better; Credit is allowed for only FMP 370 or FMP 494 (Producing Film) OR Visiting University Student
FMP	380	Film Production Crew	Provides practical, on-set experience in the creation of film and digital media, for all students in the BA Film or BFA Film and Media Production programs, in support of projects required by upper-division coursework or otherwise approved and supervised by faculty.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Prerequisite(s): Film (Filmmaking Practices) BA, Film (Film and Media Production) BA, or Film and Media Production BFA major; FMP 300 with C or better; minimum 2.50 cumulative GPA OR Visiting University Student
FMP	385	Portfolio Project Development	Provides the opportunity for all Film and Media Production majors to conceive, develop and complete the intellectual property that will form the basis of their senior portfolio projects.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 285 with C or better; Credit is allowed for only FMP 385 or FMP 398 OR Visiting University Student
FMP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		
FMP	395	Combat in Film	Interdisciplinary approach to and qualitative method for analyzing war movies and military dramas as both historical and cinematic narratives that represent the experiences of infantry marines and soldiers in 20th- and 21st-century U.S. wars.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENG 394 (Combat in Film) or ENG 395 or FMP 395 or HST 306 (Combat in Film) or HST 395 or VTS 395 OR Visiting University Student
FMP	398	Capstone Development	Provides the opportunity for all Film and Media Production majors to conceive, develop and complete the intellectual property that will form the basis of their required final capstone projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	2		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 300 with C or better; minimum junior standing; Credit is allowed for only FMP 385 or FMP 398 OR Visiting University Student
FMP	400	Advanced Short Film Production	Advanced production course for students to make short films in support of senior portfolio.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 300 with C or better OR Visiting University Student
FMP	401	Senior Practicum	Weekly advising and consulting with faculty and peers on senior portfolio projects, professional development and career planning.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): FMP 385 with C or better; senior standing
FMP	403	Independent Film	Considers the history of avant-garde, alternative and independent film making in American cinema, with an emphasis on shifting technology, industrial practices and cultural innovations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMP	404	World Cinema	Films and filmmakers from Europe, Asia, Australia, the Far East, South America, and the Caribbean. Emphasizes cultural content and filmmaking philosophies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	G	Prerequisite(s): ENG 102, 105 or 108 with C or better
FMP	405	Film & TV: Pioneers, Practices	Examines major historical figures, generic conventions and institutional practices in the global film, television and media industries.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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FMP	411	Film Sprk Welcome to Hollywood	Students gain a sense of how the entertainment industry works by examining the product life cycle of filmed entertainment products including inception, development, casting, packaging, financing, production, marketing and distribution.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum junior standing; Credit is allowed for only FMP 411 or FMP 494 (Welcome to Hollywood) OR Visiting University Student
FMP	415	Sound Design for Film&Media II	Advanced sound design and delivery for film and media, including post-production sound, music, effects, ADR, and other elements; advanced use of Avid Pro Tools and other industry standard audio recording and producing hardware and software.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 315 with C or better; Credit is allowed for only FMP 415 or FMP 494 (Advanced Sound Design Film and Media) or FMP 598 (Advanced Sound Design Film and Media) OR Visiting University Student
FMP	417	Bus & Legal in Entertainment	Examines standard business and legal elements of the film and media entertainment industry, including historical, theoretical and ethical frameworks for understanding current practices.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
FMP	418	Directing for Film & Media II	Expands on effective techniques for working with actors and on the director's preparation for shooting scenes and films. Students learn while directing with professional set protocols in this hands-on, set-driven class.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 318 with C or better OR Visiting University Student
FMP	420	Post-Production III	In-depth analysis of editing theory, storytelling, nonlinear editing techniques and software, advanced sound design and color grading using the Avid Media Composer editing program and supporting software with an emphasis on storytelling and aesthetics. Students receive critiques of their work after each project to determine the development of their proficiency of craft and creativity.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 320 with C or better OR Visiting University Student
FMP	445	Cinematography II	Advanced cinematographic and motion picture photography techniques, including study of advanced lighting, integration of digital technologies, new hardware and software, and professional development for directors of photography, camera assistants, and grip/electric department personnel.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 345 with C or better; Credit is allowed for only FMP 445 or FMP 494 (Advanced Study: Cinematography) OR Visiting University Student
FMP	461	Advanced Screenwriters Wrkshp	For advanced screenwriting students to create screenplays for television, film and new media in support of senior projects and professional portfolios.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 385, FMP 398, or THF 397 with C or better; Pre- or corequisite(s): FMP 361; Credit is allowed for only FMP 461 or FMP 494 (Writing the Feature) or FMP 598 (Writing the Feature) OR Visiting University Student
FMP	465	Series Writers Workshop	Offers selected students the opportunity to develop and refine material for a proposed episodic series through collaborative workshops and writing sessions that are equivalent to the development processes utilized in various industry paradigms (network, cable, Internet/on-demand).	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): FMP 365 or 394 (Developing a TV Series) with C or better; Digital Culture (Film) or Film major or Film & Media Prod. minor or BIS (Film & Media Prod.); minimum junior standing. Credit for only FMP 465 or 494 (Television Writing Workshop)
FMP	475	Producing Series	Function and responsibilities of episodic series producers and production executives for television-based platforms (network, cable, internet/on-demand). Explores a close examination of the business of television, specifically budget, license fees, distribution, and union obligations. Other topics include the structure of studios and networks, producing and marketing series for traditional and new media platforms, and general entertainment business practices.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film & Media Production) BA, Film (Filmmaking Practices) BA, or Film and Media Production BFA major; minimum junior standing OR Visiting University Student
FMP	480	Film Lab I: Production	Production and principal photography for student-generated collaborative short film/media projects for senior portfolio.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 385 or 398 with C or better OR Visiting University Student
FMP	481	Film Lab II: Post-Production	Completion of principal photography and all phases of editing/post-production on student-generated collaborative short film/media projects for senior portfolio, including final delivery and exhibition.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	3		Prerequisite(s): Film (Film and Media Production) BA or Film and Media Production BFA major; FMP 480 with C or better OR Visiting University Student
FMP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): minimum 45 hours
FMP	485	Portfolio Prep and Rev II	Helps students in the advanced development, design, preparation and presentation of senior portfolio milestone for faculty review, as well as mentors fellow students in early portfolio development.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1		Prerequisite(s): Film and Media Production BFA major; senior standing OR Visiting University Student

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FMP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6		Prerequisite(s): Barrett Honors student
FMP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FMP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Prerequisite(s): Film and Media Production student or Filmmaking Practices student or Film and Media Production minor OR Visiting University Student
FMP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-7		
FMP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-3		Pre-requisites: Film & Media Production or Filmmaking Practices student
FMP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	The Sidney Poitier New American Film School	1-4		Pre-requisite: Fine Arts Graduate student
FMS	100	Intro to Film & Media Studies	Introduces the narrative structure, visual style and cultural elements of film and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
FMS	110	Introduction to New Media	Explores the cultural effects of new media technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	
FMS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	200	Film and Media History	Introduces the technological, aesthetic, social and economic aspects of media history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
FMS	209	Screenwriting Fundmnts	Studies the creativity and the technique of screenwriting for the conventional narrative film and for TV; student writing exercises culminate in a script for micro cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		
FMS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	300	Television Studies	Examines approaches to studying the culture and history of American television.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	302	U.S. Media Industries	Examines the business of contemporary U.S. film, television, and new media and its relationship to artistic vision and production through research and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 OR Visiting University Student
FMS	309	Intermediate Screenwriting	Utilizing the elements of storytelling, students develop and write a treatment and the first act of a screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMP 261, FMS 209 or THP 261 with C or better OR Visiting University Student
FMS	340	Contemp Amer Film/Pop Culture	Analyzes American films, television programs, and music as popular cultural documents.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better OR Visiting University Student

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FMS	341	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
FMS	345	Asian Pacific Americans & Film	In-depth examination of the representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C & H	Prerequisite(s): APA 200, APA 210, FMS 100, or minimum 24 hours; Credit is allowed for only APA 345 or FMS 345 OR Visiting University Student
FMS	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
FMS	351	Emerging Digital Media	Analyzes modern cultural and digital technologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS 352 or TCL 352
FMS	354	Critical Studies in Animation	Provides critical and practical tools for analyzing mainstream, experimental, and hybrid animation aesthetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): FMS 100 OR Visiting University Student
FMS	360	Media Genres	Studies in select media genres.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR FMS 100 or 200 with C or better OR minimum 45 hours OR Visiting University Student; Credit is allowed for only FMS 360 or FMS 394 (Sci Fi Cinema: Technology, Genre & Culture)
FMS	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Credit is allowed for only FMS 370 or TCL 370
FMS	374	Film and Media Visionaries	In-depth examination of the career and body of work of an innovator in media, whether a producer, director or screenwriter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
FMS	375	LGBTV: TV, Sexuality, Gender	Some of TV's most popular shows now feature lesbian, gay, bisexual and transgender (LGBT) characters. This course looks at representations of LGBT characters and personalities, with a focus on the specificities of the television industry. Looks at LGBT representations on reality shows, sitcoms and dramas in relation to the economic and regulatory structures of the TV business to understand the complex functions of sexual identity in the television industry. Addresses particular texts and images as they relate to TV's industrial practices, paying attention to cultural, political and aesthetic issues of minority representations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 375 or FMS 394 (LGBTV: Television and Sexuality) OR Visiting University Student
FMS	377	Baseball, Film & America Dream	Critical viewing and analysis of both narrative and documentary baseball film. Genre typically explores American values and national culture, and changes in our concepts of gender roles, race, aging, social class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 OR Visiting University Student
FMS	380	Race and Gender in U.S. Media	Critical analysis of how media shapes perceptions of race and gender in U.S. society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
FMS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		

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FMS	409	Advanced Screenwriting	Utilizing the elements of storytelling, students outline, develop, and write a feature-length screenplay.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better; FMS 309 with C or better
FMS	411	Screenwriting Adapt Studies	Explores the many issues related to narrative adaptation across movies and other media such as television, various Internet phenomena and gaming.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor or BIS Film and Media Studies concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 411 or FMS 494 (Screenwriting Adaptation Studies)
FMS	412	Story Analysis for Film & TV	Investigates Hollywood's creative development process from submission to shooting script. Critiques the scripts of award-winning films, and evaluates the necessary elements of a well-told story.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies major, minor, or Film and Media Studies BIS concentration; ENG 102, 105, or 108 with C or better; FMP 261 or FMS 209 with C or better; Credit is allowed for only FMS 412 or FMS 494 (Story Analysis for Film and TV)
FMS	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
FMS	426	Films of India	Examines classic, Bollywood and diasporic films of India from 1950 to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 444 or ARS 544 or FMS 426 or ARS 494 (Films of India) or ARS 494 (South Asian Cinema)
FMS	427	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critique stereotypes.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 440 or ENG 465 or FMS 427 OR Visiting University Student
FMS	430	Artists in Film: Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (e.g., genius, deviant); and how notions of creativity are infected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): any 200-level or higher course in APH, ARS, ENG, FMS, HST, or MHL with B or better; Credit is allowed for only ARS 443 or FMS 430
FMS	440	Los Angeles: Movies and Culture	Explores film treatment of the historical culture of Los Angeles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s): BA Film and Media Studies major or minor or BIS Film and Media Studies concentration; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	441	Global Cinema	Examines how film represents three important dimensions of globalization: its relationship to national culture, terrorism, and immigration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better

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FMS	442	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
FMS	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
FMS	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
FMS	450	Technology, Culture, and Media	Studies the socio-political relationships among technology, culture, and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	455	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension on the big and small screens. By examining how comic conventions, personae and sensibilities in standup respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences--often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 455 or FMS 494 (Comedy as Social Discourse)
FMS	460	Masculinity and Film	Examines the representation of masculinity and the male body in film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	461	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student
FMS	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
FMS	466	Constructing Border on Film	Explores the U.S.-Mexico border on film, examining how border images have been constructed and shaped over time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	C	Credit is allowed for only FMS 466 or TCL 466
FMS	468	Crime & Violence American Film	Addresses three primary aspects of crime and violence in film: representation, societal attitudes, effects on audience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): Film and Media Studies student; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	471	Latinos In Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
FMS	474	Women and Power in Media	Examines the relationship between power and gender for women and other feminized subjects in media.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): ENG 102, 105, 108, FMS 100, or 200 with C or better; OR minimum 45 hours; Credit is allowed for only FMS 474 or FMS 494 (Fighting Femmes: Women and Power in PopularCulture) OR Visiting University Student
FMS	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
FMS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		

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FMS	490	Capstone Seminar	Capstone seminar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3	HU	Prerequisite(s): BA Film and Media Studies major; minimum 56 hours; ENG 102, 105 or 108 with C or better; FMS 100 with C or better
FMS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-6		Prerequisite(s): Barrett Honors student
FMS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of English	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FMS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		
FMS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-7		
FMS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-3		
FMS	502	Hollywood Film Historiography	This course is offered online only. Explores historiographic and critical scholarship on Hollywood as an industrial, cultural, and aesthetic enterprise.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	503	Media Industries	Examines the business of contemporary U.S. media practices including film, television, Web-based media, music, video games, mobile phones, and other interactive media. Explores the changing economic structures of these media industries and their relationship to artistic vision and production.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Master of Liberal Studies student or MAS in American Media and Popular Culture student. Credit is allowed for only MLS or FMS 504
FMS	507	Crime & Violence American Film	This course is available online only. Focuses on historiographic and critical scholarship on three aspects of crime and violence in American film: (1) regulation and censorship; (2) representation and society; and (3) theories about the effects on audiences of viewing crime and violence in films.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	508	Race,Gender&Sexuality in Media	Investigates the diverse ways in which race and gender are represented in American film history and culture. In a broader context, also analyzes how the meaning of race and gender, and their intersectionality, has shifted and changed across time and space, and how cinema has contributed to these shifts. Gives attention to the relationships among visual style, narrative structure, generic convention and identity. Students become more literate about the power of film to reflect and refract ideologies of race and gender, and to analyze how these identities impact the experiences of individuals and groups in our society.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	510	Digital Media Studies	Digital media technologies have radically shifted U.S. society and culture. Almost all forms of media are now digital, even broadcast television and movie theatres now use digital technologies. To understand our new media landscape, we must understand technology and computation in addition to media theory. Provides the interdisciplinary tools necessary for analyzing digital media. Outlines foundational concepts with particular emphasis on analyzing hardware and interface design and understanding computational elements such as algorithms. Then examines these issues by exploring algorithm advertising and marketing as well as interactivity and collaboration in videogame spaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	511	Fund Cinema Telev Narr Online	Studies the creativity and the technique of screenwriting for the conventional narrative film and for television. Student writing exercises culminate in a script for micro-cinema. Seminar. Pre-requisite: online student in MAS American Media and Popular Culture	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	512	Inter Cinema & Tv Narrative	Focuses on the feature-length screenplay; students complete the first act and treatment of an original feature.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Film and Media Studies MAS student
FMS	520	Cultrl Hst US TV:Theory & Mthd	Engages both the theory and methods of cultural studies as implemented in television studies and U.S. television history (from the 1940s to the present).	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)

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FMS	522	Los Angeles: Movies & Culture	Focuses on historiographic and critical scholarship of industry, genre and representation in post-war, self-reflexive Hollywood cinema.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	523	Autorship in Film and Media	Explores the notion of authorship in film, television, and digital media by engaging with a number of critical methodologies such as auteurism, structuralism, post-structuralism, feminism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	527	Identity and World Film	Examines how films around the world represent gender, race, ethnicity, and sexual orientation through the lens of genres and their variations and how genres reinforce or critiques stereotypes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ARS 540, FMS 527 or (ARS 494, ENG 465, FMS 494 or ARS 598 Identity and World Film)
FMS	535	Comedy as Social Discourse	Focuses upon the way that comedy can speak with particular clarity to the American condition from behind the microphone and, by extension, on the big and small screens. By examining how comic conventions, personae and sensibilities in stand-up respond to change in social and political sensibilities at specific historical moments, we tease out why comedy, perhaps more than any other genre, can get people to engage (and to think about) a variety of human experiences--often in spite of themselves.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FMS 535 or FMS 598 (Comedy as Social Discourse)
FMS	543	Artists' Biopics	Examines artists' "biopics," biographical films about artists, chronologically from the subgenre's first appearance in 1936 to recent films. Explores relationships between film and history and between film and myths of creativity; major directors' attraction to artists' biopics; stereotypes of artists (genius, deviant, etc.); and how notions of creativity are inflected by gender, race and national identity. Assignments include weekly readings and film viewings and one short paper; optional documentaries and films are also available.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ARS 443 or ARS 543 or FMS 430 or FMS 543 or ARS 598 (Artists in Film: Biopics)
FMS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
FMS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FMS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	105	Phys Evid and the Crime Scene	First course in a two-semester series of laboratory and lecture courses focusing on introducing non-scientists to forensic science. Explores the investigative and laboratory technologies behind common forensic techniques utilized in crime scene documentation and reconstruction, the identification and value of physical evidence, documentation and collection of evidence, comparative analysis, and the latest technologies in mobile device forensics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	106	Biol Behind the Crime Scene	Second of two courses offering the non-scientist an introduction to the forensic sciences. Focuses on the biology and chemistry in analytical techniques used in the crime lab such as quantitative DNA analysis, toxicology and controlled substance analysis. Also covers topics related to death investigation, as well as plant and pollen identification as they relate to forensic science and criminal investigations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SQ	
FOR	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		

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FOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
FOR	286	Prin. of Forensic Science	Introduces the ways in which science is applied within the legal system. In particular, students examine the diverse disciplines and techniques that comprise forensic science through detailed discussion of each of the major sections recognized by the American Academy of Forensic Sciences (AAFS): anthropology, criminalistics, digital & multimedia sciences, engineering & applied sciences, general, jurisprudence, odontology, pathology/biology, psychiatry & behavioral science, questioned documents and toxicology. Defines and discusses the roles of these disciplines along with ethics and best practices in their application. Students also participate in laboratory activities related to these disciplines and gain an understanding of how to write a case report and provide expert testimony.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; CHM 113 with C or better; CHM 116 with C or better OR Visiting University Student
FOR	290	Hist Perspect of Forensic Sci	Explores the history and evolution of forensic science and its use in criminal investigations. Topics include: the "discovery" of DNA, the societal impact of forensic science, increased use of forensic science in criminal investigations, and a timeline of technological advances that has helped propel forensic science into popular culture.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Credit is allowed for only FOR 290 or FOR 294 (Historical Perspectives of Forensic Science)
FOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	350	Computer Forensics	Concepts of computer forensics, forensic analysis techniques, computer forensic tools and software for forensic investigators, network forensics, data forensics, mobile device forensics, malware forensics, cyber crimes and fraud, computer security incident response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ACO 100 or higher with C or better OR CIS 105 with C or better
FOR	370	Fundamentals Forensic Analysis	Builds on foundational material learned in previous coursework while focusing on the procedures and techniques used in forensic science laboratories. Applies lecture material to hands-on laboratory exercises based on current practices across forensic science subdisciplines including chemistry, biology and criminalistics. Covers quality assurance procedures specific to these areas of forensic science in the lecture and laboratory sections.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 182 with C or better; BIO 305 or FOR 286 with C or better; CHM 116 with C or better OR Visiting University Student
FOR	377	For Analyt Chem Lab	Focuses on common analytical techniques currently used in forensic laboratories and provides further hands-on experience with methods and instrumentation utilized in a modern crime laboratory. Applies gained knowledge to lab exercises designed with crime laboratory evidence types and protocols in mind.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): FOR 375 or LSC 375 with C or better; FOR 376 or LSC 376 with C or better
FOR	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347 with C or better if completed; Credit is allowed for only FOR 380 or LSC 380 OR Visiting University Student
FOR	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)

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FOR	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
FOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	400	Comparative Forensics	Familiarizes students with the comparative methods used in the forensic analysis of fingerprint, questioned document and firearms evidence. Discusses the theory and principles of individualization as assessed in forensic casework. Exposes the operation and theory of the scientific instruments used when performing comparative analysis. Reinforces learning objectives through case studies, practical exercises, outside projects and guest lectures.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 182 with C or better; CHM 116 with C or better; Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed OR Visiting University Student
FOR	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed OR BIO 353 with C or better if completed; LSC 347 with C or better if completed; Credit is allowed for only FOR 401 or PTX 401 OR Visiting University Student
FOR	402	Forensic Biology	Focuses on molecular genetics and biology pertaining to forensic science. Course subject matter includes: the history of forensic biology, serological techniques, DNA and DNA analyses, topics in molecular genetics, and forensic biology in the crime lab. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic biology). Addresses other topics such as current court cases and topics related to forensic biology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed; LSC 347 with C or better if completed; LSC 348 with C or better if completed OR Visiting University Student
FOR	403	Comparative Forensics Lab	Largely focuses on the application of physical examination of various types of evidence including fingerprints, tape, footwear, handwriting, paper, cartridge casings and bullets. Provides hands-on experience in latent print, trace, questioned document and firearms analysis. These analyses include the utilization of stereozoom microscopes, comparative microscopes, compound microscopes, alternative light sources and other hand tools employed by forensic scientists.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed; FOR 400 with C or better if completed OR Visiting University Student
FOR	404	Forensic Toxicology Lab	Focuses on best practices and contemporary protocols and practices used by forensic toxicology labs. Offers topics and exercises dealing with drugs of abuse including alcohol, prescription medications, over the counter medications, and other substances which may be found in the body by the forensic toxicologist.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed; FOR 401 with C or better if completed; Credit is allowed for only FOR 404 or PTX 404 OR Visiting University Student
FOR	405	Techniques in Forensic Bio Lab	Covers the basic practical concepts of forensic biology and those used in a biological context at crime scenes. Laboratory exercises include blood pattern analysis, serology, presumptive tests, comparison of hair evidence and DNA analysis.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BIO 181; BIO 182; CHM 113; CHM 116; Pre- or corequisite(s) with C or better if completed: BIO 305 or FOR 286; FOR 402; LSC 347; LSC 348 OR Visiting University Student
FOR	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
FOR	410	Testimony&Ethics Forensic Sci	Focuses on the relationship between forensic science and the courtroom. Students learn the accepted standards and professional practices as they relate to forensic scientists and other forensic practitioners. Topics include ethical obligations of a forensic scientist, quality assurance practices and the accreditation process. Students also review the role the expert witness plays within the court system while obtaining an understanding of behavioral and ethical issues that can be encountered from crime scene investigation through to the courtroom. Includes mock trial scenarios.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 305 or FOR 286 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student

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FOR	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
FOR	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
FOR	426	Analytical Chemistry Lab	Students learn basic principles of analytical chemistry and explore a wide range of common techniques and methods with applications to forensic science and life sciences. Places specific focus on techniques common in modern analytical laboratories, including gas chromatography, mass spectrometry, FTIR and NMR spectroscopic techniques. Other topics include interpretation of analytical data and evaluation of error and uncertainty in measurements.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
FOR	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
FOR	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
FOR	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
FOR	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
FOR	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
FOR	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): LSC 347 with C or better; Credit is allowed for only FOR 480 or LSC 480 OR Visiting University Student
FOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours
FOR	485	Forensic Science Capstone	Culmination course integrating all components of Forensic Science major courses demonstrating knowledge and competency in the field of forensic science. Includes Forensic Science Assessment Test (FSAT) preparation and FSAT completion.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): FOR 410 with C or better; 6 additional hours of upper-division FOR coursework with C or better; senior standing
FOR	486	Peer Mentor Forensic Sci	Advanced students learn and apply mentoring skills in teaching labs.	N	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
FOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student

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FOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
FOR	496	Forensic Science Service Learn	Brings a multidisciplinary approach for connecting forensic science with the public. Students use what they have learned throughout their degree to bring this knowledge to the public through a variety of avenues. Consists of various service learning opportunities that may include working on cold cases, lesson plan and activity design with high school educators and educating the general public.	N	PRO	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): FOR 370 with C or better; minimum 45 hours
FOR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
FOR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
FOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
FOR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	501	Forensic Toxicology	Includes the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body, as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology).	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	502	Forensic Botany	Teaches students the historical and potential uses of plants and other organisms traditionally included with plants as evidence in forensic investigations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	503	Forensic Entomology	Presents current information on the role of arthropods in decomposition, the role of forensic entomology in criminal and civil investigations and the increasing importance of science on society. Provides an understanding of the importance and role that arthropods play in civil and criminal investigations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	525	Forensic Science & Governance	Focus on quality assurance and control within a crime laboratory and covered topics specific to laboratory directors and the management of all activities within the laboratory critical to meeting local, regional and national standards.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	532	Principles/Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	540	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	550	Ethics in Forensic Science	Covers several professional codes of ethics and common ethical dilemmas that may confront criminalists and other forensic scientists.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	560	Quant Methods/For Sci Research	Focuses on developing foundations for using statistical analyses as research tools in the forensic sciences, with special emphasis placed on the fundamentals.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	565	Lab Leadership, Policy & Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
FOR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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FOR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FOR	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	101	Elementary French I	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in FRE 101 if credit with C or better earned in FRE 102, FRE 110, FRE 201, FRE 202 or FRE 210 OR Visiting University Student
FRE	102	Elementary French II	Introduces the French language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative: listening, speaking, reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 101 with C or better OR French Placement Test score of 281-340; Students may not enroll in FRE 102 if credit with C or better earned in FRE 110, 111, 201, 202, 210, 305, 311, 312, 321, 322, 411, or 412 OR Visiting University Student
FRE	110	Intensive French I	Proficiency-based course that provides an intensive introduction to the French language and culture. Introduces the language and culture through a variety of topics from everyday life. Focuses on the development on all four communicative skills. Class time is spent mainly on communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only FRE 110, FRE 101 or FRE 102 with a C or better OR Visiting University Student
FRE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	201	Intermediate French I	Grammar review, with emphasis on development of skills of speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 102, 110, or 111 with C or better OR French Placement Test score of 341-394; Students may not enroll in FRE 201 if credit with C or better earned in FRE 210 OR Visiting University Student

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FRE	202	Intermediate French II	Continuation of grammar review with emphasis on development of skills in speaking, reading, writing, and listening comprehension.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): FRE 201 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 202 if credit with C or better earned in FRE 210 OR Visiting University Student
FRE	210	Intensive French II	Second semester of an intensive, proficiency-oriented language course designed to develop functional proficiency in French in a dynamic communicative environment. Class time is spent mainly on a variety of communicative activities based on active listening and speaking practice of everyday French as used in different social situations, with much use of various print, video and Web-based media.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): FRE 102 with B or better OR FRE 110 with C or better OR French Placement Test score of 395-476; Students may not enroll in FRE 210 if credit with C or better earned in FRE 201 or FRE 202
FRE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	305	Readings in French Literature	Survey of francophone literature designed to teach reading with facility and comprehension. Vocabulary building, familiarity with literary terms, their meaning and use, and introduction to textual analysis of literary genres are major elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better; Students may not enroll in FRE 305 if credit earned in FRE 321 or FRE 322 OR Visiting University Student
FRE	311	Oral and Written Expression I	Practices interpersonal and interpretive writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better OR French Placement Test Score of 477+ OR Visiting University Student
FRE	312	Oral and Written Expression II	Practices presentational writing and speaking, emphasizing current usage and promoting facility in the expression of ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 202 or 210 with C or better or Visiting University Student
FRE	315	French Phonetics	Practice and theory of French pronunciation. Emphasizes standard French, although an overview of regional varieties is offered.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisites: FRE 311
FRE	319	Business French	Introduces the structure, vocabulary, and practices of the French business world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; FRE 312
FRE	321	Fre Cultural Masterpieces I	Masterpieces of French literature of the Middle Ages through the 18th century, and related films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; FRE 305 with C or better; FRE 311 with C or better; Pre- or corequisite(s): FRE 312 OR Visiting University Student
FRE	322	Fre Cultural Masterpieces II	Masterpieces of French literature and film from the 19th to 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; FRE 305 with C or better; FRE 311 with C or better; Pre- or corequisite(s): FRE 312 OR Visiting University Student
FRE	325	French Lang & Cult thru Film	Reviews French vocabulary and grammar through French films, with emphasis on listening comprehension and oral and written production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): FRE 202 or 210 with C or better; Pre- or corequisite(s): FRE 311 or 312 OR Visiting University Student
FRE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	411	Advanced Spoken French	Improvement of spoken French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 311; 6 hours of 300-level French OR Visiting University Student
FRE	412	Advanced Written French	Improvement of composition skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): FRE 312; 6 hours of 300-level French
FRE	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
FRE	415	French Civilization I	Political, intellectual, social, economic, and artistic development of France from its origins to the end of the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites:6 hours of upper-division French

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FRE	416	French Civilization II	Political, intellectual, social, economic, and artistic development of France from the 18th century to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	pre-requisites:6 hours of upper-division French
FRE	421	Structure of French	Phonology, morphology, syntax, semantics, and varieties of French.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): FRE 311, 312; SLC 201
FRE	453	Theater of the 19th Century	From Romantic drama to the Symbolist Theater. Representative plays of Hugo, Musset, Vigny, Dumas, Becque, Rostand, Feydeau, and Mirbeau.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	461	Modern Narrative	Representative authors from Gide to the new Nouveau Roman.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Pre-requisites: FRE 322; 6 hours of 300-level French courses
FRE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
FRE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
FRE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FRE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
FRE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
FRE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	521	History of the French Language	Principal phonological, morphological, and semantic developments of French from Latin to present, with emphasis on Old and Middle French. Some familiarity with Latin is recommended.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	550	French for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FRE 494 (French for Reading Knowledge) or FRE 550 or FRE 598 (French for Reading Knowledge)
FRE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
FRE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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FSE	100	Introduction to Engineering	Introduces the engineering design process; working in engineering teams; the profession of engineering; engineering models, written and oral technical communication skills.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	2		
FSE	104	EPICS Gold I	First of a sequence of two one-credit service-learning courses in which EPICS GOLD groups are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students work together to assess the feasibility and sustainability of their proposed plans for long-term projects that solve problems and benefit clients and often, the larger community. Project work centers on the engineering, technology, computing, sustainability, business and other needs of a not-for-profit community partner; interdisciplinary group interaction is an integral element for the project success.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Schools of Engineering student; Credit is allowed for only FSE 104 or FSE 194 (EPICS Gold I) OR Visiting University Student
FSE	150	Grand Challenges for Engrg	Explores social dimensions of developing engineering solutions to meet local and global challenges. Introduces National Academy of Engineering (NAE) Grand Challenges for engineering and Grand Challenge Scholars Program.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	SB	Prerequisite(s): Admission to the Engineering Grand Challenge Scholars Program OR Visiting University Student
FSE	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3	HU	Credit is allowed for only SOS 181, FSE 181, or CEE 181
FSE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	201	Engineering Undergraduate TA	Theory and rationale of active learning and teaching strategies that stimulate intellectual development. Leadership, teaching, teamwork and communication skills needed to facilitate effective undergraduate learning in engineering. Implementation of these skills in a classroom setting.	N	PRA	Y	YGB	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Ira a Fulton School of Engineering major; minimum sophomore standing OR Visiting University Student
FSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	301	Entrepreneur & Value Creation	In-depth application of entrepreneurial concepts including opportunity recognition, value creation and new business management. Identifies the needs of a market and problem solves to meet those needs through innovation. Covers common mistakes made in the new venture process and how to work to avoid these mistakes.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Prereqs: Business student; ACC 241, 242 or 271 with C or better OR Engineering student; minimum junior standing OR non-business student; minimum junior standing; minimum 2.50 GPA; Credit allowed for only ENT 360 or FSE 301 OR Visiting University Student
FSE	310	Transfer Success in FSE	Introduces the unique elements, culture, challenges and opportunities at ASU and within the Ira A. Fulton Schools of Engineering. Helps students succeed as engineering students and ultimately as engineers.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): Fulton Engineering undergraduate student; Credit is allowed for only FSE 310 or FSE 394 (Transfer Success in Engineering) OR Visiting University Student
FSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
FSE	399	Cooperative Work Experience	Work periods with industrial firms or government agencies alternated with full-time course work. Not open to students from other colleges.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-15		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
FSE	404	EPICS Gold: EPICS in Action	Second of a sequence of two one-credit service-learning courses in which Engineering Projects in Community Service (EPICS) teams are formed from students potentially representing all engineering, computer science and construction disciplines as well as other ASU majors, including sustainability, business, liberal arts, sciences and others. Groups of 4-5 students in this class work together to develop design solutions for representatives of community partners. The students are expected to continue their prior work in designing engineering solutions that solve problems and benefit clients and often, the larger community. Interdisciplinary group interaction is an integral element for the project success. Students may be continuing a project from a previous FSE 104 or FSE 404 class, or they are invited to begin work on a new project. Encourages student participation for multiple consecutive semesters on a project. Groups are composed of freshmen through seniors.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-2		Prerequisite(s): Fulton Engineering student; minimum junior standing OR FSE 104 OR FSE 494 (EPICS Gold: EPICS in Action) OR Visiting University Student

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FSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		
FSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6		Prerequisite(s): Barrett Honors student
FSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	0.25-4		
FSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-3		
FSE	501	Technology Entrepreneurship	Fundamental principles and concepts of technology entrepreneurship.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
FSE	502	Strategic Enterprise Innovatin	Strategies, techniques, and practices of process, product, and management innovation across the enterprise.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Pre-requisite: School of Engineering Graduate student
FSE	508	Engineer and Construct Failure	Engineering, construction and ethics failures. Focuses on failures in the built environment. Students tailor the assignments and projects to their specific engineering or construction discipline.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	3		Prereq(s): degree- or nondegree-seeking graduate student; Credit allowed for only CON 508 or FSE 508 or CEE 598 (Engineering and Construction Failures) or CON 494 (Engineering and Construction Failures) or CON 598 (Engineering and Construction Failures)
FSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
FSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		Prerequisite(s): Fulton Engineering graduate student
FSH	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): Fashion BA major; Credit is allowed for only FSH 125 or HDA 125 OR Visiting University Student
FSH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	201	Textiles Survey	Offers a broad survey of textiles as they relate to art, fashion and their place in human culture. Topics explore material content, weaves and textile properties; the artistic and social history of textiles; modern textile manufacturing and consumption; and innovations in textile invention for science and industry. The goal of this semester is for you to more fully understand the underlying content and structure of textiles in order to better appreciate the overwhelming variety of textiles that have been created over time, place, gender, ethnicity, purpose and methodology.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 201 or ART 294 (Textiles Survey) OR Visiting University Student
FSH	202	Apparel Construction	Prepares students for a career in the apparel industry or for continued study in graduate school. Introduces core concepts of fashion materials and construction: cutting, sewing and finishing techniques for creating garment prototypes. Focuses on the fashion industry as well as apparel construction and production.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		

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FSH	203	Fashion Illustration I	In this studio setting, students practice drawing the fashion figure from a live model, both in leotard and in clothing, facilitating understanding of drape, shape, shadow, silhouette and how it relates to fashion design. Demonstrates and practices fundamental skills of visual communication and problem solving, including fabric rendering and proportion and how it relates to the fashion designer's sketch. Brief lectures, demos and critiques are an integral component of each class. Materials used in class include, yet are not limited to, charcoal and gouache.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): ART 110 or ART 111 OR Visiting University Student
FSH	204	Social Aspects of Fashion	Introduces ways of examining clothing and fashion in context. How do we read images and representations of clothing and how do they manipulate the meaning of the garment and its wearer? In what ways is this visual language used to select and produce fashion? What influences how we dress on a daily basis and over time? These are just some of the questions about appearance, clothing and culture that are used to embark on a participatory research project and as a point of departure for class discussions and related readings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	L or HU or SB	Prerequisite(s): ENG 101, 102, 105, 107, or 108; FSH 125 OR Visiting University Student
FSH	206	Fashion Design I	Provides a foundation for the design process through drafting, flat pattern, construction and draping the professional way. In this hands-on setting, students apply principles of art to clothing design. Develops an understanding of the design concept based on the relationship of the two-dimensional pattern shape to the three-dimensional body.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 202 OR Visiting University Student
FSH	208	Fashion Technology I	Introduces the fundamental concepts, procedures and techniques used for manipulating images and documents in digital imaging software and data management software for fashion applications.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): INT 121, ART 194 (Digital Literacy for the Arts), or FSH 194 (Digital Literacy for the Arts) OR Visiting University Student
FSH	275	Merchandising Applications	Explores and practices the application of merchandising concepts in real-world settings. Exposes challenges facing the ever-changing fashion industry and specific challenges faced in fashion merchandising. Further develops students' creativity, critical thinking, and retail math skills to address merchandising challenges. As a foundation to applying merchandising concepts, students study business models that are vertically integrated including mono-brand, multi-brand, and fashion resell models. Further examines channels of client engagement and distribution (e.g., omni-channel, e-commerce, or private showroom). Interactive course engages students through vivid experiences, interaction with experienced professionals, and application of retail math concepts that bring merchandising to life.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 280 OR Visiting University Student
FSH	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Art	3		Credit is allowed for only FSH 280 or MKT 280
FSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		
FSH	300	Global Fashion Industry	Considers the textile and apparel industries in a global context. Examines issues from several viewpoints providing the facts and data needed to consider the ramifications of events with unbiased perspectives.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	G	Prerequisite(s): FSH 204 or 206 with C or better OR Visiting University Student
FSH	303	Fashion Illustration II	Studies fashion illustration as a means of communicating, documenting and promoting fashion. Focuses on refining the fashion figure, rendering fabrics and apparel, and exploring a variety of illustration media and techniques. Also explores the evolution of fashion illustration and illustrators. Emphasizes page design and layout for advertising and promotion. Builds upon previously learned skills and acquired concepts, expanding students' abilities to illustrate fashion figures and render garments and fabrics, and create two-dimensional collections. Enables students to clearly communicate design ideas, and effectively present their designs to critics in junior- and senior-level design courses.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 203; Credit is allowed for only FSH 303 or FSH 394 (Fashion Illustration II) OR Visiting University Student

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FSH	306	Fashion Design II	Reviews the principles of flat pattern making and the use of a library of block patterns and pattern manipulations. Develops advanced pattern-making skills. Introduces the torso, jacket and pant blocks. Students develop a strong understanding of flat pattern principles by applying these techniques to create designs for apparel. Students focus on conceptual design through sketching, then apply that two-dimensional idea into patterns to continue the design process through to a garment. Students work in full scale and half scale and learn techniques to move easily between the two.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 202 with C or better; FSH 206 with C or better; Credit is allowed for only FSH 306 or FSH 394 (Fashion Design II) OR Visiting University Student
FSH	308	Fashion Technology II	Covers the C.A.D. system, Optitex. Students learn how to pattern-make, develop, grade and manipulate patterns in a digital scape through Optitex. Once the patterns are completed, students take those patterns to fit and develop within the 3D prototyping capabilities inside the software. This is an exciting new era that is emerging within the fashion/apparel industry!	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 206; FSH 208; Credit is allowed for only FSH 308 or FSH 394 (Fashion Technology II) OR Visiting University Student
FSH	325	Personal Style and Wardrobe	Methods of clothing selection, coordination, and evaluation for personal style and wardrobe strategies.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	HU	Prerequisite(s): non-Fashion BA major; Credit is allowed for only FSH 325 or FSH 394 (Personal Style and Wardrobe) OR Visiting University Student
FSH	385	Fashion Visual Merchandising	Explores visual merchandising principles and techniques used to strengthen a fashion brand's image, engage an audience and optimize profitability. Examines the ideas and practices of business analysis, conceptualization and implementation of store merchandising and displays, and how visual presentations directly impact business.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FSH 385 or FSH 394 (Fashion Visual Merchandising) OR Visiting University Student
FSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
FSH	397	Fashion Capstone Development	Guides students in the development of a detailed capstone project proposal. Capstone projects are completed with faculty/staff guidance in subsequent fashion capstone course. Students arrive at a project to be completed in one or two semesters that represents the culmination of their education.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1		Prerequisite(s): minimum 60 hours
FSH	406	Fashion Design III	Fashion draping is a key essential part of fashion design and an art form that requires precision, concentration and imagination. Helps students develop their artistic and manual skills and learn many of the intermediate and upper-intermediate principles and methods of draping on the dress form, which is discussed and practiced via series of draping exercises and projects. Requires students during studio sessions to complete creative in-class exercises, including draping muslins/calico and transferring to paper patterns. Once their skills foundation has been developed, students put these techniques to practice by making a finished garment of their own design. All of this provides students with a proficiency in the draping process and understanding that all design processes rely heavily on the skills covered in this class.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 202; FSH 203; FSH 206; FSH 303; FSH 306; Credit is allowed for only FSH 406 or FSH 494 (Fashion Design III) OR Visiting University Student
FSH	412	Power Play	Students design and create an alter ego costume for a current or past patient at The Phoenix Children's Hospital. The process is filmed throughout to create a documentary; students are interviewed and filmed. Students participate in a required fashion show and reveal event, gaining intensive experience in the creation and design of adaptive clothing.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): minimum sophomore standing; Credit is allowed for only FSH 412 or FSH 494 (Power Play Fashion Show) OR Visiting University Student
FSH	435	Contemporary Fashion	Identifies and analyzes contemporary fashion designers and brands in relation to fashion research and inspiration for design and branding. Provides a comprehensive understanding to their approach to silhouettes, construction innovation, textiles, garment details and accessories.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Art	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student

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FSH	477	Fashion Collection Development	Focuses on the process of designing a fashion collection. Collection development is a "holistic," studio-based practice that requires integration of all the technical skills acquired by students: different types of research, ideation, conceptualization, fabric sourcing, fabric manipulation, surface design, sketching, technical drawing, illustration, design and execution. Provides a step-by-step approach to designing a fashion collection and guides students through different stages of the process. Gives special attention to organization and line planning to create a cohesive fashion collection for a catwalk show or digital exhibition space.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Art	3		Prerequisite(s): FSH 203; FSH 306; FSH 394 (Fashion Construction II); Credit is allowed for only FSH 477 or FSH 394 (Fashion Collection Development) OR Visiting University Student
FSH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-12		Prerequisite(s): minimum 45 hours
FSH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6		Prerequisite(s): Barrett Honors student
FSH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
FSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Art	1-4		Prerequisite(s): minimum 45 hours
FSH	497	Fashion Capstone	Formally structures the relationship between students conducting independent capstone projects and faculty/staff mentors. A variable credit practicum course, students implement, document and evaluate their capstone project. Acceptance into this course depends on the successful completion and acceptance of a project proposal and formal instructor approval in prerequisite course.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Art	3-9		Prerequisite(s): FSH 397 with C or better
FSH	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Art	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours
FSH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Art	1-3		Prerequisite(s): minimum 45 hours
GAP	10	Academic Skills I	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an international English-medium higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	11	Academic Skills II	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to continue to develop both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	12	Academic Skills III	Non-credit course designed for international ASU-USA Pathways students from any discipline who want to refine both their general English language competence and the academic skills which they need in order to succeed in their for-credit studies. The curriculum has been organized around tasks that students need to master in order to perform and interact appropriately in an American higher education setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	20	Academic Foundations I	Designed for international ASU-USA Pathways students, this non-credit course develops oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	21	Academic Foundations II	Designed for international ASU-USA Pathways students, this non-credit course continues developing oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		

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GAP	22	Academic Foundations III	Designed for international ASU-USA Pathways students, this non-credit course refines oral linguistic fluency and accuracy along with listening comprehension skills needed for academic success. In addition, this course creates cultural awareness in the American university setting.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	30	Communication Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice theories of communication skills in public, small group and interpersonal settings. Also supports, linguistically and culturally, students' study of speech communication processes such as problem solving, decision making and information sharing.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	31	Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to comprehend and apply math terminology in various math contexts through in-class problem-solving activities and presentations.	N	LEL	N	GNA	Office of the University Provost	Global Launch	1		
GAP	32	CIS Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of computers in business and society and use of word processing, spreadsheets, database, presentation and application software. In addition, the course supports the students' linguistic ability to discuss computers in terms of ethics and social issues as well as technology and business.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	33	Global Management Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, communication skills and cultural awareness needed to comprehend and apply basic concepts related to management in a global environment including global politics, legal systems and sociocultural environments.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	34	Info Tech Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	35	Info Tech Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to the role of information technology, programming and application software. In addition, the course supports the students' linguistic ability to discuss information technology in terms of ethics and social issues.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	36	Comp. Software Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	37	Comp. Software Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills needed to understand and apply concepts and terminology related to Java programming, particularly those that include multiple methods, control flow, array, basic sorting algorithms, static methods, variables and object-oriented programming approach.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	41	History Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend global history by exploring topics such as: changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare and women around the world.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		

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GAP	42	Sociology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills needed to understand and apply concepts and terminology related to the fundamentals of sociology. Also supports, linguistically and culturally, students' study of social organization, interaction and social change.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	43	Chemistry Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of chemistry, particularly for the needs of students in the physical, biological and earth sciences.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	44	Biology Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of biology including the method of scientific inquiry and behavior of matter and energy in biological systems.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	45	Physics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of physics, including kinematics, Newton's laws, the relationship of energy and momentum, as well as the dynamics of particles, solids and fluids.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	46	Applied Academic English I	Designed for international ASU-USA Pathways students, this course supports student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	47	Applied Academic English II	Designed for international ASU-USA Pathways students, this course continues supporting student development of language skills and cultural awareness needed to comprehend, practice and apply language skills needed for success in specific and current academic-credit courses.	N	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	80	Business Math Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and practice topics in math for business analysis.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		
GAP	81	Human Systems Engineer Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems, with particular attention to the intersection of psychology and engineering.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	82	Engineering Bridge I	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	83	Engineering Bridge II	Designed for international ASU-USA Pathways students, this non-credit course is a continuation of support for student development of language skills and cultural awareness needed to comprehend and apply basic principles and concepts of engineering as a profession, including discussing critical thinking in engineering design, modeling, team dynamics and engineering communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GAP	90	Macroeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	N	LEL	N	GNA	Office of the University Provost	Global Launch	3		

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GAP	91	Microeconomics Bridge	Designed for international ASU-USA Pathways students, this non-credit course supports student development of language skills, higher-level thinking skills and cultural awareness needed to comprehend and analyze the structure and functioning of the American economy as well as the basic economic institution and factors that determine national income and employment levels.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	20	Language Foundations	Entry-level course explores the grammatical, syntactic and cultural underpinnings of the English language for international students studying English as a foreign language.	N	LEC	N	GNA	Office of the University Provost	Global Launch	0		
GBL	22	Training	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	24	Field-Based Learning	-	N	LEC	N	GNA	Office of the University Provost	Global Launch	3		
GBL	25	English for Specific Purposes	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	26	Project Work	-	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	27	Current Issues and Topics	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	28	Academic Culture	Multidisciplinary approach to American academic culture. Designed for international students who will be matriculating into an American university and explores such themes as study skills, using academic resources and participating fully in academic life.	N	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	40	Basic 1 Listening/Speaking	On completing the Basic 1 Listening/Speaking course, a student will be able to (1) follow directions and comprehend main ideas and supporting details of short, simple passages and conversations spoken slowly; and (2) speak informally to express basic needs, habits and descriptions in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	41	Basic 1 Reading/Writing	On completing the Basic 1 Reading/Writing course, a student will be able to (1) recognize main ideas and find supporting details in selected reading passages of a few pages; and (2) produce a guided writing with a personal point of view, demonstrating level-appropriate control of grammar, word forms, and punctuation.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	42	Basic 1 Structure	This course covers helping verbs, pronouns, adjectives, count/non-count nouns, and tenses (present, present progressive and simple past).	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	43	Basic 1 Communication	International students studying English as a foreign language study the fundamentals of English communication.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	50	Basic 2 Listening/Speaking	On completing the Basic 2 Listening/Speaking course, a student will be able to follow instructions, directions, and comprehend the main ideas and supporting details of 1-3 minute announcements and conversations with controlled speech and delivery; and (2) speak informally in basic social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	51	Basic 2 Reading/Writing	On completing the Basic 2 Reading/Writing course, a student will be able to (1) recognize main ideas, find supporting details, and recognize the organizational pattern in short and page-length reading passages; and (2) produce a composition, based on a model, with a personal point of view, demonstrating level-appropriate control of grammar, word form, and punctuation.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	52	Basic 2 Structure	Learn grammar for everyday writing and speaking—present, progressive and future tenses, irregular verbs in the past tense, modal verbs, pronouns, order of adjectives, and comparisons.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	53	Basic 2 Communication	Learn to communicate effectively at the basic level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		

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GBL	60	Intermed 1 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 1-5 minute listening passages, conversations, instructions, and directions with controlled speech and delivery; and (2) speak informally in common social situations in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	61	Intermed 1 Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and find supporting details in selected reading passages of a few pages; and (2) produce an organized composition, with a personal or an objective point of view, demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	62	Intermediate 1 Structure	Improve grammar for everyday writing and conversation, present perfect and present perfect continuous and future tenses, noun clauses and grammar to cover frequency, duration, possibility and necessity.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	63	Inter 1 Comm	International students studying English as a foreign language continue to build on the fundamentals of English communication, including working on vocabulary expansion, pronunciation, idiom decoding, fluency and verbal accuracy.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	64	Inter 1 Business: Intro	International students studying English as a foreign language, learn the fundamental vocabulary, concepts and cultural customs of business in an American context.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	65	Int Social Sciences	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for American social sciences. Designed for students at an intermediate level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	66	Inter STEM	In this communicative, content-driven course, international students studying English as a foreign language learn how to speak, write and critically analyze the vocabulary, concepts and context for STEM studies. Designed for students at an intermediate level of English proficiency.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	70	Intermed 2 Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of 5-10 minute general topic listening passages with modified speech and delivery; and (2) speak formally and informally on a variety of general topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	71	Intermed 2 Reading/Writing	On completing this course, a student will be able to recognize the main ideas and supporting details and distinguish between fact and opinion in a reading passage of several pages; and (2) produce a composition, based on a writing task, with an objective point of view demonstrating level-appropriate control of mechanics and grammar.	Y	LEC	Y	GNA	University College	Global Launch	9		
GBL	72	Intermediate 2 Structure	Focus on an overview of all the tenses. This course also covers passive voice and sequence of tenses with adverbial clauses.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	73	Intermediate 2 Communication	Learn to communicate effectively at the intermediate level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	University College	Global Launch	3		
GBL	74	Interm 2: Business Management	International students studying English as a foreign language discover key concepts and ideas related to business management. Students have the opportunity to speak, read and write about, as well as listen to, accessible levels of business management materials, including work and motivation, company structure and recruitment.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	75	Inter American Culture Studies	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	76	Intermediate Bridge to ASU	-	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	80	Advanced 1 Listening/Speaking	On completing the Advanced 1 Listening/Speaking course, a student will be able to comprehend the main ideas and supporting details of brief academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		

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GBL	81	Advanced 1 Reading/Writing	On completing the Advanced 1 Reading/Writing course, a student will be able to (1) recognize the main ideas and supporting details and determine logical inferences in selected general reading passages of several pages; and (2) produce a composition, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	82	Advanced 1 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	85	Humanities and Design	In this communicative, content-driven course, international students studying English as a Foreign Language continue to build their learning of ways to speak, write and critically analyze the vocabulary, concepts and context for humanities and design studies. Designed for students at an advanced level of English proficiency.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	90	Adv 2 Core Listening/Speaking	On completing this course, a student will be able to (1) comprehend the main ideas and supporting details of complex but abbreviated academic lectures and instructions spoken naturally; and (2) speak formally and informally on academic topics in a comprehensible manner demonstrating level-appropriate fluency and control of pronunciation, grammar, and vocabulary.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	91	Adv 2 Core Reading/Writing	On completing this course, a student will be able to (1) recognize the main ideas and supporting details, and determine logical inferences in authentic and selected academic and general reading passages of several passages; and (2) produce a well-developed essay, based on an assigned writing task, with an objective point of view, demonstrating level-appropriate word choice and control of mechanics and grammar.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	9		
GBL	92	Advanced 2 Structure	This course covers complex sentence structure, participial phrases, reduced adjective clauses and appositives, infinitives and gerunds, hypothetical conditionals, and the subjunctive.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	93	Advanced Communication	Learn to communicate effectively at the advanced level in a variety of everyday situations and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	94	Business English Special Topic	Learn to communicate effectively in a variety of business situations and develop English skills necessary for success in today's business world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	95	Adv American Culture Studies	Learn about American culture and develop communication skills necessary for success in today's world.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	96	Academic English Studies	Learn the Academic English necessary for success at an American university or college.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GBL	98	Professl English Special Topic	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	Office of the University Provost	Global Launch	3		
GCU	102	Introduction Human Geography	Systematic study of human use of the Earth. Spatial organization of economic, social, political, and perceptual environments.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	113	US and AZ Social Studies	Introduces American (including Arizona) institutions integrating geography, government, history and economic perspectives.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & H	Credit is allowed for only GCU 113 or HST 113 OR Visiting University Student
GCU	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	Credit is allowed for only HST or GCU 114
GCU	121	World Geography	Description and analysis of areal variations in social, economic, and political phenomena in major world regions.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SB & G	

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GCU	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
GCU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
GCU	241	Global Economy in Transition	Production, distribution, and consumption of various types of commodities of the world and relationships to the activities of humans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	253	Intro Cultural/Historical Geog	Cultural patterns, including such phenomena as language, religion, and various aspects of material culture. Origins and diffusion and division of the world into cultural areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	322	Geography of U.S. and Canada	Spatial distribution of relevant physical, economic, and cultural phenomena in the United States and Canada.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	323	Geography of Latin America	Spatial distribution of relevant physical, economic, and cultural phenomena in South, Middle, and Caribbean America. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as numerous analytical essays and an in-depth research paper, in addition to regular tests and quizzes, are required.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	325	Geography of Europe	Broad and systematic overview of Europe, emphasizing physical, economic, and cultural phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	326	Geography of Asia	Spatial distribution of relevant physical, economic, and cultural phenomena in Asia, excluding the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	328	Geography Middle East/N Africa	Spatial distribution of relevant physical, economic, and cultural phenomena in the Middle East and North Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	332	Geography of Australia/Oceania	Spatial distribution of relevant physical, economic, and cultural phenomena in Australia, New Zealand, and Pacific Islands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	344	Geography Hispanic Americans	Examines the homelands, migrations, settlements, landscapes, roles, and selected cultural traditions of Hispanic Americans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	350	The Geography of World Crises	Contemporary world crises viewed from a perspective of geographic concepts and techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	351	Population Geography	Demographic patterns; spatial, temporal, and structural investigation of the relationship of demographic variables to cultural, economic, and environmental factors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GCU	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
GCU	357	Social Geography	Environmental perception of individuals and groups. Stresses the spatial aspect of social and physical environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	359	Cities of the World I	Historical evolution of urban patterns and structures in the Middle East, India, Southeast Asia, China, Japan, and Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G & H	

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GCU	361	Urban Geography	External spatial relations of cities, internal city structure, and spatial aspects of urban problems in various parts of the world, particularly in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 361 or PUP 360 OR Visiting University Student
GCU	362	Journey Stories	Explores journeys, storytelling and geographies—real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
GCU	364	Energy in the Global Arena	Production, transportation, and consumption of energy, emphasizing the electric power industry and its environmental problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	373	Intro to Geographic Info Scien	Introduces theoretical and computer-based aspects of Geographic Information Systems, involving data analysis and map generation.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	4	SG	Pre-requisite: PSY 230 or SBS 304
GCU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	414	Teaching Geography Standards	Introduces Arizona Geography Standards for K-12 educators, emphasizing exciting curricula and illustrated with best practices by master teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	421	Geography Arizona/SW U.S.	Geography of the Southwest with an emphasis on Arizona. Divided into physical geography, history, people, and economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & C	
GCU	424	Geography Mexico/Middle Amer	Central America and Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	425	Geography Mexican Amer Border	Geography of a binational and bicultural region. Examines settlement, boundary issues, ethnic subregions, population change, industrial development, and urban growth.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GCU	426	Geography Russia/Surroundings	Examines the geography of Russia and other post-Soviet states.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	432	Geography of China	Examines the physical, economic, cultural, social, demographic, agricultural, political, historical, and environmental aspects of the geography of China.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB & G	
GCU	433	Geography of Southeast Asia	Examines the biophysical and social features of Southeast Asian nations and peoples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GCU	441	Economic Geography	Spatial distribution of primary, secondary, and tertiary economic and production activities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	442	Geographical Analysis of Trans	Networks, modes, economics, and flows at the urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	
GCU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GCU	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
GCU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GCU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GCU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GCU	496	Geographic Research Methods	Scientific techniques used in geographic research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GPH 111 with C or better; GCU 102 with C or better; GIS 205 with C or better OR Visiting University Student

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GCU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GCU	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
GCU	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 514 or SOS 514
GCU	515	Human Migration	Economic, political, social, and geographic factors underlying population movements. Migration selectivity, streams and counter-streams, labor migration, and migration decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	526	Sustainability Science	Addresses core ideas in sustainability science--an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwm Hum &Env Sys) or GCU 591 (Sust Sci: Int Btwm Hum &Env Sys) or SOS 591 (Sust Sci: Int Btwm Hum &EnvSys)
GCU	528	Geographic Problem and Context	Investigates different forms of geographic problem solving and contemporary trends in geographic research. Emphasizes applied research and questions at the forefront of the field, and the range of techniques being applied by practitioners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	529	Contemp Geographic Thought	Comparative evaluation of current philosophy concerning the nature and trends of geography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	542	Geog Analysis Transportation	Examines the geographical aspects of transportation systems. Looks at the geography of networks; transport costs and rates; different modes of transport, trade, economic development, and technology. Studies the movement of freight and passengers at the individual, urban, national, and international scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	585	Geog Resrch Dsgn & Proposal Wtg	Prepares students to undertake creative geographic research culminating in the generation of new knowledge. Serves as a foundation for the student in achieving the objective of a productive and successful degree. To accomplish this, instruction stresses a research framework, ethical practice, and the generation of an original research proposal. Specific learning objectives are: to produce an area of specialization statement, literature review, problem statement, description of methods and final proposal; to develop the skills needed to conceive and plan a research project; to communicate ideas effectively in written and oral form; to develop and articulate informed opinions about research designs; to learn about academic publishing format and process; and to understand and engage in ethical research practices.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student
GCU	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GCU	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	596	Geographic Research Methods	Prepares students to conduct geographic research by teaching scientific techniques used to study problems in the field of geography. Provides a strong foundation in geographic research methodologies. Covers critical reading and analysis of peer-reviewed research, types of research methodologies, and elements of research design.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	671	Intro to Geographic Teaching	Intensive course in geographic education, scientific method in research on geographic education, research trends, resources for teaching, best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	672	Phys Geography for Teachers	Transfer of matter and energy exhibited in the Earth's climate, hydrology, soils, biogeography, and landforms; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	673	Human Geography for Teachers	Analyzes cultural, economic, urban, historical, transportation, population, political, and development geography; case studies; virtual field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	674	Geog Techniques for Teachers	Introduces geographic techniques, including GPS, GIS, remote sensing, cartography, qualitative, and field methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	675	World Geography for Teachers	Systematic overview of geographic knowledge about different world regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	676	North Amer Geog for Teachers	Systematic overview of geographic knowledge about different North American regions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	677	Geography Across Curriculum	Intensive course on intergrating reading, writing, and mathematics standards with geography content; selected case studies; best practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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GCU	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GCU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GDE	30	Basic Found English Lang Learn	Introduces a foundation of basic English language to international learners. Focuses on the structures of English, sentence parts and sentence formation, for basic conversations and basic writing skills related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	35	Basic Comm English Lang Learn	Builds on a foundation of basic English language for international learners. Further develops the structures of English needed in basic conversations and basic writing skills related to everyday English. Introduces learners to past forms.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	40	Basic Lang Skills Eng Lang Lrn	Refines and expands basic English language skills for international learners. Builds on reading, written and verbal skills to develop learners' language abilities in everyday English. Learners carry out conversations on a variety of personal topics.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	45	Basic Achieve English Lang Lrn	Further refines and consolidates basic English language skills for international learners. Emphasizes language skills in reading, writing, listening and speaking to expand learners' knowledge and language use in a wide variety of topics in home, family, friends, work, school, free time and more related to everyday English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		

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GDE	50	Intermed Found Eng Lang Learn	Introduces a foundation of intermediate English language to international learners. Builds on the basic structures of English to refine learners' language abilities for everyday and academic English language skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	55	Intermed Comm Engl Lang Learn	Builds on a foundation of intermediate English language for international learners. Emphasizes and refines communication skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	60	Intermed Lang Skill Engl Learn	Refines and expands intermediate English language skills for international learners. Emphasizes and refines reading, written and verbal skills to build learners' language abilities in academic English.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	65	Intermed Achieve Engl Lang Lrn	Further refines intermediate English language skills for international learners. Emphasizes and refines academic English language skills in reading, writing, listening and speaking.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	70	Acad Thinking Engl Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	75	Acad Analysis Engl Lang Learn	Develops advanced language skills and refines the critical thinking skills necessary in academic coursework. Learners build on prior learning to further develop their reading, writing, listening and speaking skills to successfully analyze and respond to academic topics and texts. Learners acquire advanced academic skills and vocabulary in order to be able to form opinions and arguments.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	80	Acad Persuasion Eng Lang Learn	For advanced learners of the English language. Learners apply critical thinking skills to complex texts and receive instruction in the characteristics of persuasion in academic writing and speaking, as well as instruction in advanced language skills commonly found in persuasive rhetoric. Upon successful completion of the course, learners understand the aspects of persuasion, and how best to organize summary and response compositions.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	86	Ugrd Acad Achieve Eng Lang Lrn	Designed for undergraduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic undergraduate program. Refines advanced academic skills introduced in prior language courses through collaboration, communication, compositions and response to course concepts.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	88	Grad Acad Achieve Eng Lang Lrn	Designed for graduate-bound international students. Consolidates the English language skills needed to be successful in a rigorous, academic graduate program. Learners draw from advanced, complex academic texts to review the literature and to compose evidenced-based writing and speaking assignments related to their fields of study. Expects learners to demonstrate an advanced command of the English language and advanced academic skills.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	10.5		
GDE	96	English UG Adm & Achieve	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GDE	98	Engl Graduate Adm & Achievemnt	Advanced English language learners refine, demonstrate and are assessed on academic English language skills. Successful completion of the course meets the ASU admissions requirement for proof of English proficiency for international students to graduate programs.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GER	101	Elementary German I	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students may not enroll in GER 101 if credit with C or better earned in GER 102, GER 110, GER 201, GER 202 or GER 210 OR Visiting University Student

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GER	102	Elementary German II	Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 101 with C or better OR German Placement score of 231-328; Credit is allowed for only GER 102 or GER 110 or GER 111 OR Visiting University Student
GER	110	Intensive German I	Students learn to read, listen, write and speak German. Develops ability to communicate in German using a variety of tools. Uses German to ask and answer questions; name and describe persons, things, places and events; deals with certain situations; narrates orally and in writing; writes letters and postcards; fills out forms; and comprehends some texts. Expands knowledge of the cultures of the German-speaking countries. Students contribute to the class discussions what they might already know.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Students may not enroll in GER 110 if credit with C or better earned in GER 101, GER 102, GER 201, GER 202 or GER 210
GER	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	201	Intermediate German I	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 102, 110, or 111 with C or better OR German Placement Test score of 329-443 OR Visiting University Student
GER	202	Intermediate German II	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): GER 201 with C or better OR German Placement Test score of 444-547; Credit is allowed for only GER 202 or GER 210 OR Visiting University Student
GER	210	Intensive German II	Helps develop reading, writing, listening and speaking skills and strategies with activities both inside and outside of class. Guides student further into learning about the cultures of the German-speaking countries.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): GER 102 or 111 with B or better OR GER 110 with C or better OR German Placement Test score of 408-469; Credit is allowed for only GER 201 or GER 202 or GER 210
GER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	310	Making Sense of German Grammar	Contextualized German grammar in written and spoken German.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	311	Express Yourself in German	Builds and refines conversational skills in German through a focus on important contemporary issues. Strengthens active vocabulary knowledge, trains listening and speaking skills, and develops strategies to understand and respond in everyday German situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	312	Explore German Culture	Discovers how advancing reading proficiency in German can grant access to an array of ideas from the realms of literature, film, science, politics, history and sustainability. Each semester, students contribute to building a unique syllabus based on individual class interests.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	313	Create in German	Invites all students on a journey through a variety of writing and speaking adventures in German. From academic to creative writing, and from theater to presentational speaking, offers opportunities to bring all language skills to life.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better OR German Placement Test score of 548 and above OR Visiting University Student
GER	315	Germanic Mythology	Religious and spiritual beliefs and practices of the ancient Germanic peoples as reflected in their culture, including the pantheon of their gods, as well as the reception of these beliefs through and including contemporary times.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 315 or 394 (Germanic Mythology)
GER	319	Work with German	Navigates the German business world in real-life situations. Apply for a job, be a trainee and develop a business project in German. Communicate effectively and with cultural awareness in a professional context. Organize and present clear, effective business communications and vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): GER 202 or 210 with C or better or German Placement Test score of 548 or higher OR Visiting University Student
GER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	416	German Civilization	From 1600 through 1945.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Pre-requisite: A 300-level German course

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
GER	420	Discover - Discuss - Design	Covers current research approaches to the German-speaking world such as environmental, migration and memory studies to help students articulate a unique question about the German-speaking world based on their individual interests. Over the course of the semester, students explore their focal area by designing a project that can take a variety of forms, from the classic research paper to digital exhibitions, audio-visual media, or artworks. Develops research skills, discovers interdisciplinary approaches, and discusses outcomes with peers and the community. The majority of course materials and language of instruction are in German.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; GER 312 with C or better OR Visiting University Student
GER	421	German Lit Survey, 800-1800	From the beginning to Classicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GER 310 with C or better
GER	422	German Lit Survey, 1800-Today	From Romanticism to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; GER 310 with C or better OR Visiting University Student
GER	431	German Humor	Popular and literary texts (collections of jokes, pranks and comedies) in the print and visual media provide a basis of comparison for students to reflect critically on the function of humor in German culture from the sixteenth century until the present. Exposes the different types and functions of German humor and understands both the historical and the contemporary theoretical debate on the study of (German) humor. Taught almost exclusively in German, with reading and writing assignments done in the target language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Two 300-level GER courses with C or better; Credit is allowed for only GER 431 or GER 494 (German Humor and Comedy)
GER	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
GER	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
GER	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
GER	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
GER	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455

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GER	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)
GER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
GER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
GER	550	German for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking, or writing as in a traditional language course.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only GER 494 (German for Reading Knowledge), GER 598 (German for Reading Knowledge), or GER 550
GER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	202	Drones to Satellites	Seeing the Earth from above has a profound effect on how we view our planet. Introduces Earth observation using platforms like drones, airplanes and satellites. Covers how images and data of our Earth are acquired from above and how they can be processed and interpreted to understand our world. Students gain practical skills for generating information from images to better understand how human beings use and alter Earth's surface.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Credit is allowed for only GIS 202 or GIS 294 (Drones to Satellites: Observing Earth from Above)

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GIS	205	Geographic Info Science I	Introduces spatial thinking, a cross-disciplinary foundation for geographic information science (the science of dealing with spatial/geographical data; their manipulation, interpretation and use in problem solving); geospatial technologies (the specific technologies underpinning geographic information science); and spatial analysis (the science of solving spatial problems).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	
GIS	211	Geographic Info Science II	History and basic aspects of GIS including map and data file structure, conversions, and synthesis with a computerized environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	220	Mathematical Principles in GIS	Covers the basic math principles needed to excel in GIS and spatial analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better
GIS	222	Programming Principles GIS I	Basic principles of programming for GIS in python covering data processing, analysis, and application development.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 170, 210, 270, 271, or 272 with C or better OR Visiting University Student
GIS	270	Stats for Geography & Planning	Descriptive and inferential statistical methods for analysis of data in geographical sciences and urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 117, 119, 142, 170, 210, 211, 251, 265, or 270 with C or better OR Visiting University Student
GIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	311	Geographic Info Science III	GIS as a basis for microcomputer spatial analysis and synthesis. Includes digitizing, database organization, spatial retrieval, and graphics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	CS	Prerequisite(s): GIS 211 with C or better OR Visiting University Student
GIS	322	Programming Principles GIS II	Fundamental data structures and algorithms for the integration, management, processing and analysis of geographically referenced data.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better OR Data Science BS major; CSE 110, CSE 205, or GIS 222 with C or better OR Visiting University Student
GIS	341	Cartography&Georepresentation	Study and creation of maps. Fundamental mapping principles (projection, scale, generalization, symbolization) and computer-based cartographic production.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 205 with C or better OR Visiting University Student
GIS	351	Air Photo Interpretation	Subset, remote sensing, includes photography, films, aerial geometry, image components, stereoscopy, photogrammetry, ground truthing; interpret physical, cultural, economic, intelligence information.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum 45 hours
GIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	412	Spatial Decision Support Sysms	Theoretical and technical requirements for implementing spatial decision support tools.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 222 with C or better; GIS 311 with C or better
GIS	431	Spatial Databases	Covers data modeling concepts, the relational data model for the storage and retrieval of spatial and nonspatial information. The data retrieval emphasizes the industry-standard query language SQL and Spatial Query Languages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 311; GIS 322
GIS	441	Geographics: Interact/Animated	Advanced cartography, stressing influence and application of the computer on geographic representation. Emphasizes creation of maps for the Internet.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 222 with C or better
GIS	451	Geodesign and Urban Planning	Geodesign is a design and planning method which tightly couples the creation of design proposal with impact simulations informed by geographic contexts, systems thinking and digital technology. Covers the fundamental theory, concepts and frameworks of geodesign. Students become familiar with the geodesign process by reviewing case studies including specific case study applications from University of New South Wales and Arizona State University.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or PUP 301 with C or better; Credit is allowed for GIS 451 or GIS 551 or PUP 451 or PUP 551 or GIS/PUP 494 (Geodesign and Urban Planning) or GIS/PUP 598 (Geodesign and Urban Planning) OR Visiting University Student
GIS	461	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student

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GIS	462	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving, and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 211 with C or better; GIS 461 with C or better; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
GIS	470	Adv Stats Geography & Planning	Statistical techniques applied to the analysis of distributions and relationships. Introduces models and theory in geography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	CS	Prerequisite(s): GIS 270 with C or better OR Visiting University Student
GIS	471	Spatial Stats Geog & Planning	Basics of spatial data analysis. Topics include point pattern analysis, spatial autocorrelation, spatial regression, and kriging.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): CDE 469, GIS 469, GIS 470, SOC 469, or GIS 494/CDE 498 (Multivariate Statistics for Social Sciences) with C or better OR Data Science BS major; DAT 301 or GIS 470 with C or better OR Visiting University Student
GIS	472	Spatial Regression Analysis	Students gain insight into the scope of spatial regression methods, apply them in an empirical setting, and properly interpret the results of spatial regression analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: GIS 471; Credit is allowed for only GIS 472 or GPH 598 (Spatial Regression)
GIS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GIS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GIS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
GIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GIS	501	GeoDesign in Practice	Covers the basic topics of GeoDesign in practice including data, analysis, geocoding, mapping and projected implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 601 and 602 (or PUP 576)
GIS	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
GIS	512	Spatial Decision Support	Designs and implements a spatial decision support system and analyzes and understands the theoretical underpinnings that form these systems.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 412 or GIS 512

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GIS	520	GIScience Issues and Debates	Examines the underlying theories, current issues and debates surrounding the development and foundation of GIScience as a discipline. Discusses the history of the development of the field, the fundamentals and applications of spatial concepts to problem solving, and explores the trajectories of the field with respect to emerging geospatial technologies.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	521	GIS Programming	In-depth look at programming within GIS. Focuses on programming and methodology, utilizing specific software, and basic scientific computing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	531	Spatial Databases	Advanced data modeling concepts, the relational data model for the storage and retrieval of spatial and non-spatial information. Data retrieval emphasizes the industry-standard query language SQL and spatial query languages. Covers research topics for graduate students.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only GIS 431 or GIS 531
GIS	551	Geodesign and Urban Planning	Geodesign is a design and planning method which tightly couples the creation of design proposal with impact simulations informed by geographic contexts, systems thinking and digital technology. Covers the fundamental theory, concepts and frameworks of geodesign. Students become familiar with the geodesign process by reviewing case studies including specific case study applications from University of New South Wales and Arizona State University.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for GIS 451 or GIS 551 or PUP 451 or PUP 551 or GIS/PUP 494 (Geodesign and Urban Planning) or GIS/PUP 598 (Geodesign and Urban Planning)
GIS	561	Spatial Optimization Fndmnts	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581
GIS	562	Location Analysis and Modeling	Provides an overview of mathematical models for location optimization in the context of GIScience. Applies linear and integer programming (a type of linear algebra), computer programming, and GIS to optimize systems of points, lines and polygons for emergency services, natural resource management, private and public facilities, and undesirable and desirable facilities. Objectives include: formulating, solving and interpreting location problems; understanding differences among a variety of location analysis and modeling problems and methods; and linking GIS and optimization software for preparing inputs and visualizing results.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 561; Credit is allowed for only GIS 462 or GIS 562 or GCU 598 (Location Models)
GIS	563	Local Statistical Modeling	Understands the processes that generate the data we observe in the real world. If these processes vary over space, we term this spatial non-stationarity and traditional global models are no longer applicable. A set of local spatial models has been developed to examine spatial non-stationarity and one of the most widely used of these is Geographically Weighted Regression (GWR) and its variants. Investigates GWR and the wider context of spatial non-stationarity. Topics include: setting the scene; introduction to GWR; discussion of context; further issues in GWR; software for GWR; workshop on GWR 4; model selection in GWR; inference in GWR; semi-parametric GWR and multiscale GWR (MGWR); software for multiscale GWR; inference for MGWR; multicollinearity and GWR; some myths about GWR; big models; an example of the 2016 U.S. presidential election. Examination is by project (60%) and two presentations (40%).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 563 or GIS 598 (Local Statistical Modeling)
GIS	571	Spatial Stats Geog & Planning	Instructs on a variety of descriptive and inferential spatial statistics. Covers the conceptual foundations of spatial statistics, computes spatial statistics using software, and applies spatial statistical testing to a variety of research problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed only for GIS 571 or GIS 591 (Spatial Statistics for Geography and Planning)
GIS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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GIS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	601	Intro to Geographic Info Sys	Introduces GIS theory and practice for professionals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	602	Intermediate GIS	Introduces visualization, spatial analysis and open source tools.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	603	Spatial Statistics/Modeling	Introduces spatial statistics and modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	604	Implm Corporate/Public Sectors	GIS use in the corporate and public sectors including proposal development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	605	GIS Project Plan & Impliment	Moving from project proposal to implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	606	GIS Project Presentation	Development of technical reports and presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): Geographic Information Systems MAS student
GIS	610	Programming GIS Environment	Programming fundamentals for desktop GIS and custom applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	630	GIS Technologies	Uses of GIS technology for data collection and management.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	640	GIS for Business	Uses of GIS in business practice including site suitability, demographic data and business analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	650	GIS for the Internet	Programming GIS for the Internet and mobile applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): Geographic Information Systems MAS student
GIS	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GIS	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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GIS	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIS	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	135	Graphic Communications	Processes involved in design, asset generation, transmission, production and evaluation of visual content.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	210	Creative Thinking and Dsgn Viz	Fundamental methods, concepts and techniques of creative thinking, ideation and problem solving, including communication and societal influences. Examines drawing and design visualization, from sketching to data graphics.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	211	Intro to Video Game Art	2D and 3D art assets for video games. Areas covered: classic pixel art, seamless texturing and tiling, sprite animation, 3D virtual studio, box modeling.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better OR Visiting University Student
GIT	215	Introduction to Web Authoring	Website planning and evaluation using industry-standard languages.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Credit is allowed for only GIT 215 or GIT 310 OR Visiting University Student
GIT	230	Digital Illustration in Publis	Raster and vector illustration in publishing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	250	Intro to Commercial Print	Provides an overview of current print technology, a basic understanding of the print process and current workflows.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Info Tech) BAS, Applied Science (Internet & Web Dev) BAS, Graphic Info Tech BS, Graphic Info Tech (Full-Stack Web Development) BS or Graphic Info Tech (User Experience) BS major OR Visiting University Student
GIT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	295	Intro to Technical Imaging	Explores imaging technologies utilized in industry. Covers basic imaging concepts, chip technologies, optics, motion analysis, high-speed video, thermal imaging, and science relating to light and latent imaging.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		
GIT	303	Digital Publishing	Web and print publication design and production using industry-standard composition software, proofing, and output devices.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Internet and Web Development) BAS or Applied Science (Graphic Information Technology) BAS major OR Visiting University Student

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GIT	310	Web Foundations	7.5-week course covers fundamental methods, concepts and techniques of semantic and validated Web development as well as aesthetic Web design. Includes Photoshop, HTML5 and CSS technologies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology or Internet and Web Development) BAS major; minimum junior standing; Credit is allowed for only GIT 215 or GIT 310 or GIT 337 (or GIT 237)
GIT	312	3-D Computer Graphics Modeling	3-D modeling applications: modeling for video games, mapping techniques, texturing, box modeling, geometric representation, strategies and assemblies.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3	CS	Prerequisite(s): GIT 211 OR Visiting University Student
GIT	314	MM Dsgn, Plan and Stybd	The creative process of generating ideas, conceptualizing projects, planning, designing, story boarding, and presenting interactive multimedia products.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better; minimum junior standing OR Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student
GIT	315	Digital Video Techniques	Covers video production, including planning, pre-production, production, post-production and online video technologies and how video is an integral part of the graphic information industry. Concentrates on commercial and client-driven video production.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Science (Graphic Information Technology) BAS major or Applied Science (Internet and Web Development) BAS major or GIT 230 with C or better OR Visiting University Student
GIT	333	Printing Technology	Theory and application of sheet and web press technology for offset-lithography, flexography, screen process, and digital printing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 250 OR Visiting University Student
GIT	334	Image Editing and Manipulation	Theory and application of advanced image editing and raster techniques for reproduction and dissemination.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student
GIT	335	Computer Systems Technology	Computer technology: hardware, software, storage, networking, Internet, telecommunications, and information systems. Requires independent research. Not for credit for BS Graphic Information Technology major.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Not for credit for the Graphic Information Technology BS degree OR Visiting University Student
GIT	337	Web Content Design	User-centered design principles for visual content on the World Wide Web with emphasis on content strategy, user experience, coding and interactivity.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 215; GIT 230 with C or better OR Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major; Credit is allowed for only GIT 310 or GIT 337 OR Visiting University Student
GIT	340	InfoDesign/Usability	Design and technology solutions for increasing Website usability and methods of organizing information to improve the user experience.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing OR Visiting University Student
GIT	384	Commercial Photography	Digital image capture, and output in a commercial studio emphasizing publishing workflow.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 230 with C or better or Applied Science (Graphic Information Technology) BAS or Applied Science (Internet and Web Development) BAS major OR Visiting University Student
GIT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	402	New Media Internet Tech	Project-based exploration of new media Internet technologies from a graphic technology prospective. Emphasizes how, why, and when new media can be used to enhance a Web site and the user's experience.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GIT 402 or GIT 502
GIT	411	Computer Animation	3-D computer animation methods: rigging for video games, principles of animation, loops, skinning, blending , advanced modeling and motion.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 312 OR Visiting University Student
GIT	413	Prof Port Dsgn and Pres	Digital media portfolio design and production to include planning, audience analysis, content selection, authoring tools and formats, production, copyright considerations, marketing and delivery. This should be taken in the last semester of the program.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Applied Sci (Graphic Info Tech) BAS, Graphic Info Tech BS, Graphic Info Tech (User Exp) BS major; GIT 303; senior standing OR Applied Sci (Internet & Web Develop) BAS major; Pre- or corequisite(s): GIT 480 OR Visiting University Student

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GIT	414	Web Site Design/Internet/Web	Design, authoring, standards, protocols, tools and techniques for development for different Web-based technologies.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	415	AdvDigVideoTechniques	Advanced video creation and editing techniques including motion graphics, green screen technology, audio sweetening, crew and commercial production. Course culminates with a completed video production that is commercial and professional in nature.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 315
GIT	417	Adv Web Markup and Scripting	Industry-standard programming languages and techniques to add user interactivity to graphic information Web sites and Web applications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 310 or 337 OR Visiting University Student
GIT	418	Multimedia Author/Script/Prod	Extended application of industry-standard scripting languages and techniques to add user interactivity to graphic information websites and web applications.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 417 OR Visiting University Student
GIT	432	Graphic Industry Business Prac	Business practices related to the graphics industry; business models, cost and rate analysis, marketing and management approaches.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum senior standing; Credit is allowed for only GIT 432 or GIT 532 or GIT 598 (Graphic Industry Business Practices) OR Visiting University Student
GIT	435	Website and E-Commerce Strat	E-Commerce site management, marketing analytics and e-commerce business models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 414; Credit is allowed for only GIT 435 or GIT 598 (Website & E-Commerce Strategy) OR Visiting University Student
GIT	437	Color Reproduction Systems	Scientific analysis for the engineering of color reproduction systems and color models used in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 334; Credit is allowed for only GIT 437 or GIT 573
GIT	450	Digital Workflow/Graphic Indus	Digital production system analysis for content creation, automation output of graphic information to print and Web, including networking and job tracking.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 215; GIT 303 OR Applied Science (Internet & Web Development) BAS major; Credit is allowed for only GIT 450 or GIT 598 (Digital Workflow in Graphic Industries) OR Visiting University Student
GIT	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): minimum senior standing
GIT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		
GIT	490	Adv Commercial Photography	Studio-based class focusing on set design, advanced photographic techniques, raw workflow, marketing, business, and digital rights management.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): GIT 384
GIT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6		Prerequisite(s): Barrett Honors student
GIT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GIT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		
GIT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-3		
GIT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	502	New Media Int Tech	Project-based exploration of new media Internet technologies from a graphic information technology prospective. Emphasizes how, why and when new media can be used to enhance a Web site and the user's experience while maintaining branding cohesively across all technologies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 402 or GIT 502
GIT	515	WebDesignTech	Standards, tools and techniques for creating websites, with emphasis on designing for multiple devices and systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	519	AdvScriptWeb	Uses industry-standard markup and scripting languages to develop interactive websites and applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GIT	532	Graphic Indus Business Prac	Business practices related to the graphics industry; business models, cost analysis, marketing and management approaches.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 432 or GIT 532 or GIT 598 (Graphic Industry Business Practices)
GIT	537	Cross Media Production	Directed group study of selected current issues relating to cross-media production for the graphic information industries. Requires graduate group leadership.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS student or Technology (Graphic Information Technology) MSTech student
GIT	538	Personnel Dev/Graphic Industry	Employee training and development specific to production and management in the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): graduate student in Technology (Graphic Info Tech)
GIT	540	Cross-Media Design Solutions	Universal design theory, creative problem solving, and case study applications for print, Web, and new media products of the graphics industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student
GIT	542	Usability/User Experience	Design and technology solutions focusing on how information is organized graphically to communicate and how website usability is employed to improve human interaction with inline information.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): Graphic Information Technology MS or Technology (Graphic Information Technology) MSTech or User Experience MS student
GIT	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
GIT	573	Color Metrology	In-depth study and analysis of systems used to manage color reproduction in the graphic arts industry and information technology.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Graphic Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIT 437 or GIT 573
GIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GIT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Graphic Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	501	Global Thinking in Education	An online course introducing students to the analyses of worldwide factors that affect a range of issues in education including access, quality and sustainability across countries and education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	502	Inquiry in Global Education	Students learn to locate; interpret and critically analyze global education research literature (including comparative, qualitative, and quantitative approaches); develop problem statements and conduct a literature review.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	503	Eval Glob Edu Policies, Progs	Examines principles, methods and practices of evaluating education programs and policies in international settings. Focuses on types of evaluation, evaluation design, data collection and monitoring, and utilization of findings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GLE	504	Issues in Global Edu Lit	Reviews, identifies and synthesizes the empirical research literature. Students write a conceptual literature review in an area of interest of global significance. review, identify and synthesize the empirical research literature and will write a conceptual literature review in an area of interest of global significance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLE	505	Evidence in Global Edu Inquiry	Covers the basic research methods associated with global education inquiry.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Global Education MEd student; GLE 501; GLE 502; GLE 503
GLE	506	Applied Inquiry in Global Edu	Guides students in the development of a proposal for an applied inquiry study to explore and analyze an education problem in the student's interest in an area of global import. Such issues may include but are not limited to education access, quality and sustainability.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Global Education MEd student; GLE 501; GLE 502; GLE 503
GLE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): Global Education MEd student; GLE 501; GLE 502; GLE 503
GLE	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	101	Intro to Geology I (Physical)	Basic principles of geology, geochemistry, and geophysics. Rocks, minerals, weathering, earthquakes, mountain building, volcanoes, water, and glaciers. Students must complete both GLG 101 and GLG 103 to receive an SQ (general studies).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	
GLG	102	Intro Geology II (Historical)	Basic principles of applied geology and the use of these principles in the interpretation of geologic history. Both GLG 102 and 104 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SG & H	
GLG	103	Introduction to Geology I-Lab	3 hours lab, some field trips. Both GLG 101 and 103 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Credit is allowed for only ENV 103 or GLG 103 OR Visiting University Student
GLG	104	Introduction to Geology II-Lab	Lab techniques involving map interpretation, cross sections, and fossils. Both GLG 102 and 104 must be taken to secure SG general Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SG	Corequisite(s): GLG 102 OR Visiting University Student
GLG	108	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice; rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
GLG	110	Dangerous World	Geological studies as they apply to interactions between humans and Earth. Includes geological processes and hazards, resources, and global change. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ & G	
GLG	111	Dangerous World Laboratory	Basic geological processes and concepts. Emphasizes geology-related environmental problems concerning Arizona. Both GLG 110 and 111 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	
GLG	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	301	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student

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GLG	304	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102, GLG 110, GPH 111, SES 121, or minimum junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373
GLG	305	Dynamic Earth	Focuses on the 4.6-billion year physical and geochemical evolution of Earth, with emphasis on planetary interior and surface processes through time that have resulted in current concentrations of fundamental chemical elements necessary to sustain modern civilization. Specific topics include: (1) elemental abundances and differentiation of the early solar system and Earth; (2) formation of Earth's compositional and rheologic layers; (3) interactions among planetary spheres with focus on biogeochemical cycles; (4) multi-scale tectonics (plate tectonics, continental deformation, igneous and earthquake processes, and mountain building). Provides an essential scientific context for understanding Earth system processes fundamental to environmental science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100 or CHM 101 or higher or PHY 101 or higher with C or better, or both SES 220 and SES 225 with C or better; GLG 101 or SES 121 with C or better; MAT 170, 210, or 251 with C or better
GLG	310	Structural Geology	Geologic structures and the mechanical processes involved in their formation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 170, 171, 210, 251, 265, or 270 with C or better OR Visiting University Student
GLG	321	Mineralogy	Crystal chemistry, crystallography, mineral identification, origin and occurrence of minerals, systematic mineralogy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): CHM 113 (or both CHM 111 and 117 or 114) with C or better; MAT 170, 210, 265 or 270 with C or better
GLG	325	Oceanography	Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 100, 182, 282 or GLG 101 or SES 121 with C or better, or both SES 220 and SES 225 with C or better; CHM 101, 113, 114 or 117 with C or better; Credit allowed for only BIO 325 or CHM 385 or GLG 325 OR Visiting University Student
GLG	327	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone—in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Preq(s) w/ C or bter: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Creditfor only GLG 327 or SOS 374 OR Visiting University Student
GLG	340	Geohazards of Mediterranean	Covers geological studies as they apply to interactions between humans and Earth, focusing on geological hazards. Hazards present risks to life, property, global commerce and infrastructure. Such hazards are now more likely than ever to cause large death tolls and impact the global economy, due to increasing population density and the emergence of a global marketplace. Italy is a country that is exposed to a wide range of geologic hazards, such as volcanic eruptions, earthquakes and landslides. Because of its natural geologic setting and long history of scientific leadership, Italy has one of the world's most well-established scientific communities to study and mitigate geologic hazards. These issues are addressed and discussed from both a scientific and human perspective, with primary focus placed on Italian case studies and the role of Italian institutions in hazard science.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 340 or GLG 394 (Geologic Hazards of the Mediterranean)
GLG	362	Geomorphology	Land forms and processes that create and modify them. Lab and field study of physiographic features.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; MAT 266 or 271 with C or better OR Visiting University Student

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GLG	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	404	Fundamentals Planetary Geology	Surveys planetary topics, including impacts, tectonics, and volcanism on planetary objects, and use of spacecraft data, including geological mapping.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101, GLG 102, SES 121, or SES 122 with C or better OR Visiting University Student
GLG	406	Geology of Mars	Geological evolution of Mars through analyses of spacecraft data, theoretical modeling, and study of terrestrial analogs; emphasizes current work. Possible field trips to examine Arizona geology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	410	Computers in Geology	Geological computer skills including data processing, visualization, presentation, numerical analysis, software and hardware applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): GLG 101 or SES 121 with C or better
GLG	418	Geophysics	Solid earth geophysics; geomagnetism, gravity, seismology, heat flow. Emphasizes crust and upper mantle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 272 or 267 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 272 or 267 with C or better; PHY 151 with C or better OR Visiting University Student
GLG	419	Geodynamics	Emphasizes application of continuum principles to geological problems, including lithospheric stresses, heat transfer, fluid mechanics, and rock rheology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite(s): MAT 267 or MAT 272 with C or better; PHY 131 and 132 (or PHY 151) with C or better
GLG	420	Volcanology	Distribution of past and present volcanism, types of volcanic activity, mechanism of eruption, form and structure of volcanoes, and geochemistry of volcanic activity.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisite: Engineering, Math or Science major; Minimum Junior standing
GLG	422	Planetary Volcanology	Studies the effects of planetary environments and magma compositions on styles of volcanism and the nature of volcanic products on the terrestrial planets and outer planet satellites. Overview of volcanism on specific planetary objects, analysis of spacecraft image data, basic mathematical volcanic modeling, and reviews of key papers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 420 with C or better
GLG	424	Petrology	Origin of igneous and metamorphic rocks. Optical mineralogy, hand specimen identification, and thin-section analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 321 with C or better OR Visiting University Student
GLG	430	Paleontology	Introduces concepts and analytical techniques in biogeology, paleobiology, paleoecology, and paleoenvironmental reconstruction from the fossil record.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 12 with C or better; GLG 104 or SES 124 OR Visiting University Student
GLG	435	Sedimentology and Stratigraphy	Examines the fundamental principles and tools utilized in the study of sedimentology and stratigraphy. Focuses on the origin, transportation and deposition of sediment, and the processes that lead to the formation of sedimentary textures, structures and stratal packages. Emphasizes description, analysis and interpretation of lateral and vertical changes in sedimentary strata, both in the field and in laboratory exercises, as it pertains to spatial and temporal variability in depositional mechanisms and environments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 102 or SES 122 with C or better; Pre- or corequisite(s): GLG 321 with C or better if completed OR Visiting University Student
GLG	441	Ore Deposits	Origin, occurrence, structure, and mineralogy of ore deposits.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): GLG 101 or SES 121 with C or better; GLG 310 or 321 with C or better OR Visiting University Student
GLG	451	Field Geology I	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GLG 310 with C or better; Pre- or corequisite: GLG 321 OR Visiting University Student
GLG	452	Field Geology II	Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; GLG 310 with C or better; GLG 321 with C or better; GLG 451 with C or better OR Visiting University Student
GLG	455	Advanced Field Geology	Geologic mapping in igneous, sedimentary, and metamorphic terrains of the Basin and Range province of Arizona.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3-4		Prerequisite(s): GLG 310 with C or better; Pre- or corequisite(s): GLG 451 with C or better if completed OR Visiting University Student
GLG	460	Astrobiology	Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 112, BIO 182, BIO 282, GLG 102, or SES 122 with C or better; one 300-level course in AST, BIO, CHM, GLG, MIC, PHY, or SES with C or better OR Visiting University Student
GLG	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and minerals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Credit is allowed for only GLG 461 or MIC 461

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GLG	464	Solving Environmental Problems	Capstone course intended primarily for seniors in the Earth and Environmental Studies degree program. Hybrid self-study design project workshop guided by faculty, in which student teams research and develop plans for a viable solution to a real environmental problem in the American Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Earth and Environmental Studies BA major; GLG 305 with C or better; GLG 327 with C or better; senior standing
GLG	470	Hydrogeology	Geology of groundwater occurrence, aquifer and well hydraulics, water chemistry and quality, contaminant transport, remediation. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	471	Hydrology	Descriptive and quantitative hydrology; hydrologic cycle, models, and systems. Rain-runoff models. Hydrologic design. Concepts, properties, and basic equations of groundwater flow. Emphasizes quantitative methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CEE 341 or MEE 340 or GLG 362 with C or better; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) OR Visiting University Student
GLG	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)
GLG	481	Geochemistry	Origin and distribution of the chemical elements. Geochemical cycles operating in the Earth's atmosphere, hydrosphere, and lithosphere.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 OR Visiting University Student
GLG	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
GLG	485	Meteorites and Cosmochemistry	Chemistry of meteorites and their relationship to the origin of the Earth, solar system, and universe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only GLG 485 or CHM 485
GLG	489	Field Geochemistry	Explores basic field measurements and sampling techniques for environmental systems, with a focus on carbon cycling in the Colorado River. Surveys a variety of geochemical principles, including: equilibrium aqueous speciation, acid-base chemistry, solution-mineral equilibrium systems, oxidation-reduction reactions, organic and environmental geochemistry and biogeochemical cycles. Applies chemical principles and analytical techniques to answer questions about environmental systems and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	L	Prerequisite(s): CHM 302, GLG 321, or GLG 481 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only CHM 489 or GLG 489 OR Visiting University Student
GLG	490	Topics in Geology	Special topics in a range of fields in geology.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
GLG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GLG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
GLG	495	Undergraduate Thesis	Guided research culminating in the completion and presentation of an undergraduate thesis based on supervised research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		
GLG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
GLG	546	Advanced Watershed Hydrology	Watershed processes leading to runoff generation and the transformation of meteorological forcing through a hydrologic system. Emphasizes physical mechanisms and their treatment in numerical models. Quantification of uncertainty in hydrological modeling through probabilistic methods. Provides hands-on experience with data analysis and hydrologic models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 546 or GLG 598 (Advanced Watershed Hydrology) or CEE 546

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GLG	549	Ecohydrology Semiarid Landsc.	Interactions between terrestrial plants and limiting resources in arid and semiarid environments. Temporal and spatial aspects of plant-water relations. Process-oriented discussion and examples using simple and complex numerical models. Provides experience with data analysis and instrumentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 549 or CEE 598 (Ecohydrology of Semiarid Landscapes) or GLG 549 or GLG 598 (Ecohydrology of Semiarid Landscapes)
GLG	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)
GLG	581	Isotope Geochemistry	Geochemistry and cosmochemistry of stable and radioactive isotopes; geochronology; isotope equilibria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GLG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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GPE	10	Verbal Skills Scholars	Helps international graduate students (prospective ITAs) as well as other graduate students or visiting scholars at ASU improve their spoken English (pronunciation and fluency). Helps familiarize students with American classroom culture and helps them become effective classroom teachers. Each student receives an individual pronunciation assessment to help him or her focus on areas needing improvement. There is direct instruction and practice of pronunciation (e.g., sound, stress, rhythm, intonation). By participating in and leading class discussions, by working in small groups or pairs and by preparing for videotaped presentations, students improve English fluency.	N	LEC	Y	YGB	Office of the University Provost	Global Launch	3		
GPE	11	IS Teacher Training	Familiarizes international graduate students (prospective ITAs) at ASU with American classroom culture and helps them become effective classroom teachers. Exposes various methods of teaching commonly used in the American university classroom.	N	LEL	N	YGB	Office of the University Provost	Global Launch	3		
GPE	30	Spec Prog Language Foundations	Designed for noncredit, special program international students. Helps students develop the skills needed to write, read and communicate effectively in the English language in professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	31	Special Prog Ext Project Work	Designed for special program international students. Helps students effectively apply the four language skills--reading, writing, speaking and listening--in real-world, professional settings.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	32	SP: Field-Specific Engl Skills	Designed for special program international students. Takes field-specific English language and develops the reading, writing and communication skills in order to successfully navigate professionally within a global context.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	6		
GPE	88	Engl Uni Success:Wrt Rdg Rsrch	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands literacy and critical thinking skills needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	89	Engl Uni Success:Acad Thinking	Designed for international students who have attained an advanced level of English through Global Launch's intensive English program. Further refines and expands critical thinking skills and verbal and written expression needed to thrive in an American institution of higher learning.	Y	LEL	Y	GNA	Office of the University Provost	Global Launch	9		
GPE	90	Business Presentation Skills	Develops ability to verbally persuade, inform and motivate an audience. Covers integral key competencies such as: identifying audience, researching and organizing information, preparing and delivering effective visuals, and communicating concisely in English. Coupled with activities which include impromptu business-themed presentations, evaluations by the professor and feedback from peers.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	91	Academic & Business Writing	Develops the skills needed to write clearly and effectively, in both academic and business settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with impactful content.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	92	Critical Thinking Case Studies	Teaches international students reading and critical thinking strategies required for a master's-level program. Teaches how to read and understand dense textbooks, articles and magazines in a timely fashion and identify the important information.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	93	Business & Cross-Cultural Comm	Improves international students' ability to compare and contrast aspects of American business culture with other cultures in order to understand similarities and differences.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	94	Bus Listening & Conversation	Improves the student's ability to effectively communicate orally at a master's level. Covers speaking and listening strategies and skills necessary to participate in discussions related to business topics. Students learn to control the input they receive and produce coherent and appropriate responses.	Y	LEC	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	95	Academic and Technical Writing	This non-credit course helps graduate-bound international students develop the English skills needed to write clearly and effectively, in both academic and technical settings, through the exploration of efficient techniques and writing processes for targeting specific audiences with relevant and thoughtful content.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		

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GPE	96	Graduate Presentation & Comm	Designed for graduate-bound international students, this non-credit course helps students develop the skills needed to communicate in English effectively in a variety of graduate academic situations.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPE	97	Graduate Reading Skills	Utilizing topics from students' chosen field of study, this non-credit course is designed to give graduate-bound international students a thorough grounding in strategies and techniques for efficient and effective reading in English of complex, dense texts expected of graduate degrees. Graduate students build foundations for critically analyzing texts and applying them to relevant contexts, while amassing a graduate-level English lexis.	N	LEL	Y	YGB	Office of the University Provost	Global Launch	6		
GPH	111	Intro to Physical Geography	Spatial and functional relationships among climates, landforms, soils, water, and plants. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	112	Intro to Phys Geography Lab	Includes some local or virtual field trips. Both GPH 111 and GPH 112 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	Pre- or corequisite(s): GPH 111 OR Visiting University Student
GPH	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Prerequisite(s): Freshman standing; maximum 25 hours OR Visiting University Student
GPH	210	Society and Environment	Examines the interaction among social processes, key environmental issues, and nature's role as a resource at global and regional scales.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Credit is allowed for only GPH 210 or SOS 210
GPH	211	Landform Processes	Laboratory science class on earth-surface processes, with exercises emphasizing how erosion, transportation, and deposition modifies landforms.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4	SQ	
GPH	212	Introduction to Meteorology	Fundamentals of weather and climate, including basic atmospheric processes and elements. Students whose curricula require a lab course must also register for GPH 214. Both GPH 212 and 214 must be taken to secure SQ General Studies credit	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SQ	
GPH	213	Climate and Weather	Fundamentals of meteorological/climatological analysis, including terminology and symbology. Recommended for meteorology/climatology program students. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SG	
GPH	214	Intro to Meteorology Lab	Introduces basic meteorological/climatological data and measurements. Suggested concurrent enrollment in GPH 212. Both GPH 212 and 214 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SQ	
GPH	215	Climate and Weather Laboratory	Fundamentals of meteorological/climatological map analysis and interpretation. Recommended for meteorology/climatology program students. May be taken concurrently with GPH 213. Both GPH 213 and GPH 215 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1	SG	
GPH	267	Extreme Weather	Introductory survey of extreme weather and climate processes and the often disastrous consequences at the intersection of human operations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GPH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	314	Global Change	Response of Earth's natural systems (atmosphere, hydrosphere, lithosphere, biosphere) to past environmental change, and effects of potential future changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
GPH	381	Geography of Natural Resources	Nature and distribution of natural resources and the problems and principles associated with their use.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	
GPH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	405	Energy and Environment	Sources, regulatory and technical controls, distribution, and consequences of the supply and human use of energy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): minimum junior standing; Credit is allowed for only GPH 405 or GPH 505
GPH	409	Synoptic Meteorology I	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): PHY 121 or 150
GPH	410	Synoptic Meteorology II	Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): GPH 409 with C or better

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GPH	412	Physical Meteorology	Physical processes in the earth-atmosphere system on regional and global scales; concepts and analysis of energy, momentum, and mass balances.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 111; MAT 270; PHY 121/122 with C or better; Credit is allowed for only GPH 412 or GPH 591 (Physical Meteorology)
GPH	413	Meteorologic Instrmnt/Measure	Design and operation of ground-base and aerological weather measurement systems. Collection, reduction, storage, retrieval, and analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 213 with C or better or Visiting University Student
GPH	414	Climate Change	Surveys three climate research areas: paleoclimatology, theories (e.g., greenhouse warming), numerical modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Prerequisite(s): GPH 111 or 213 or 314 with C or better
GPH	418	Landforms of the Western US	Studies landforms and geomorphic processes in the western United States, including lecture, topographical maps, aerial photographs, satellite imagery, and field trips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
GPH	422	Plant Geography	Plant communities of the world and their interpretation, emphasizing North American plant associations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): BIO 181 or GPH 111 or PLB 200 with C or better; Credit is allowed for only BIO 430 or GPH 422 or PLB 422
GPH	433	Alpine and Arctic Environments	Regional study of advantages and limitations of the natural environment upon present and future problems involving resource distribution, human activities, and regional and interregional adjustments.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	G	Credit is allowed for only GPH 433 or 598 (Alpine & Arctic Environments)
GPH	474	Dynamic Meteorology I	Large-scale atmospheric motion, kinematics, Newton's laws, wind equation, baroclinics, vorticity, and the midlatitude depression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
GPH	475	Dynamic Meteorology II	Topics in climate dynamics. General circulation, numerical modeling, teleconnection phenomena, and surface-atmosphere interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GPH 474 with C or better
GPH	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
GPH	491	Geographic Field Methods	Field techniques, including use of aerial photos, large-scale maps, and fractional code system of mapping; urban and rural field analysis to be done off campus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		
GPH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
GPH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
GPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
GPH	511	Fluvial Processes	Geographical aspects of processes of river erosion, transportation, sedimentation; emphasizing spatial characteristics of forces, resistance, landforms, sediment; includes computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	513	Meteorologic Instrmnt/Measur	Design and operation of ground-based and aerological weather measurement systems. Collection, reduction, storage, retrieval and analysis of data. Final project requires designing a field research measurement program for a hypothetical research question.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 413 or GPH 513 or GPH 598 (Meteorological Instrmntn M)
GPH	563	Urban Climates	Explores the urban climate system and its relationship with the built infrastructure of cities, including the causes, consequences and mitigation options for urban heat islands. Topics include the urban energy balance; materials in the urban environment; waste heat from energy consumption in cities; scales of urban-influenced climate modification; and implications for human comfort/health, air quality and energy consumption. Intended for graduate students in geographical sciences, urban planning, design, engineering, and related disciplines interested in learning about the urban climate system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GPH 563 or GPH 598 (Urban Climates) or GPH 598 (Urban Heat Island)

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GPH	569	Digital Analysis Remote Data	Focuses on the digital image processing of remotely sensed data for earth resource analysis and applications. Provides the skills and knowledge to apply digital remote sensing techniques for biophysical and environmental planning and problems. Through laboratory work, students have opportunities to practice concepts and techniques learned in the lecture part. Requires a reasonable background in college algebra and basic statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only GPH 394 (Digital Analysis of Remotely Sensed Data), 569 or 598 (Digital Analysis of Remotely Sensed Data)
GPH	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	596	Advanced Spatial Statistics	Multivariate and advanced statistical techniques including Box-Jenkins modeling and spectral analysis. Requires project papers and presentations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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GPH	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GPH	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	101	Designing Life	Helps students develop strategies to successfully navigate their education experience. Focuses on critical and reflective thinking.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	111	Graphic Design History I	Surveys development of visual communication from its origins to the 20th century. Investigates significant technological, industrial, and social influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
GRA	112	Graphic Design History II	Surveys contemporary and 20th-century graphic design. Investigates relationships among graphic design and related disciplines, technological, industrial, and social influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 111 with C or better
GRA	121	Principles Graphic Design I	Graphic design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Graphic Design major; Corequisite(s): GRA 111 OR Visiting University Student
GRA	122	Principles Graphic Design II	Continued exploration of graphic design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 121 with C or better; Environmental Design or Graphic Design major. Corequisite(s): GRA 112
GRA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	220	Design Drawing I	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for graphic design thinking.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	221	Letterform	Drawing of letterforms with focus on proportion and structure. Introduces letterform nomenclature and classifications. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	222	Visual Communication I	Theoretical and applied studies in shape, drawing, and color. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design major; GRA 122 with C or better; passed Graphic Design milestone OR Visiting University Student
GRA	223	Typography	Theoretical exercises in spatial and textural qualities of type. Problems in tension, activation, and balance. Exercises in simple typographical applications. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 220 with C or better; GRA 221 with C or better OR Visiting University Student
GRA	224	Visual Communication II	Transition from theoretical to applied problems. Emphasizes refinement of visual skills. 6 hours a week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD or Pre-Graphic Design major; GRA 220 with C or better; GRA 222 with C or better OR Visiting University Student
GRA	225	Comm/Interaction Design Theory	Theory related to the design of communication artifacts and interaction within various media environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	321	Technology for Design I	Explores the process of technology in design. Projects interface with GRA 361.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design student; Corequisite(s): GRA 361 OR Visiting University Student
GRA	322	Technology for Design II	Emphasizes advanced technology in design problems. Projects interface with GRA 362.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 321 with C or better; Corequisite(s): GRA 362

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GRA	345	Design Rhetoric	Develops critical thinking and expression of ideas in concise and persuasive written and spoken form.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Architectural Studies, Design Studies, Digital Culture (Design), Environmental Design, Graphic Design, Industrial Design, Interior Design, or Landscape Architecture major, or Design Studies minor; ENG 102, 105, or 108 with C or better OR Visiting University Student
GRA	361	Visual Communication III	Explores methodologies of strategic communication, development of visual systems, and information design ideation processes leading to applied projects in print and digital media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 223 & 224 with C or better; Co-requisite: GRA 321 OR Visiting University Student
GRA	362	Visual Communication IV	Comprehensive studio projects with emphasis on production processes leading to multidisciplinary applied projects in print, 3-D space, and digital media.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Graphic Design student; GRA 361 with C or better; Co-requisite: GRA 322
GRA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	401	Creative Environment	Explores and investigates theories of the psychology of space, psychology of people in space, and the psychology of objects as it pertains to creativity and the creative environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	421	Exhibit Design	Familiarization with the processes associated with the design of exhibits, especially visual communication in 3-D.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student
GRA	422	Motion Graphics/Intracn Desgn	Discusses and explores theory related to the design of motion graphics and interaction through lectures and studio projects.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design BSD major; GRA 322 with C or better OR Visiting University Student
GRA	423	Advanced Interaction Design	Advanced discussion and exploration of theory related to the design of interaction.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: GRA 422
GRA	424	Advanced Media	Advanced exploration of digital media for communication.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 422 with C or better
GRA	440	Finding Purpose	Career orientation in the creative professions, including value clarification, decision making, lifestyle planning, goal setting, and expression of individual talents.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
GRA	461	Visual Communication V	Comprehensive studio projects with emphasis on design processes, including research, writing, critical thinking, practice, presentation, and analysis.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 362 with C or better OR Visiting University Student
GRA	462	Visual Communication VI	Comprehensive studio projects pursued in cooperation with a public organization or private enterprise. All projects culminate in an exhibit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Graphic Design BSD major; GRA 461 with C or better OR Visiting University Student
GRA	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
GRA	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
GRA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Graphic Design major; GRA 362 with C or better
GRA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
GRA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GRA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
GRA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
GRA	501	Creative Envir & Collab Leader	Explores and investigates creativity and group collaboration leadership as it applies to the creative process.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): graduate Herberger Institute for Design and the Arts major

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GRA	521	Adv Vis Com Des Studio I	Students translate data, stories and references that they collect in their research into masterful visual narratives. This studio is an inquisitive environment for exploring ways to frame information and weave stories with graphic design. Students acquire new knowledge as individuals and as a group. Emphasizes studio-based research, conceptual development and articulation of process, voice and a high level of design execution.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Visual Communication Design major. Credit is allowed for only GRA 521 or GRA 590 (Advanced Visual Communication Design Studio I)
GRA	522	Adv Vis Com Des Studio II	Encourages students to develop a framework for understanding the role of design systems, tools and objects as cultural artifacts and their reflection on social diversity. In particular, students focus on the cultural experience of collaborative consumption as it is fostered through visual communication design.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 521. Credit is allowed for only GRA 522 or GRA 590 (Advanced Visual Communication Design Studio II)
GRA	526	Visiting Designers	Series of workshops (three per semester) in which students work closely with professionals and scholars in design and related disciplines.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	561	Methods in Visual Comm I	Introduces methodology in visual communication.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design or PhD in Environmental Design & Planning student
GRA	562	Methods in Visual Comm II	Advanced theories and methodologies in visual communication. Emphasizes visual search as the synthesis of theory and practice.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): GRA 561 with C or better
GRA	563	Thesis Document Design	Emphasizes the construction of the final thesis document as a visual communication object and/or medium.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student
GRA	581	Internship in Teaching Design	Develop assignments, conduct critiques, structure dialogue, make presentations, and assist in the instruction of studio and lecture courses.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Master of Science in Design student
GRA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRA	621	Adv Vis Com Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to work together to identify new design opportunities. For approximately one week during the semester, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 522
GRA	622	Adv Vis Com Des Studio IV	As a culmination of study at the master level, the student is responsible for the development of an individually determined, semester-long project in response to defined objectives, periodic commentary by committee, and formal review. Students meet regularly with a faculty member to discuss assignments. Final faculty review and project book containing a written as well as graphic theoretical component are the forms of final presentation for this contribution to the field of visual communication design.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): GRA 621
GRD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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GRD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Graduate College	Graduate College	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	N	LEC	Y	Z1	Graduate College	Graduate College	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GRD	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	GNA	Graduate College	Graduate College	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GRK	101	Elementary Ancient Greek	The beginnings of the ancient Greek language, the language of Homer, Sophocles, Plato and the New Testament. Grammar and vocabulary, with an emphasis on reading ability. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
GRK	140	Grk&Lat Roots Bioscfc Trmnlg	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
GRK	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142
GRK	201	Intermediate Ancient Greek	Ancient Greek syntax and grammar, equipping the student to read the foundational texts of Greco-Roman antiquity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): GRK 101 with C or better
GRK	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
GRK	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	301	Ancient Greek Literature I	Readings in ancient Greek prose; advanced grammar. May be repeated for credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better OR Visiting University Student
GRK	302	Ancient Greek Literature II	Readings in ancient Greek poetry.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): GRK 201 with C or better
GRK	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
GRK	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
GRK	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
GRK	351	Tales of Troy	Provides an in-depth exploration of the ancient Greek archaic primary source material, including literary, art historical and archaeological sources. Uses stories about the Trojan War as a theme for the course, but does not limit exploration of the literature, art, history and culture of archaic Greece.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 351 or GRK 394 (Tales of Troy) or LAT 394 (Tales of Troy) or SLC 351 or SLC 394 (Tales of Troy) OR Visiting University Student

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GRK	352	Rise & Fall of Ancient Athens	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the end of the Greco-Persian wars in 479 BCE through the rise and decline of Athens (including the Peloponnesian War with Sparta) to the final defeat of the Greek cities by Philip of Macedon in 338 BCE. This holistic study addresses not only the history of this period but also its literature, art and philosophy, with an emphasis on how these phenomena relate to one another. This period advanced to the state that was regarded by later civilizations as their peak, and which inspired Rome and Europe in the Renaissance. Athens, as the cultural center of Greece at this time, boasted the tragedies of Aeschylus, Sophocles, and Euripides, the comedies of Aristophanes, the history of Thucydides, the philosophy of Plato, and the artistic achievement of the Parthenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 352 or GRK 394 (Glory that was Greece) or LAT 394 (Glory that was Greece) or SLC 352 or SLC 394 (Glory that was Greece) OR Visiting University Student
GRK	353	Alexander and His Empires	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the ascent of Alexander the Great to the Macedonian throne in 338-336 BCE, through the existence of the kingdoms that followed his conquests, until their final subjugation by the Roman Empire in 31 BCE. This holistic study addresses not only the history of this period, but also its literature, art, religion, philosophy and science, with an emphasis on how these phenomena relate to one another. This was a period of massive economic and military expansion (including colonization), accompanied by social dislocation and cultural and scientific innovation. In these respects, this period has much to teach us today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 353 or GRK 394 (Alexander and His Empires) or SLC 353 or SLC 394 (Alexander and His Empires) OR Visiting University Student
GRK	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
GRK	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
GRK	363	Ancient Magic and Witchcraft	Examines magical spells, curses, amulets and other materials from ancient Greece and Rome. Students read anthropological discussions of magic worldwide to understand how ancient magic operated, what its function was within Greco-Roman society, and how it developed over the centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 363 or LAT 363 or SLC 363 or GRK 394/LAT 394/REL 394/SLC 394 (Magic and Witchcraft in Antiquity) OR Visiting University Student
GRK	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
GRK	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
GRK	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
GRK	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
GRK	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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GSC	501	War, Conflict and Security	Explores the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur. Introduces the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of the historical background of war and conflict, and some of the classic philosophical and military-strategic theories and conceptions of war. Introduces the institutional framework, the Westphalian state-based system of modern international law and relations, within which much of the theory and practice of modern conflict and war has developed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	502	Security Studies	Continues the exploration of the rapidly changing and highly complex geopolitical, technological and strategic context within which modern conflict and war occur; the profound social, political, economic and cultural implications of the changing nature of war and conflict. Provides an overview of several fundamental themes that run through the history of war and strategy, and discusses the increasing importance of nonmilitary "soft power" in managing conflict situations. Also introduces the importance of regional knowledge in conflict as a critical operational competence (using the Russian invasion of Crimea and Ukraine as a case study), as well as the broader challenges of civilizational conflict and the importance of identity and narrative in modern conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	503	Future of War	Provides an overview of key issues, themes and ideas associated with the future of war. Contextualizes this discussion with a reflection on the impact of 9/11, especially within the U.S. Engages a number of core concepts, including the meaning, nature and experience of war including theories that violence is in decline. Also considers the changing impact of new wars on civilians, shifts in current and future technology and future scenarios including questions of climate change, global demographics and potential major power conflicts. Links the ideas, theories and understandings of the future of war with specific cases and concrete examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	504	Understanding Conflict and War	Provides a critical overview of different definitions and meanings of war and armed conflict. Engages key theories used to understand conflict including realism, neorealism, liberalism and constructivism. Considers core issues in the field, linking empirical studies with explanations for what drives, sustains and resolves conflict including reviewing the fact that democratic states tend not to go to war with each other (the democratic peace); the structure and logic of arms races; escalation and alliance; and core ideas regarding peace, conflict management and conflict resolution. Many of the issues and theories reviewed in this class are linked with case studies and concrete examples.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	505	Law of War	Provides an overview of key elements of the law of war, also known as international humanitarian law (IHL) and the law of armed conflict (LOAC). Engages basic questions of international law, reviewing its history, sources and structure. Covers jus ad Bellum, the rules governing how states legally go to war as well as jus in bello, the established ideas regarding how to manage actions during armed conflict. Covers key principles within the law of war, including distinction, proportionality and necessity as well as reviewing the differences between international and noninternational armed conflicts and other key ideas. Reviews the systems through which the law of war is enforced and also considers basic theoretical and practical issues regarding compliance. In general, links the ideas, practices, rules and understandings of the law of war with specific cases and concrete examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
GSC	506	U.S. Politics of Security	Builds a foundational understanding of the complex system of formal and informal actors and structural forces that shape U.S. security policy. Starts with both theoretical and case study examinations of the role domestic politics plays in the production of policy decisions. Analyzes critical institutional actors and relationships between actors, including: the President and Congress, the National Security Council and interagency, and the civilian-military relationship. Finally, investigates key structural forces placed on the policy-making process by the American society, and the relationship between policymakers and the public.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	507	Global Politics of Security	Offers several approaches to understanding the global politics of security, including: the structure of international and multinational security institutions and actors including nongovernmental organizations (NGOs), the United Nations' Security Council, peacekeeping missions, regional organizations (NATO, EU, Inter-American System, ASEAN) and others. Also considers the roles of private military and intelligence contractors and corporations working on issues of direct and indirect relation to security issues. Through specific case studies and examples, reviews the operation of these bodies and their complex relationships.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	508	Comparative Studies of Conflict	Provides a critical overview of key theories on the causes, justifications and structures of political conflict and the use of violence. Begins by outlining core issues within the problem of social order, that is, how to think about managing governance and power. Reviews the idea of "collective action" and its link with force and violence, ideas that are contrasted with nonviolence as a political strategy. Then considers civil wars and interstate wars, comparing these forms of organized violence, as well as the current challenges of armed nonstate actors (within an international system premised on states) and an overview of the meaning of peace. Links the issues and theories reviewed in this class with case studies and concrete examples as a means of linking key ideas with their practical and policy implications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	509	Emerging Technologies	Provides an introduction to the implications of accelerating changes in military and security technologies, fueled by rapid developments in five core technology systems: nanotechnology, biotechnology, information and communications technology (ICT), robotics and applied cognitive science. Also introduces the idea of revolutions in military affairs, a concept that has been used to frame discussions about the strategic implications of new technologies from drones to cyber.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	510	Governance Conflict/Transition	One of the most pressing current global security policy issues involves understanding and implementing strategies, mechanisms and processes to address post-conflict and transitional contexts. How do societies create and manage representational governance after the fall of authoritarian regimes? How can institutions be rebuilt and reconstituted? How can a social order address the justice demands of victims of brutal political violence whose suffering was often a key element of prior systems of rule? Provides a critical introduction to the field of post-conflict reconstruction and transitional justice. Reviews the tense and uncertain nature of post-conflict environments and their challenges, engages the security questions raised by peacekeeping and stability operations. Also considers the difficulties of governance and reconstruction in the aftermath of conflict.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	511	Terrorism and Insurgency	Provides a critical overview of the use of terror by governments, insurgents and other nonstate actors. Engages the definition of terrorism and provides an overview of key practices and strategies. Reviews key theories as to the causes, meaning and impact of the deployment of terror as a strategy by distinct groups. This involves a consideration of state terror, insurgencies and global terror networks. Links many of the core ideas reviewed in this class with a set of case studies designed to ground the broader discussion of terror within specific situations and contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	512	Global Trends	Provides an overview of a number of key issues within global politics in the post-Second World War era. Reviews important institutions, including the United Nations, the World Bank, the International Monetary Fund. Provides a critical review of key theories, discourses and practices of international development, decolonization, democratization, poverty and gender issues. Reviews these major aspects of global society in relationship to core questions of governance and social order with a consideration of past, present and future trends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	550	Capstone	Serves as the culminating experience of the Masters in Global Security (MAGS). The capstone course allows each student to explore a research area, interest, theme or question. Final written products will be developed individually based on consultation with faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; GSC 501
GSC	560	Overview of Cybersecurity	Provides an overview of key issues and ideas associated with cybersecurity. Each week presents a set of readings related to particular themes including: the principles of cybersecurity and the special challenges posed by an interconnected world; key elements of internet architecture; outline of cyberattacks and cyberdefense; public and private internet governance and protection; espionage; and an overview of cyberwar. Provides a general overview of questions and core concepts regarding the cyber domain, the nature and structure of the internet and how to understand the special risks, benefits, offensive and defensive elements of an increasingly interconnected world. Reviews a set of core theories, concepts and considerations to provide students who may have little background in the area and do not need any technical proficiency with a foundation for engaging the complex nature of cybersecurity and its rising significance for global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GSC 560 or GSC 598 (Overview of Cybersecurity)
GSC	561	Cybersec Threats and Trends	Provides an overview of cybersecurity threats and trends. Each week presents a set of readings related to particular themes including: an overview of hacking and data breaches; special challenges and risks associated with protecting critical infrastructure on a state and federal level; and the complex, global threats posed by cybercrime. Also explores the risks associated with rapidly expanding social media and interconnectedness currently and into the future as well as providing an overview of key legal and ethical issues associated with cybersecurity policy. Provides a general overview of these issues in an effort to outline major issues regarding cybersecurity threats and how to best think about their impact on global security. Assists students in developing a strong conceptual foundation for engaging these issues and their broad policy implications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	562	Cybersec/Global Pol/Resiliency	Provides an overview of global cybersecurity preparation and resiliency. Because international cybersecurity threats change rapidly and because complete protection for most systems is impossible in an interconnected world, a significant amount of cyber policy focuses on improving mechanisms of preparation and enabling multiple forms of resiliency. The general idea is that attacks cannot be prevented or fully anticipated so creating more flexible, redundant and multi-faceted systems is a useful policy. Each week's readings are related to themes including: understanding core vulnerabilities, types of attackers and targets, modes of deterrence and encryption systems and tools. Engages the special challenges raised by attribution and outlines how to conceptualize and ensure system resiliency. Provides a critical overview of central ideas, concepts and terminology for better engaging of cybersecurity preparation and resiliency as a key element of global security.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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GSC	563	Cybersec Planning and Strategy	Provides an overview of cybersecurity planning and strategy. Since cybersecurity is a constantly evolving field, many aspects of planning are in a state of continual evolution. Many believe that broad-based, flexible strategies are necessary to enable key actors and institutions to engage in adequate policies to ensure general cybersecurity preparedness. Class themes include: an overview of key institutions and actors, central concepts of threat analysis, public and private cyberpolicy, and elements of international regulation. Also engages issues of cybersecurity strategy, the special challenges of non-state actors and ways to conceptualize and engage the future of cybersecurity. Reviews essential ideas and concepts, gains familiarity with key actors and institutions, and engages the complex interplay of governmental, intergovernmental, commercial and non-state actors engaged in cyber threats and protective action.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	501	Global Tech and Development	Major theories of economic, political, and social development, with particular emphasis on the impact of current technologies and globalization.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	503	Tech & the Intl Political Syst	Historical development of international political system, with emphasis on role of technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	504	Tech/Dev in Zones of Conflict	Examines the special context of technology and development in zones of conflict that face wars among other nations, civil strife and dramatic political change.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	505	Soc Sci Inquiry for Global Dev	Research design and processes in the social sciences including development of problem statements, effective literature reviews, diverse techniques of primary and secondary data collection and analysis, and design and development of research proposals.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	506	AppliedProj Methods-Global Dev	Surveys theoretical frameworks, research methods and knowledge mobilization techniques for research and creative applied projects in global development.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	507	Tech/Dev in the Middle East	Examines historical and current patterns of political and socioeconomic development in the Middle East, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 507 or GTD 598 (Political Development in the Middle East)
GTD	508	Tech/Dev in Latin America	Examines historical and current patterns of political and socioeconomic development in Latin America, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 508 or GTD 598 (Technology and Development in Latin America)
GTD	509	Tech/Dev in North Africa	Examines historical and current patterns of political and socioeconomic development in North Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 509 or GTD 598 (Technology and Development in North Africa)
GTD	510	Tech/Dev in Sub-Saharan Africa	Examines historical and current patterns of political and socioeconomic development in Sub-Saharan Africa, including the role of technological development and current events.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 510 or GTD 598 (Technology and Development in Sub-Saharan Africa)

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GTD	511	Development Policy & Practices	Since the Bretton Woods Agreements in 1944, enormous energy has been devoted to generating the right tools for global development policy. Yet, little attention is given to the relationship between these tools, the practice of development and actual outcomes. At best, it is understood as a "gap" between the theory of development policy and practices. There is no reflection on what the good development policy looks like or what collective learning we have thus far. Informs students on the complexity of policy making and its relationship to development practices through time. Creates an intellectual space to discuss the practices of global development; uses case studies to enhance students' creativity and skill needed in managing and negotiating critical development challenges. Approaches development policy (models, strategies and project design) primarily as a tool to legitimize power relation rather than to orient practice for desired development outcomes.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	512	Intl Gov & Dev - Nuclear Tech	Examines the historical context, present development and possible futures of nuclear technologies around the world. Topics include the origins of the modern nuclear era (1945-present), the nuclear fuel cycle including waste management, nuclear energy for security and modernization, nuclear catastrophes, and new possibilities in nuclear technologies, as well as international policies, national imperatives and local concerns with nuclear development. Students gain a better understanding of the complex political, environmental, cultural and economic values that inform and shape the development and implementation of, as well as resistance to, nuclear technologies.	N	LEC	N	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GTD 512 or GTD 598 (Technology and Development in Global Nuclear Energy)
GTD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
GTD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	501	Perspectives on Aging/Life	Uses life course perspective to appreciate age over time and examine demographics, theories and changes of aging, and gerontological issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	502	ResearchProgramEval in Aging	Focuses on critical thinking and empirical research in aging, along with program evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	503	Diversity in Aging	Examines various assumptions and parameters of diversity, autonomy, interdependence, ethical standards and communication with older individuals	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	504	CaregivingIssuesFamiliesProfes	Focuses on family communication, common health problems, and family dynamics that affect the structure of the complex caregiving experience.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCA	505	InterdiscCommunityCollabAging	Focuses on community collaboration with the family and older individuals to provide comprehensive care in aging.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	506	AdminSystemsMgmt/Aging	Focuses on administration and management of long-term care providers in nursing facilities; subacute and post-acute care; assisted living; senior housing; and community-based care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	507	CareCoordContinuumofCare	Focuses on care coordination of older adults across the continuum of care. Content includes an examination of the components of care coordination and the skills needed to address the needs of older adults with complex health challenges.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	508	MH Assessment & Intervention	Focuses on the aging experience and examines principles of gerontological counseling theory and practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	509	Interventions/Aging in Place	Focuses on creating supportive interventions to assist older adults in maintaining independence in their home environments.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	510	InnovationsProgDevelop&Policy	Focuses on creating age-friendly communities using innovative interventions and programs to promote older adult independence and quality of life. Also explores the influence of policy on care of older adults.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCA	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	100	Intro Science Health Care Del	Introduces the science of health care delivery in the United States. Presents basic concepts in health services, health care organizations, and the delivery of safe, accessible, high-quality health care. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HCD	101	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
HCD	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
HCD	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300 OR Visiting University Student

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HCD	302	Health Care Management	Broad concepts and skills of management; application of these techniques to health care organizations. Students appreciate the variability of management styles and personalities and begin to develop their own style. Solidifies concepts through the use of case studies and asynchronous discussion boards.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	303	Global Health Care Systems	Examines health care delivery systems internationally and explores contemporary issues affecting the institutions that provide health care and the people who seek health services. Covers the historical development of international health care systems, the organization and financing of systems of care, and the policy process and priority setting. Also covers current efforts at health care reform. Provides students with the necessary professional skills to be effective participants in efforts to evaluate and improve the delivery of health care nationally and internationally.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	G	Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	304	Health Care Finance	Influence and effect of health care financing from an institutional and individual perspective. Examines current issues in health care financing including the Affordable Care Act, payment models, Medicaid expansion, accountable care organizations, the role of health insurance and efforts to contain health care costs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Population Health BS major or HCD 302
HCD	330	Health Care Systems in US	Presents and integrates the organization, financing, and delivery of health services in the United States from the professional, organizational, community, and systems perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	332	Population Hlth Policy & Legis	Provides a historical and current overview of the federal/state/local law and policy-making processes that are relevant to population health, including how policies are implemented in society and the impact of those policies on health outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HCD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	400	Interpreting Scientific Lit	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	401	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
HCD	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402
HCD	403	Process Engineering	Core concepts in process engineering, specifically related to systems improvement and patient safety. The Institute of Medicine (IOM) advocates for integrating process engineering within health care to optimize health care outcomes. The IOM addresses multiple dimensions of health, including efficiency, effectiveness, safety, equity, patient-centeredness and access. These domains provide the framework from which faculty approach course content.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	404	Adv Concepts Sci Health Care D	Applies the themes of science, systems and leadership across the continuum of health and health care. Application and discussion of core competencies to facilitate critical thinking.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCD	405	Health Technology	Develops essential skills in identifying, analyzing and evaluating information technology applications in health care. Examples include electronic health records, computerized prescriber order entry, and computerized clinical decision support. Discusses the use of health technology in a variety of care settings, including outpatient and inpatient, and facilitate access to health care in resource-poor communities through the use of efficient technology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours

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HCD	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Quadruple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
HCD	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
HCD	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Science of Health Care Delivery BS major; minimum junior standing; minimum 2.00 GPA
HCD	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HCD	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HCD	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCD	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HCD	501	Biostatistics & Data Management	Provides an understanding of the statistical tools and principles of research design and methods in health behavior research in health environments. Encompasses an overview of quantitative, qualitative and mixed designs and focuses on the interpretation and communication of health behavior research through published reports and presentations. Incorporates research approaches and methodologies utilized in an array of content areas. Helps students gain a strong conceptual understanding and application of the statistical tools and research methods used to answer research questions of interest to health and health behavior researchers; it does not focus on mathematical treatments of underlying assumptions and formulae and related statistical problems sets or exercises.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	502	Health Care Systems and Design	Introduces direct health care delivery structures and processes within and across health care settings, and their impact on the patient, family and community experience of the health care system and services. Examines the interaction among people, resources, delivery systems and built environments using perspectives, tools and strategies from multiple disciplines to evaluate strengths, gaps and opportunities for system improvements.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	510	High-Value Pt-Centered Care	Evidence-based strategies for clinicians and health care administrators to implement into their workplace setting to promote healthy lifestyle behaviors and ultimately promote high-value, patient-centered care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	511	Health Econ Policy Payment Mdl	Economics provides a framework to understand and predict human decision making under scarcity, uncertainty and imperfect information. Examines concepts central to health care economics and their application to important decisions made by patients, families, practitioners, administrators and policy makers. Uses an individual family's scenario through a progressive case study to evaluate how incentives and information affect the health and health care of each family member. Each meeting integrates basic economic principles, existing facts and knowledge from economic research, and individual perspectives and experience regarding how these concepts apply to health care policy.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BMD 511 or HCD 511

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
HCD	517	Economic Eval in Health Care	This course will provide students with an introduction to economic evaluation in health care, including its use as a tool to assist with government decision making. The course will focus on the concepts and the methods involved in cost-effectiveness/utility analysis. It will facilitate the development of skills required to critically appraise economic evaluations and illustrate how to apply the concepts involved to assess health interventions.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	520	Population Health	Presents population health within a framework of health care delivery, public health, health promotion and prevention, health policy, and community programs and resources. Emphasizes a solutions-based perspective consistent with the Triple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	521	Law and Health Promotion	Analyzes case studies which illustrate the impact of policy and law on health promotion strategies and health outcomes. Includes discussions of the theoretical foundations supporting legal, ethical and economic decision making related to health promotion and real-world examples of the impact of current policies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	527	Healthcare Econ & Finance Mgmt	This course combines health economics and health care financial management. There is an introduction to double entry accounting to provide a working knowledge of cash and accrual accounting, plus an analysis of balance sheets, profit and loss statements and cash flow statements. How to construct a budget in a health care environment is a core skill in this course. The health economics component of the course introduces students to important economic concepts such as opportunity cost and supplier-induced demand and illustrates how these concepts can be applied to the health care industry.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	532	Health Care Mgt & Finance	Health care organizations are very complex institutions and require sophisticated understanding of modern management techniques. Provides a comprehensive overview of health care management concepts and principles with a focus on developing individual management skills. Centered on the management function and its unique purpose for an organization. Emphasizes planning, organizing, motivating and controlling, and how to acquire competency in these functions. Also addresses health care finance, which is an essential management competency.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	537	Comparative Health Care System	The first part of this course focuses on the principles and practice of health system analysis, the sources and utilisation of information relating to the development, organisation and operation of health services, and frameworks for assessing the performance of different health systems. Then, drawing on material from the health systems of affluent and developing countries, we examine the constitutional, legal, economic, social, and political environments within which health care systems operate and the various patterns that emerge. We review patterns of health service organisation and management: health policy development and planning; characteristics of personal, community and environmental health services and their activities; health service financing arrangements, including health insurance systems; and, the health workforce. The impact of some recent attempts at health system reform in different countries is assessed and proposals for future re-structuring are critically reviewed.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	540	Process Eng Health Qual&Safety	Provides an introduction to the science of health care delivery, an exciting field that focuses on how to achieve the quality care that providers want to deliver and patients expect to receive. Too often quality care is compromised by inadequately designed systems of care. Provides an overview of the health care delivery system and then introduces the major components of the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCD	547	Hlth Leadership Workforce Mgmt	This course critically examines a range of theories, models and approaches to leading and managing at different levels in health service organisations. It provides tools to identify and respond to management problems in the context of major changes in priorities and services in health and its workforce. Whether you come from a clinical, public health or other disciplinary background we consider how you can draw upon that understanding and your current organisational setting to strengthen your health leadership capacity and workforce management skills. Topics include: the shifting role of managers in health services; management and leadership theories and models; influence, power and management ethics; managing in resource constrained environments; diversity in health service settings; managing teams and motivating staff; conflict management and improving health worker performance; workforce planning and capacity building.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	550	Capstone	Discusses the results from student capstone projects, done in teams, and these projects related to broad topics explored during the prior coursework in the program. Capstone projects are identified early in the master's program in conjunction with and overseen by the degree leaders and the industry partners, and often a health care organization or health agency. These projects are worked on through the year with final written and verbal reports due in the last half of the semester.	N	RSC	N	GNA	College of Health Solutions	College of Health Solutions	1-2		Prerequisite(s): HCD 502 with C or better
HCD	557	Clinical Governance Risk Mgmt	This course provides an overview of emerging health policy with particular attention to clinical governance. The course consists of three components. The first component targets the main constituents of clinical governance, including practice design, analysis and improvement, error reporting and investigation, public accountability and open disclosure, multi-disciplinary teamwork and clinical leadership. The second component introduces the tools of clinical process redesign. These tools can help managers make practical improvements to practices in their units. The third component targets risk management by providing an overview of the kinds of risks faced by health service managers, and by outlining different views of risk (adverse effect versus opportunity capital). The course is comprised of three case studies that engage students in addressing specific but generalisable manifestations of the three components that make up the course.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	560	Systems Metabolic Physiology	Studies vertebrate energy metabolism in the context of systems physiology. With a particular focus on mammals and especially humans, discusses macronutrient storage, mobilization and utilization at the whole organism level. Presents theory and practice of several methodologies used to measure metabolic turnover, including indirect calorimetry, mass balance, isotopic tracers and doubly labeled water. Topics include metabolic rate and fuel selection during rest, locomotion and environmental stress such as energy scarcity or oversupply.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	561	Cellular Energetics/Metabolism	Focuses on the thermodynamics and kinetics of energetic processes at the cellular level. Discusses the metabolism of macronutrients by cells, principally skeletal muscle, cardiac muscle, adipose and liver. Presents membrane transport, energy storage and mobilization, non-oxidative/oxidative pathways of ATP synthesis and energy dissipation processes. Develops and uses concepts of metabolic control, energetic efficiency, metabolic scope and signaling to explore classic and current biomedical literature. Particularly emphasizes mitochondrial metabolism, including the chemiosmotic theory, proton leak, superoxide (free radical) production, interactions between the glycolytic and oxidative pathways, and the central role mitochondria play in health, disease and mortality. Describes the theory and practice of several methodologies central to the study of energy metabolism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student

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HCD	562	Bioeth Issues Trans Biomed Res	Discusses ethics and policy issues related to translational biomedical sciences research. Emphasizes research involving human subjects. Topics include: genomics and biospecimen research, especially related to biobanks, including confidentiality issues, genetic testing, ownership of genetic information, community advisory boards and return of results questions; regulation of research and proposals including human research oversight by the Institutional Review Board (IRB); relationship between medical research and medical treatment; and communication with patients, within and between institutions and with the general public.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	563	The Metabolic Syndrome	Provides a comprehensive understanding of the metabolic syndrome from an environmental, genetic and molecular perspective. Also discusses the treatment of this complex disease including lifestyle changes, pharmacological interventions and surgical procedures. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	564	TBS Seminar & Data Club	Combined seminar and data club related to translational biomedical sciences.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 3.00 GPA; degree- or nondegree-seeking graduate student
HCD	567	Infectious Diseases Challenges	Throughout history new pathogens such as HIV, SARS and pandemic influenza have emerged to challenge human populations. This course will introduce you to the challenges of controlling or managing infectious diseases through an appreciation of key factors such as differing modes of transmission, the impact of travel and behavior on transmission, the importance of surveillance in achieving disease prevention and control, key steps in outbreak investigation and current disease control and management strategies. Dengue fever, hepatitis A virus, HIV, influenza, measles, meningococcal meningitis, rota virus, SARS and TB will be used to learn about preparing for and containing diseases with potentially catastrophic impact to the health and economic stability. This course supports you achieving a range of capabilities that you will need if you are planning to have a career in epidemiology and infectious disease control.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	570	Process Engineering	Provides an overview of process engineering and the specifics of Lean Six Sigma as it applies quality improvement/process improvement in health care. The current health care system cannot deliver the necessary quality to ensure safety or consistent outcomes in predictable and controllable ways. It is essential to understand the impact of process engineering to improve the performance of health care delivery, and to understand the steps to performing a Lean Six Sigma process improvement project. This course builds on the quality improvement techniques introduced in earlier course work. Also enables students to obtain their Green Belt Certification in Lean Six Sigma.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	575	Leadership/Professionalism	Integrates principles of leadership theory, innovation leadership, change leadership and systems thinking through didactic and experiential learning. Identifies characteristics of successful leaders in health and health care, develops competence and confidence in creativity and innovation, and identifies ways to implement meaningful change in the dynamic health care environment. Applies theories to case studies in health and health systems to promote critical analysis, discussion and reflection on topics that provide the framework for future coursework.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCD	577	Infection Prevention in Hlthcr	Antimicrobial resistance is an urgent global health priority. In the near future common treatable infections may become untreatable. Currently 1 out of 20 hospitalised patients contracts a health care associated infection, of which around 50% are preventable. These infections add to the functional disability and emotional stress of the patient and in some cases, lead to disabling conditions that reduce their quality of life. In addition, they contribute to increased hospital stays and added expense to the health care system. Infection prevention and control in health care settings is now of national priority endorsed by the Australian Government, Ministries of Health, the Australian Commission of Quality and Safety in Health Care, health care facility accreditation organisations, as well as internationally by the World Health Organization.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	587	Outbreak Investigation & Intel	The course will provide a grounding in epidemiological pattern recognition (epidemic, endemic, sporadic) in infectious diseases for first-outbreak responders, surveillance officers, or policy makers from medicine, allied health, public health, emergency management, law enforcement, military or others from relevant backgrounds. Case studies in risk assessment, risk mitigation, response and prevention will be studied. These will cover Ebola virus disease, MERS-CoV, avian influenza and salmonellosis; distinguishing natural from unnatural epidemics, surveillance tools, rapid intelligence and analysis methods. Data quality in resource limited settings and implications for risk assessment will be examined. Understanding of modelling and forecasting of infectious diseases based on known transmission dynamics and patterns will also be explored. Preparation of first line responders to optimise usage of infectious diseases intelligence techniques will be covered, including prioritisation of data sourcing/mining, strengthening, mapping disease transmission patterns to modes of transmission, and ultimately epidemic control measures.	N	LEC	Y	NSW	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): International Health Management MIHM student
HCD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HCD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
HCD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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HCD	602	Health Informatics Future HC	Offers an overview of the field of health informatics, designed specifically for health science students, health services students, and current and future interdisciplinary clinicians. Combines perspectives from medicine, computer science, information science, organization science, Science and Technology Studies and human-centered computing for use of computers and information in health care and the health sciences. Covers applications and general methodology in health informatics using current topics in the field.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	150	Intro Health Innovation	Introduces health care innovation including diffusion of innovation, technology and current health care innovative ideas and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCI	250	Health Entrep & Value Creation	Change your mindset. Focuses on recognizing and questioning your assumptions, learning how to gather and accept feedback, and designing pivots to improve innovative and entrepreneurial outcomes. Seeks value creation opportunities in health and health care settings through opportunity recognition, value creation and business modeling. Students create an innovative change idea, demonstrate proficiency in lean startup methodologies, and "pitch or ditch" a ready-to-launch idea.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCI	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	311	Health Innovation: Found Conc	Provides foundational knowledge for leading health innovation. Organized around the Seven Pillars of Innovation: innovation process, leadership structure, outcomes, evidence-based practice, finance, policy, and technology and communication. Emphasizes principles of health innovation, in addition to characteristics, skills and knowledge required for the innovator.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102,105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	313	Phil of Science in Healthcare	Philosophy of science and its application to health and healing paradigms. Employs selected schools of thought and individual philosophers within philosophy of science to closely examine health and healing paradigms. Discusses concepts such as "life" and "death". Explores questions: What is science? What is health? Examines the way in which philosophy of science informs perceptions and definitions of health and healing in individuals and populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	344	Manage & Lead Health Orgs	Focuses on management, administration and leadership strategies in health institutions with an emphasis on organizational innovation and entrepreneurial thinking. Managing in health organizations includes unique challenges related to labor relations, practice codes of conduct, federal privacy considerations, and accreditation regulations. Includes a review of leadership methods, labor laws and practices for effective management in health- and health care-related organizations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 311 with C or better OR Visiting University Student
HCI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours
HCI	412	Transforming Health Care	Investigates the essential elements of systems thinking as a framework for innovation in addressing current and future issues in health care. Demonstrates systems thinking to present and future problems in health care and utilizes the knowledge and understanding of behavioral and learning styles to facilitate innovation in diverse systems. Stresses the importance of collaboration to the systems perspective, in addition to the value of individual worldviews.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student

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HCI	421	Health Care Policy	Innovation perspective on policy decision making in the health care environment. This perspective views policy-making as a fluctuating, dynamic and evolving process as seen through a lens of innovation principles. Explores the relationship between politics and policy and discusses factors influencing policy development. Identifies methods to formulate and implement policy and presents models to evaluate, analyze and modify health care policy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	425	Facilitating Innovation	Principles of facilitation that promote and enable the implementation of innovation to achieve outcomes. This approach identifies facilitation as requiring collaboration, continuous evaluation, and a focus on identifying and measuring health outcomes. Discusses characteristics of effective teams, innovation leadership behaviors that impact change, and involvement of end users. Compares and contrasts traditional project management processes with innovative facilitation techniques.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 311 with C or better OR Visiting University Student
HCI	428	Technology: Health Care Innov	Explores the role of technology in achieving the Triple Aim: improved quality, improved patient experience and decreased cost. Compares and contrasts tools of technology that hold the potential to advance innovation in health care. Examines the relationship among the users, their behaviors and technology and how this interaction advances communication, automation, organization and standardization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
HCI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): minimum 45 hours
HCI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): minimum 45 hours
HCI	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Prerequisite(s): minimum 45 hours
HCI	538	Innovation and the Individual	Role of the innovator, including the essential insight, leadership styles, vision, ethical wisdom, resiliency and the development of an attitude supportive of risk taking. Examines and correlates different situational challenges with types of intelligence, behaviors, learning styles.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	540	Applying Principles of EBP	Understanding how application of evidence-based practice principles assists health care professionals to provide the best care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	542	Systems Thinking	Explores systems thinking theories and methodologies in the context of the complex and often chaotic environment of health care. Examines opportunities and challenges for innovation and innovative leadership in the health care system.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	543	Approaches Health Care Innov	Theory-based survey course introduces approaches to lead innovation in an organization. Many change initiatives are designed by those not completing the work, leaving workers isolated, restricted and powerless. Teaches health care leaders to value collaboration with and seeking input from those who will carry out the work. Analyzes approaches to planned change: positive deviance, appreciative inquiry and creation of a learning organization. Students construct a change plan using an appropriate approach to address a health care problem.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCI	544	IT for Health Care Innovation	Transforming health care through the development of sound information technology strategies is critical to the success of most health care organizations today. Examines information technology trends and their strategic application in health care. Learners create a plan for engaging IT resources and capabilities, and for executing an IT-based strategy for solving a problem in health care. Topics covered include: strategic processes, digital transformation, IT assets, design thinking, value creation, IT governance and transition change management.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	545	Public Speaking for Innovation	Builds presence as a speaker and a leader. Public speaking has evolved dramatically over the last few years. Now it is about creating a public presence; e.g., on YouTube, Facebook live, TED Talks. Public speaking for innovation is a combination of finding and building one's presence as a speaker—and translating that to an ability to explain and persuade, making the case for change. Students build their presence and gain the foundational knowledge necessary to successfully explain and persuade in various modalities of media, from speaking in person to video creations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	548	Adv Princ&Concepts Innovation	Explores and analyzes the innovation in complex systems, focusing on developing specific skills for successful innovations. Specifically addresses strategies to overcome barriers and resistance to innovation in health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538 with C or better
HCI	550	Health Care Policy & Innovation	Introduces the political, organizational, and economic dimensions of health care policy, emphasizing strategies for innovative policy and practice.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	552	Financing for Innovation	Provides an overview of healthcare economics; develops budgeting, planning, and management skills; and culminates in financial analysis skills necessary to facilitate management decision making or writing business plans or grant proposals.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	554	Outcomes Evaluation	Outcomes measurement, management, and evaluation for health care practitioners and/or leaders.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	561	Innovation Methods	Explores methods to generate innovation for use in a health care setting. Provides tools and practice in generating ideas, exploring utilizing appreciative inquiry, and demonstrating competencies related to the theories and processes of innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	563	Capstone: Final Project	Applies the concepts learned in MHI core courses and presents evidence of knowledge in innovation principles, applications and strategies for implementation and evaluation. Develops an innovation project in the form of a presentation. Provides a comprehensive methodology for completing all aspects of an innovation opportunity. Student-directed demonstrations of the application of learned leadership skills and techniques for facilitating team and individual implementation.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s) with C or better: HCI 538; HCI 540; HCI 542; HCI 544; HCI 548; HCI 550; HCI 552; HCI 554; HCI 561
HCI	570	Innovation Proposal	Applies concepts learned and operationalizes skills acquired throughout the Health Care Innovation certificate. Students envision emerging paths toward an outcome by first presenting a problem they have identified within a health care organization, and creating collaborative relationships and developing strategies to initiate change in their chosen setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): HCI 538; HCI 542; HCI 554; HCI 561
HCI	571	Innovation Portfolio	Examines and applies personal leadership potential. Focuses on the effective development and facilitation of human networks to advance innovation in the health care space. Challenges students to appraise and analyze personal leadership strengths, challenges and opportunities. Explores strategies to evaluate students' current networks; develops the students' emergent professional networks. Gives focus to building relationships necessary to advance innovation in the health care space. Students develop and implement an action plan to advance their personal leadership growth and network utilization.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCI 538; HCI 543; HCI 545; NLM 562
HCI	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	N	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	210	Ethics HealthCare Professional	Health care ethics emphasizing analysis and ethical decision making at clinical and health policy levels for health care professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	
HCR	220	Intro Health Professions U.S.	Introduces the historical, social, political, economic and interprofessional contexts in which health care professions and the United States health care system evolved.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	H	
HCR	221	Fndntl Cncepts Hlth Care Cord	Focuses on the foundational elements of health care coordination. Discusses the health care coordination process including assessment, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	230	Culture and Health	Cultures of diverse groups and health/illness. Cross-cultural communication, awareness of own cultural influences, indigenous and alternative healing practices.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	C & G	
HCR	231	Fund of Comm Health	Provides a framework for understanding community health concepts.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	240	Human Pathophysiology	Chemical, biologic, biochemical, and psychological processes used in study of structural and functional alterations in health with selected therapeutics.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better; CHM 101 or higher with C or better; MIC 205 with C or better; MIC 206 with C or better OR Visiting University Student
HCR	241	Fndtions of Integratv Health	Discusses the similarities and differences of the biomedical and integrative health care systems providing an overview of integrative health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HCR	245	Sleep, Sleep Disorders&Behavio	Focuses on the nature, organization, function and biopsychosocial determinants of sleep and sleep disorders across the lifespan, emphasizing the social and behavioral processes that influence them.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): Credit is allowed for only HCR 245 or HCR 294 (Sleep, Sleep Disorders, and Behavior) or HCR 294 (The Science of Sleep Behavior)
HCR	259	Compliance and Health Care Ind	Introduces health care compliance as an industry and a profession. Explores the complex federal and state laws that regulate the delivery and reimbursement practices of the U.S. health care system. Also explores federally legislated mandates for formal compliance programs, program elements, and the organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Students may not enroll in HCR 259 if credit with C or better earned in both HCR 260 and HCR 261 OR Visiting University Student
HCR	260	Health Care Industry	Overview of the complex system of regulations that frame the oversight and monitoring of the U.S. health care industry. Provides a foundational understanding of federal and state regulations as well as private health care regulatory agencies' requirements as they relate to physicians and other health care professionals, hospitals and other health care institutions, and insurance companies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	261	Health Care Compliance	Introduces health care compliance as an industry and a profession. Explores federally legislated mandates for formal compliance programs, program elements and organizational steps for program implementation in specific health care settings.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
HCR	262	Health Care Licensure	Introduces interprofessional practice, professional licensure, education and training, certification and scope of practice within the health care industry. Explores compliance standards and accreditation as they relate to the authority and scope of licensure boards, which are designed to safeguard the public health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		

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HCR	263	Intro to Medical Billing	Introduces the complex process of medical coding and billing practices and related federal regulations and programs. Provides learners with a fundamental understanding of medical coding and billing processes including terminology, stakeholders and regulatory impact.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 260 with C or better OR Visiting University Student
HCR	264	Regulatory Essentials I	Offers a comprehensive overview of the regulations that impact the health care delivery industry. These regulations include: protections against fraud and abuse, patient rights and privacy, protected health information (PHI) and electronic protected health information (ePHI), and occupational health and safety.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 or 261 with C or better OR Visiting University Student
HCR	265	Regulatory Essentials II	Comprehensive study of the creation, management and evaluation of all aspects of a formal health care compliance program. Learners investigate and discuss roles of the compliance officer and compliance committee, risk analysis, recommendations for and implementation of corrective action.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 264 OR Visiting University Student
HCR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	PRA	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	301	Rsrch Mthds for Hlth Care Prof	Explores basic concepts of qualitative and quantitative research design utilizing methods of assessment, planning, implementation and evaluation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): PSY 230, SOC 390, STP 226, or SWU 321 with C or better if completed; TWC 347 or 362 with C or better if completed OR Visiting University Student
HCR	302	Social Determinants of Health	Addresses issues of social determinants and health disparities at the local, national and global levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 301 with C or better if completed; TWC 347 or 362 with C or better if completed OR Business (Health Care) BA major or Health Care Coordination BIS emphasis or Health Care Coordination minor OR Visiting University Student
HCR	303	Assess Nds Assts Cap Hlth Ed	Assesses needs, assets and capacity for health education at the individual, family and community levels.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 with C or better; HCR 230 with C or better; Pre- or corequisite(s): CDE 232 with C or better if completed OR Visiting University Student
HCR	310	Fundamentals Human Trafficking	Covers the complex problem of human trafficking including types of human trafficking, terminology, victim identification, policy implications, and the role of health providers and governmental and community agencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only HCR 310 or HCR 394 (Fundamentals of Human Trafficking) OR Visiting University Student
HCR	321	Advcd Cncpts Hlth Care Cord	Presents advanced concepts for health care coordination, including: interprofessional teamwork, medication reconciliation, patient/family engagement and other tools that facilitate best practices for health care coordination. Students also learn models for health care coordination, and concepts and practices to facilitate transitions of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 with C or better OR Visiting University Student
HCR	331	Communication Within Commun	Focuses on the integral nature of communication in health care, including the role communication plays in shaping individual, social and cultural beliefs and expectations about health. Provides skills for effective communication when working with individuals, groups and the media.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	335	Prog Develop Mngmt Comm Hlth	Incorporates models, research and resource management to plan, strategize and evaluate community programs that promote healthy lifestyle choices in various, as well as specific, geographic communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): General Studies Literacy course; minimum 45 hours OR Visiting University Student
HCR	336	Environm Community Health	Examines the interdependent relationship between the health of the environment and the health of communities. Includes a focus on specific communities, as well as agencies and laws involved in the health of communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better OR Visiting University Student
HCR	341	Bio, Manipultv,Bdy Bsd Therap	Analyzes the principles and practices of select biological and body-based therapies and modalities and their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student
HCR	342	Mnd Bdy Enrgy Theraps Modalit	Analyzes the principles and practices of select mind-body and energy therapies and modalities and explains and distinguishes their use in the health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): any BIO course or any CHM course OR Visiting University Student

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HCR	343	Hist Ctrf Fnd Integrvtv Hlt Cr	Distinguishes commonalities and differences between early healing traditions and investigates the utility for today's health care system.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	350	Intro Clinical Research	Provides an introduction to the biomedical and clinical research field and associated operational processes. Examines clinical trial development phases, regulatory protections for human subjects, clinical research team specializations, research organizations, good clinical practice, institutional review board functions, and research funding mechanisms. Explores specialized career positions for nursing and allied health professionals.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HCR	360	Data Security and Privacy	Focuses on administrative practices that ensure the security of computerized systems and the protection of health information. Topics include communication and reporting, as well as specific regulations and authorities such as the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Breach rules, and HIPAA Security and Meaningful Use Attestation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	361	Risk Management	Risk management practices as they relate to the oversight of operations and processes within the health care industry. Utilizes various tools to predict, analyze and mitigate practices that may lead to industry noncompliance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	362	Monitoring and Auditing	Ongoing health care compliance evaluation process critical to a successful compliance program. Provides the knowledge to utilize monitoring and auditing systems to ensure health care operations conform to established standards or comply with federal, state or local rules and regulations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 259 with C or better OR Visiting University Student
HCR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	400	Evd-Bsd Prac Hlthcare Prof	Methods of clinical and scientific inquiry. Focuses on the application of an evidence-based practice approach.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 301; TWC 347 or 362, OR Applied Science (Health Innovation) BAS major OR Visiting University Student
HCR	402	Advoc for Hlth and Hlth Ed	Discusses and analyzes existing or proposed policies on health and strategies for influencing the policy-making process.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 303 with C or better
HCR	406	Hlth Litrcy for Hlth Cr Prof	Prepares students to use best practices for health communication that promote consumer health literacy.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 210 or MED 320 (HCD 320); HCR 230 or HSC 210 (HCD 210) OR Applied Science (Health Innovation) BAS major; Pre- or coreq(s): HCR 301 w/C or better if completed or Applied Science (Health Innov) BAS major OR Visiting University Student
HCR	420	Prof Role Dvel: Hlth Care Cord	Professional role development including role transition, leadership and project management for health care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 (or HCR 320) with C or better; HCR 321 with C or better OR Visiting University Student
HCR	422	Plcy Fincf Princpl Hlth Cr Cor	In-depth look at the history of health care policy in the United States from World War II to the present focusing on how Medicare, Medicaid and the Affordable Care Act impact health care system and patient reimbursement. Also discusses elements of insurance, managed care and universal care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 221 (or HCR 320) with C or better OR Visiting University Student
HCR	426	Hlth Care Coord Capstone	Applies higher-level critical thinking, teamwork, effective communication, informatics and design process required to develop a "real-world" health care coordination solution that will be a catalyst for change by improving safe patient-centered transitions, lowering readmission rates, increasing patient safety, and/or decreasing the cost of care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 321 with C or better; HCR 400 with C or better; HCR 422 with C or better
HCR	430	Fndn to Hlth Care Systems	Explores the impact of the current U.S. health care system on the health of individuals, families and communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 (HCR 330) or 259 or 260 with C or better OR Visiting University Student
HCR	435	Leaders in Community Health	Prepares students to assume a leadership role in health promotion in communities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 231 with C or better; Pre- or corequisite(s): HCR 335 with C or better if completed OR Visiting University Student

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HCR	439	Community Health Capstone	Provides the opportunity to explore the health status of communities and to develop strategies for community health improvement.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s) with C or better: HCR 231, 331, 335, 336. Pre- or corequisite(s): HCR 430, 435 with C or better if completed
HCR	440	Intrprof Appch Intgrtv Hth Cr	Prepares learners to develop and lead interprofessional teams with a focus on roles and responsibilities of integrative health care providers and practitioners.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Business (Health Care) BA major OR HCR 241 (or HCR 340) with C or better OR Visiting University Student
HCR	441	Lgl Eth Iss Imp Intgrv Hlthcar	Examines current laws, government regulations, ethical principles and case studies to understand issues and consumers' use of integrative modalities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 with C or better OR Visiting University Student
HCR	449	Integratv Hlth care Capstone	Provides the opportunity to design a healing environment project that reflects the philosophy, mission and values of a health care organization in relation to underlying philosophy and beliefs of integrative health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 241 and 341 and 342 and 343 and 400 and 440 all with C or better; Pre- or corequisite(s): HCR 441; TWC 443
HCR	460	Investigations and Disclosures	Types of disclosures required by and investigations conducted by regulatory and accrediting agencies overseeing health care entities. Introduces oversight activities, enforcement and potential penalties incurred by health care entities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 362 OR Visiting University Student
HCR	461	Corrective Action	Use of corrective and preventive actions (CAPA) in meeting the challenges of a compliant health care services operation. Covers design and implementation of CAPA to respond to deviations or errors in the health care environment. Identifies problems, implements corrective actions, evaluates consequences and employs preventive measures.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 460 OR Visiting University Student
HCR	462	Specialty Topics	Provides a comprehensive review of case studies and recent enforcement action involving litigation and enforcement of health care law, including review of landmark and contemporary cases brought by the United States Office of Inspector General, the Office of Civil Rights and state attorney generals. Applies knowledge and skills acquired from earlier coursework to real-world situations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): HCR 260; HCR 261
HCR	463	Capstone Project	Culminating course integrating all components of health care compliance core courses and demonstrating knowledge and competency in the field of health care compliance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): HCR 460; HCR 461
HCR	471	Interprof Ed & Comm Hlth	Community-engaged service learning exposes students to community health and interprofessional education through the delivery of team-based services with vulnerable populations. Students build on their professional practice skills as they develop interprofessional competencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prereq(s): ENG 101, 105, or 107 w/ C or btr; min 15 hrs; Crdt for only CRD 471 or HCR 471 or CRD 494 (IntrproEdu & ComHlth), CRD 598 (IntrproEdu & ComHlth), HCR 494 (IntrproEdu & ComHlth), or PRM 494 (IntrproEdu & ComHlth) OR Visiting University Student
HCR	472	Interprof Ed & Complex Hlth	Complex health community-based experiential learning with immersive "real-world" learning opportunities. Students dedicate hours at pre-approved placement sites serving a community; apply new (and advance prior) complex health knowledge and skills; benefit from an expanded scope of supervised practice experience while providing targeted complex health interventions that address health and health care disparity needs, improve care quality, and reduce care costs for individuals, families, communities, and/or populations with complex health needs. Students practice values and ethics, communication, roles and responsibilities, teams and teamwork, and leadership competencies essential for interprofessional collaborative practice and team-based care. Online and in-person collaborative learning includes: seminars, course readings, discussions, and reflection assignments to facilitate critical thinking and a deeper understanding of the delivery of complex health interprofessional team-based care in the community.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prereqs with C or better: CRD 471, HCR 471, or CRD/HCR 494 (Interprof Ed & Comm Hlth) OR Hlth Care Coord major; HCR 210; HCR 220; HCR 230; Credit for only CRD 472 or HCR 472 or CRD/HCR 494/598 (Interprof Ed & Complex Hlth) OR Visiting University Student
HCR	473	Interprof Ed & Com Sys Hlth	Community-engaged experiential learning integrates students into comprehensive systems health and interprofessional education through the creation of team-based community impact projects with vulnerable populations. Students refine their professional practice and leadership skills as they integrate interprofessional competencies.	N	LEC	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Prereqs w/min C: CRD 471, CRD 472, HCR 471, HCR 472 or CRD/HCR494 (Interpf Ed&Comm Hlth or Interpf Ed&Cmplx Hlth) OR Hlth Care Coord, Comm Hlth or Integrative Hlth BS; HCR210; HCR220; HCR230; Credit for CRD 473 or HCR 473 OR Visiting University Student

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HCR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
HCR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HCR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	PRA	Y	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		
HCR	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student
HCR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7		
HCR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		
HCR	543	Food Safety and Protection	Covers food safety from the point of view of retail food safety inspectors. Addresses careers in food safety and protection, food and waterborne pathogens, food safety laws and regulations, hazard analysis, food safety inspection steps, investigations, report writing and response to food emergencies.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	544	AssessFoodSafetyPolicyProcedur	Provides overview for the knowledge, skills and abilities required for assessing food safety and developing food safety policies, procedures and training.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 543
HCR	545	Biospec Repos Admin	Examines the biospecimen repository industry from a business perspective. Students learn the scientific basis, collaborative nature, required personnel, timelines and processes that underlie the business environment of biospecimen repositories and their administration.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	546	Mgmt of Biospec Repos	Examines the biospecimen repository industry from an operational perspective. Students learn the process aspects of repository start-up through collection, maintenance and disbursement of specimens. Key elements include personnel training, planning, quality control, risk management, project management and safety implementation.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	547	Biospec Tech Mgmt	Examines the biospecimen repository industry from a technology and resource perspective. Students learn the planning and selection of technology and resources for the support of the start-up and long-term maintenance of a biospecimen repository. Key elements include technology and resources assessment and choice, cost-benefit analysis, initial budget, long-term and short-term planning.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	548	Biospec Repos Regs and Ethics	Examines the biospecimen repository industry from an ethical and regulatory perspective. Students learn the ethical and consenting challenges of biospecimen collection, storage and disbursement. Examines relevant historical case histories to inform current policies and practices.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	549	Science Innov & Biospec Repos	Explores the driving effects of scientific innovation on biospecimen administration management. Students learn how scientific advancements increase the demand of high-quality biospecimens and high-quality data, referred to as next-generation biorepository research. Examines tracking pre-analytical variables, adequate preservation and storage methods, controlled biospecimen and data custodianship, governance with ethical and scientific oversight of operations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 545
HCR	550	QA&SafetyinFoodDietSupplement	Covers current applicable regulations and the regulatory framework that ensure the safety and quality of dietary supplements for the consumer. Reviews FDA regulations including Good Manufacturing Practices (GMP), quality in the development and manufacture of dietary supplements, labeling requirements, advertising, product quality, premarket notification, marketing, and postmarketing of dietary supplements.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	551	Clinical Research Monitoring	Introduces clinical trial monitoring processes and procedures.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	552	Medical Device Regulation	Comprehensive examination of the regulatory framework for the design, development, approval/clearance and marketing of medical devices in the United States throughout the product lifecycle.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	553	Quality and Clinical Research	Explores basic quality assurance techniques, standards and applications in the clinical research arena.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	555	Pharma Risk Management	Comprehensive examination of regulatory, legal, and scientific factors in pharmacovigilance and risk management and risk mitigation.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	557	ClinicalResearchDesignMethods	Explores basic clinical trial biostatistical methods in concert with clinical trial design and methods.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	558	Regulatory Writing	Focuses on teaching and applying writing and presentation skills critical for regulatory professionals.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	560	Regulatory Science Capstone	Culmination course integrating all components of regulatory core courses demonstrating knowledge and competency in the field of regulatory science.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		Pre-requisite: Regulatory Science and Health Safety Master of Science student
HCR	561	Conduct of Clinical Research	Introduces concepts and policies for the responsible conduct of research (RCOR), institutional review boards, and dissemination of findings.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	562	Data Management & Technology	Orientation to database design and management, technology assessment methods, auditing procedures for continuous quality improvement (CQI), and cost-effectiveness analysis (CEA).	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	563	Regulatory Affairs	Principles of clinical research management and regulatory affairs. Overview of national/international regulatory systems and agencies, and trends in conducting clinical research.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	564	GlobalRegulatAffairsLeadership	Links students to international networks; exposes students to regulators of therapeutic products in different jurisdictions and provides networking within a global industry to enhance the confidence of students to influence global regulatory policy development. Enables students to network with senior executives and experienced regulatory affairs professionals in the global therapeutics industry. Provides skills, knowledge and global connections to discuss and develop strategies to address principles and issues facing global pharmaceutical regulatory affairs and its role in the maintenance of public health. Students develop a deep understanding of therapeutic product regulation across the world and acquire the skills to lead change management in international regulatory issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HCR 564 or HCR 598 (Global Regulatory Affairs Leadership)
HCR	565	Clinical Research Operations	Development, implementation, and operations of FDA clinical research trials, including budgeting, contract negotiations, site evaluation, marketing, project management, and reporting.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	566	Research Management Capstone	Culmination course integrating CRM degree coursework by demonstrating knowledge and competency in clinical research management planning, operations, and implementation processes.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCR 551 with C or better; HCR 561 with C or better; HCR 563 with C or better; HCR 565 with C or better; HCR 574 with C or better; 15 additional hours of HCR graduate-level courses with C or better
HCR	567	Research Management	Management and leadership principles integrated with contemporary research topics will be introduced.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	568	Health Care Project Management	Designed for graduate students and managers who desire to improve their effectiveness as project managers in the health care context.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	570	International Health Systems	Introduces systems of international healthcare delivery, professions that provide healthcare delivery, and international research principles and practices.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	571	Cultural Diversity&HlthcareDel	In-depth exploration of culturally diverse aspects of population health, including culture-bound syndromes, folk practices, assessment approaches, and interactions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	572	International Health Capstone	Culminating course integrating all International Health requirements that produce culturally responsive implementation and evaluation plan for the student's clinical practice. A portion of the course will be held in Mexico.	N	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	574	Science&Research Review Boards	The role and responsibilities of Scientific and Research Review Boards in the conduct of human research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	575	MgmtNegClinTrialBudgetContract	Examines best practices in contracting, negotiating and budgeting for industry-sponsored clinical trials.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): HCR 561 with C or better if completed
HCR	576	Drug Discovery,Development&Reg	Covers the drug discovery and development process from bench to market, including bench and animal research, FDA approval for human studies (Investigational New Drug submission), Phase I-IV clinical studies, New Drug Application, marketing and post approval surveillance. Reviews applicable regulations, laws, guidance documents, good clinical practices related to drug development in the U.S. and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	577	Global Regulatory Affairs	Covers regulatory authorities, processes, procedures, International Conference on Harmonisation (ICH) guidelines and documentation for the marketing approval of new medical products in the U.S., European Union (EU), Asia and emerging countries. Reviews global regulatory submissions, focusing on the organization and requirements of the Common Technical Document (CTD) global sections. Also reviews global trends, ethical considerations, country-specific considerations and cultural considerations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	578	Legal Aspects of Clinical Rsrc	Reviews the legal implications related to conducting clinical research. Covers current topics and legal issues, standards, duty of care, informed consent, research contracts, malpractice, negligence, informed consent, liability, clinical trials and criminal law, disclosures of clinical information, and liability. Students review and discuss recent research cases and litigation on a wide range of legal issues.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	579	Trans Rsrch Drug Discovery&Dev	Reviews the translation of new drug research from bench to FDA approval. Provides an overview and history of the translational process in the discovery of new drugs and biologics used in the treatment of medical conditions. Topics include: addressing the gaps in drug development, new approaches to speed the process from bench to FDA approval, and the provision evidence-based medicine for sustainable pharmaceutical products utilized in medical treatment.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Regulatory Science and Health Safety MS student or Clinical Research Management student
HCR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HCR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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HCR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
HCS	501	FoundationHealthCareSimulation	Explores theoretical foundations of health care simulation education and delivery.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
HCS	502	HC Sim Ed Assess Debrief	Explores assessment and debriefing practices in health care simulation education. Provides opportunity to analyze and plan debriefing strategies that support reflective, student-centered learning.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501
HCS	503	Operations Mgmt Health Care	Engages students in the business practices and principles essential to health care simulation program operations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): HCS 501
HCS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): HCS 501; HCS 502; HCS 503
HCS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRO	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Prerequisite(s): HCS 501; HCS 502; HCS 503
HDA	101	ASU & Herbergr Inst Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university and the Herberger Institute for Design and the Arts. Explains and defines success with integrity, ASU resources and involvement, the importance of arts to society and the community, personality and learning style, and success in college and beyond.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Herberger Institute for Design and the Arts majors
HDA	111	Art and Society	Introduces the interplay between art and society, particularly how one influences the other.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		
HDA	125	Survey of the Fashion Industry	Prepares the student to know how the fashion industry operates and what to expect when working in it. From manufacturing to retail, it is important for all members of the fashion industry to understand how the processes interrelate.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3	HU	Prerequisite(s): Fashion BA major; Credit is allowed for only FSH 125 or HDA 125 OR Visiting University Student
HDA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	210	Creativity & Innov Design Arts	Designed to get students thinking in a focused manner about creative practice and process. Many young designers and artists arrive at higher education in their discipline having taught themselves or having received a piecemeal education in the directed application of ideas. Aids students in knowing why and how they are creative. Covers types of creativity, how inspiration happens, how to take a project from idea to reality, how to work creatively in teams and how to fuse creative ideas with an understanding of environment to help realize work in socially useful ways.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Credit is allowed for only HDA 210 or 294 (Creativity & Innovation for Design and the Arts)
HDA	225	Fashion Design	Expands upon fashion design fundamentals learned earlier to encompass additional aspects of the fashion industry, which includes fashion as business, and as a sociological and cultural phenomenon.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 125 with C or better
HDA	252	Fdn Arts&Design Entrepreneurs	Develops entrepreneurial knowledge and skills supporting the self-actualization, self-efficacy and market acumen of artists and designers.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student
HDA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	296	Creative Futures: Studio	Develops skills in creating fully realized design ideas and creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with the sequel course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		

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HDA	310	Socially Engaged Practice	Students gain a wide literacy in the community arts field through reading, discussion and technical practice. Examines theories and techniques of community-based project development. Pairs artists with communities to create art rooted in the needs, values, desires, triumphs and challenges of that community. Helps prepare the artist of the 21st century with skills to apply artistic practices in diverse contexts.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 42 hours; Credit is allowed for only HDA 310 or 494 (Public Practice: Engagement & Community)
HDA	311	Work:Cultural/Creative Industry	Introduces fundamental questions in the study of work and careers in the cultural and creative industries, including an overview of historical changes in the relationship between the individual and his or her work environment; comparisons between different types of work arrangements (part-time, freelance, internships); and practical implications for contemporary workers.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): minimum 45 hours
HDA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	397	Capstone Development	Prepares students for a successful capstone project. Students develop a formal proposal and identify a mentor for the project.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): The Arts BA major; minimum 56 hours
HDA	410	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): HDA 310; Credit is allowed for only HDA 410 or HDA 510
HDA	420	Design & the Arts Business Adm	Design and the arts business seminar course that covers core business principles for design or arts businesses such as human resources, legal issues, accounting and finance. Asks with each of these areas how these disciplines uniquely work within design or arts settings. Investigates global business topics and discusses why ethics is integral to every design or arts business enterprise. Provides a broad understanding of design or arts business activities and practices, allowing more effective participation in business discussions in the future.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Pre-requisites: Minimum 45 hours; Credit is allowed for only HDA 420 or 494 (Design & the Arts Bus Admin)
HDA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		
HDA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-6		Prerequisite(s): Barrett Honors student
HDA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		
HDA	496	Creative Futures: Adv. Studio	Develops advanced skills in creating fully realized design ideas and leading creative ventures, while consciously developing skills in self-analysis, cultural competencies and communication. Through the coursework, readings and projects, students develop new methods and systems of thought for dealing with challenging, complex, collaborative projects. In sequence with a prerequisite course, these courses are designed as a critical "making" component of the BS in Technological Leadership.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3-6		Prerequisite(s): HDA 296 with C or better OR Visiting University Student
HDA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HDA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-3		
HDA	510	Design & Arts Corps Seminar	Explores specific strategies and approaches to socially engaged art practices through readings, visiting artist presentations and direct engagement with community-based projects.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HDA 410 or HDA 510
HDA	511	Purpose, Collab & Accountability	Help students identify their personal purpose and how that connects to arts, culture, design and cross-sectoral work. Also builds capacity for arts and design-based modalities of collaboration that unite people across sectors, art forms, and institutional systems. Addresses hybrid business models, creative facilitation skills, deep listening, co-designing processes and projects, while analyzing the ethics of work aimed at public good outcomes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HDA	512	Proposal Development	Students create a draft proposal for their culminating applied projects, research their chosen topic, make a case for how the project intersects with a gap in the field, and learn how to pitch ideas.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-2		Prerequisite(s): Creative Enterprise and Cultural Leadership MA student
HDA	513	Applied Rsrch & Eval Methods	Working on a real-world project related to art and design in collaboration with a field partner, students learn to construct robust research questions and identify appropriate methods to pursue an area of inquiry. Introduces principles of equitable evaluation and research to prepare students to understand how their work in the broad art and design fields engages with and impacts communities. Explores various methods including qualitative interviews, focus groups, observation and design thinking approaches. Emphasizes understanding how art and design intersect with the converging contexts of place and community, field and discipline, economy and policy.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	514	Creativity & Impact for Change	Art and design work, organizational structures, and collaboration opportunities are expanding. Disrupts frameworks of art and design work to introduce pressing questions and new ways of working aimed at more effective and sustainable engagement with other sectors. Organized around five core themes: context/equity, cross-sector work, changemaking and leadership, structures of work, evaluation and accountability. Discussion is tied to pressing current issues through regular engagements with local and national field leaders, ASU faculty and National Accelerator for Cultural Innovation fellows.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): Creative Enterprise and Cultural Leadership MA student
HDA	521	Counting Arts & Culture	Builds understanding of economic concepts as applied to the arts and culture sector, with specific attention to how art and culture enterprises work as businesses, how such enterprises function in our wider economic system, which are growing and which disappearing (and why), all toward the goal of building the student's capacity to lead arts and culture enterprise in a complex economic environment.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	522	Media Literacy, Distribution	Addresses the impact that digital distribution has had on traditional media business models and the way media and our culture are changing because of it. Also looks at the way in which industries are adapting to this change in the media landscape. Three distinct sections: content literacy, production and distribution metrics, economic and cultural implications.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	581	Emerging Media Colloquium	Focuses on professional and community development outcomes for the graduate programs in emerging media. Students have significant contact with partners and guests from industry and community, are able to discuss and expand their interests and views with their faculty and peers, share and discuss progress on research and professional projects, create a personal professional development plan, and refine and present their portfolio of work for public review. In addition, this course serves as a point of connection between student cohorts and faculty for the purposes of social/community development and wellness.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): Design (Experience Design) MSD or Digital Culture (Extended Reality Technologies) MS student
HDA	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HDA	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HDA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	Dean, Herberger Institute for Design and the Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HEB	101	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
HEB	102	Elementary Modern Hebrew	Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 101 with C or better OR Visiting University Student
HEB	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
HEB	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
HEB	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	201	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 102 with C or better OR Visiting University Student
HEB	202	Intermediate Modern Hebrew	Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): HEB 201 with C or better
HEB	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
HEB	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
HEB	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	313	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): HEB 202 with C or better OR Visiting University Student
HEB	314	Advanced Modern Hebrew	Continues developing speaking, reading, and writing skills in Modern Hebrew, with a focus on different aspects of the Israeli culture studied in literature, cinema, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: HEB 202

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HEB	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
HEB	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
HEB	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
HEB	349	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
HEB	375	Contemporary Culture of Israel	Intense study of aspects of historical, social, political, and cultural modern life in Israel. Beginning of Zionism to present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
HEB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
HEB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HEB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
HEB	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
HED	510	Intro to Higher Education	Overview of American higher education, including philosophical, political, and social aspects.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	527	Seminar: Student Affairs Admin	Organizational models, administrative competencies and skills, and emerging challenges of student affairs administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HED	573	Applied Inquiry in Higher Ed	Provides an overview of research, evaluation and assessment practices in higher education and strategies for utilizing these practices as professionals in higher education. Focuses on learning about and demystifying the process of scientific inquiry, with the intent of translating that knowledge to regular practice in a higher education professional career. It is not a highly technical methods course--no advanced knowledge of statistics or qualitative techniques is assumed--but instead gives practitioners a foundation in educational research design as well as the tools to be literate, thoughtful, critical and frequent consumers of research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): MED Higher and PostSecondary Education major. Credit is allowed for only HED 573 or HED 591 (Applied Inquiry)
HED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	603	Foundation of Data Analytics	How decisions are made in higher education and how data and analytics can support university leaders.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	604	Analytics Process & Technology	Process and technology used to facilitate data-informed decision making in higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	605	Data Management & Preparation	Data preparation and management for data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	606	Advanced Analytic Methods	Advanced analytic methods, including data mining, in support of data-informed decision making in higher education institutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	607	Visualization and Presentation	Principles of effective presentation and visualization of data for exploratory, predictive and persuasive purposes.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	608	Trends Advncd Analytic Methods	Emerging advanced analytic method in use within higher education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; HED 603
HED	620	Diversity in Higher Education	Overview of the demographic profile of college students, faculty, and staff. Addresses issues of access, retention, and development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	634	The American Community College	Philosophy, history, curriculum, faculty, students, organization, financing, research, policy and current issues.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	644	Higher Educ Finance/Budgeting	Financial planning and budgeting in higher education institutions. Issues related to financing public and private colleges and universities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	649	Law & Policy in Higher Ed	Analyzes legal issues related to higher education; examines key court decisions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	679	The American College Student	Overview of American college student from demographic, background characteristics, and values/attitudes/perspectives. Includes access, persistence, and degree completion.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	688	Organizational Theory	Major views of organizations and their influence on role definition and participant behaviors in educational organization.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	689	Leadership in Higher Education	Theory and practice of leadership and administration in higher education institutions.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HEP	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
HEP	102	Foundations of HEHP	Foundational course for those who anticipate working in the health field. Learners gain a broad understanding of historical, cultural and philosophical underpinnings of health promotion. They refine necessary skills for working as health professionals, including effective researching, writing and critical thinking. Explores principles of a preventive approach to health and wellness. Introduces the importance of evidence-based practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HEP	241	Hlth Ed Injury Prevntn & Prep	Unintentional injuries affect people throughout the lifespan. Examining factors that influence injury helps to determine effective education and prevention efforts. Explores strategies for preventing unintentional injuries for adults and children. Examines topics in injury prevention for the development of health promotion resources and practices in the following settings: home, sports, recreational and transportation. Also includes emergency preparedness education focused on helping people prevent and mitigate the effects of emergency/unforeseen incidents at the individual, family and community levels. Specifically, explores the CDC Crisis & Emergency Risk Communication (CERC) program as a tool for developing effective communication strategies regarding emergency situations.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
HEP	251	Preventing HIV&Substance Abuse	Provides an introductory examination of Human Immunodeficiency Virus (HIV), substance abuse and addiction. Explores health education and promotion approaches to preventing both HIV and substance abuse and examines the biological, historical and societal implications of these diseases. Prepares learners to deliver HIV and substance abuse prevention education.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only EXW 351 or HEP 251 (or EXW 312) OR Visiting University Student
HEP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	303	Human Sexuality for Health Ed	Provides preprofessional primary/secondary teachers and health education specialists with knowledge of the physiological, psychological and social aspects of human sexuality for health education. Provides content knowledge and curriculum development strategies to support educators in creating human sexuality curriculum for school and community health settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	348	Methods of Health Education	Covers how to develop sound, effective, appropriate instruction and learner experiences utilizing backwards planning, formative and summative assessment methods, educational psychology, and appropriate instructional methods to facilitate the mastery of health-related knowledge, skills, attitudes and behaviors in health education and health promotion. Focuses on understanding best practice pedagogy and the diverse learner; structuring the learning environment; developing appropriate student learning objectives; selecting appropriate instructional methods; and developing a quality lesson, assessments, presentation and unit plan.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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HEP	350	Substance Abuse&Addict Behav	Examines substance use and abuse patterns throughout the U.S. Explores regional trends, historical influences and policy impacts. Presents effective prevention and intervention practices. Emphasizes the importance of reducing stigma associated with substance use. Learners engage in scientific inquiry and research.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better OR Visiting University Student
HEP	361	Soc Media & Market for Health	Research suggests that social media and social marketing strategies are effective tools for public health education and promotion. Learners explore social marketing practices, examine the impact of social media messaging on health, create health education messages and content, and develop a social media campaign for a specific health or wellness topic. Get ready to use social media technology to promote health and wellness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 321 or HEP 361 (EXW 361) OR Visiting University Student
HEP	371	Conflict & Violence Prevention	Explores conflict mediation and violence prevention interventions. Prepares students to address conflict, deal effectively with difficult people, and incorporate effective conflict management and mediation skills in various personal and professional settings. Examines and applies principles of the public health approach of violence prevention programming.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only EXW 331 or HEP 371 (EXW 371)
HEP	380	Body Image and Wellness	Explores body image in American culture from physical, psychological, historical, and societal perspectives.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
HEP	384	Preinternship for HEHP	Professional development course designed to help students prepare for senior-year experiential learning courses: internships and applied projects. Facilitates strengthening of interpersonal competencies and professional self-marketing through resume development, communication and networking. Prepares students for either the Internship or the Applied Projects course through Internship Learning Agreement or Applied Project Proposal documentation, respectively.	N	LEC	N	YGB	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): College of Health Solutions major; minimum 75 hours
HEP	386	Assess Strength & Need Hlth Ed	Experiential course in which students assess a health issue in their home communities. Students select a health topic on which they focus throughout the course. They conduct a needs and strengths assessment, collecting both primary and secondary data; volunteer for an organization working on the health issue they choose; create a plan to actualize an evidence-based intervention; and develop a mission statement, goals and SMART objectives. The result is a foundational health promotion program plan that may be further developed in a subsequent course.	N	PRA	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): HEP 102 with C or better; minimum 45 hours; Credit is allowed for only HEP 386 or HEP 394 (Health Education and Health Promotion Capstone 1)
HEP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	410	Obesity Persp and Prescrip	Provides a structure for understanding, critiquing and synthesizing the information and misinformation about obesity, weight loss and health. Explores topics: the obesity epidemic; health consequences of obesity; fitness and fatness; etiology of weight gain; health implications of weight loss; psychological, cultural, social and political considerations of obesity; and a review of the application of prevention and treatment of obesity. Examines a wellness perspective about obesity by considering obesity as a normal physiological response within a pathological environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 202 with C or better; PSY 101 with C or better; Credit is allowed for only EXW 510 or EXW 598 (Obesity Perspectives and Prescription) or HEP 410 (EXW 410) OR Visiting University Student
HEP	443	Emotional Hlth & Intrprsnl Rel	Explores factors associated with the development of emotional health and well being. Emphasizes pre-professional primary/secondary teachers and health education specialists teaching and promoting emotional health within a school or community setting. Encourages pre-professional primary/secondary teachers and health education specialists to deepen their commitment to effective curriculum principles related to emotional health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	444	Epidemiology	Introduces epidemiological concepts and prepares the student to read, comprehend, and report epidemiological research.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): any CS statistics course with C or better; Credit is allowed for only HEP 444 or POP 598 (Epidemiology) OR Visiting University Student

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HEP	448	Foundations of School HED	Illustrates health education in K-12 and post-secondary educational settings. Explores various resources for health education specialists, including the CDC's Division of Adolescent and School Health, the School Health Index, the Health Education Curriculum Analysis Tool, and the Coordinated School Health Approach.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HEP	452	Hlth Advcy in HED	Learn how to make change happen to improve health for individuals and communities. Identifies and discusses features of coalitions and partnerships that support advocacy and policy change. Describes and applies methods and resources for advocating in health promotion, including photovoice, positive deviance and digital advocacy. Outlines and practices key strategies for communicating with diverse audiences. Introduces a strengths-based, community-led paradigm for generating systems change.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
HEP	454	Health Promotion Plan and Impl	Applies theory-based concepts and methods of health promotion (HP). Covers selected topics in HP across a variety of domains of health. Program planning concepts include the use of planning frameworks, needs assessments, and the use of theory in health promotion program planning. Also covers practical issues related to health promotion program implementation such as resource management and program marketing.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): CHS 340 (EXW 340) with C or better; ENG 101, 105, or 107 with C or better; HEP 102 (EXW 102) with C or better; Credit is allowed for only EXW 554 or HEP 454 (EXW 454) OR Visiting University Student
HEP	456	Health Promotion Program Eval	Covers program evaluation concepts including how to plan an evaluation, how to analyze and interpret data, and how to report evaluation results. Students learn a basic framework for conducting a program evaluation, various research/evaluation designs, and data analysis and statistics. Topics are covered in enough detail so that the student may understand how inferences are made regarding program evaluation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Pre- or corequisite(s): HEP 454 (EXW 454); Credit is allowed for only EXW 556 or HEP 456 (EXW 456) OR Visiting University Student
HEP	466	Health Prom Mgmt and Admin	Uses team and individual processes to build knowledge and skills for managing and administering health education/promotion programs. Emphasizes management perspectives, professional skill development and demonstrating leadership; performing team collaboration roles; managing human and financial program resources; and developing collaborative research. Aligned with specific competencies and objectives required for Certified Health Education Specialists (CHES) offered by the National Commission for Health Education Credentialing (NCHEC).	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HEP	476	Community Health	Applies major concepts of community health with an emphasis on contextual tailoring. Defines and explores the community science paradigm. Defines and applies cultural competence. Presents features and current trends for health and health care in the U.S., including key policies, family health, minority health and environmental influences. Reinforces the commitment to evidence-based practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): HEP 454 (EXW 454) with C or better OR Visiting University Student
HEP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
HEP	486	Applied Projects in HEHP	Provides an opportunity for self-directed, structured practice in health education and health promotion with faculty support and supervision. Students develop and/or implement a health education and health promotion project of their own design, based on self-identified interests and long-term career plans. Applies specific competencies of health education specialists, preparing students to enter the workforce as confident and practiced health professionals. Requires permission to enroll from the course instructor, based on approval of the applied project proposal prepared during the preinternship course.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): HEP 384; HEP 452 (EXW 452); HEP 454 (EXW 454) OR Visiting University Student
HEP	490	CHES Exam Preparation	Prepares qualifying students for the Certified Health Education Specialist (CHES) examination offered by the National Commission for Health Education Credentialing. Provides a review of the Eight Areas of Responsibility for Certified Health Education Specialists. Increases knowledge of health education and health promotion concepts to prepare for the CHES examination.	N	LEC	N	YGB	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Community Health BS major or HEP 456; minimum 45 hours OR Visiting University Student
HEP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student

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HEP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HEP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HEP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HHE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HHE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Herberger Institute of Design and the Arts Graduate student
HIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HON	171	The Human Event	Landmarks in the social and intellectual development of the human race, with emphasis on critical thinking and argumentative writing. Enrollment restricted to Barrett students.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; maximum 75 hours
HON	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student
HON	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; maximum 60 hours
HON	272	The Human Event	Covers the Renaissance through the modern period.	N	LEC	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	(L or HU) & H	Prerequisite(s): HON 171 with C or better
HON	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
HON	370	History of Ideas	Advanced and intensive survey of key social and intellectual currents in the development of humanity as reflected in both philosophical and creative works with an emphasis on critical thinking and discussion, as well as argumentative writing.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	L or HU	Prerequisite(s): Barrett Honors student; Credit is allowed for only HON 171 or HON 272 or HON 370
HON	378	Culture/Soc England, Ire, Scot	Chronologically explores texts, events, and sites for historical and cultural impact on development of England, Ireland, Scotland, and their countries' relationships with each other.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & H & G	Prerequisite(s): Barrett Honors student
HON	379	Romantics, Victorians, Moderns	Examines the development and impact of various literatures, arts, and ideas in England, Ireland, and Scotland from the Romantic through the Modern period.	N	SEM	N	OPT	Barrett, The Honors College	Barrett, The Honors College	3	HU & G	Prerequisite(s): Barrett Honors student
HON	380	Aesthetics and Society	Advanced, interdisciplinary seminar explores the unique roles of aesthetics in society through philosophy, cultural studies, art, music, literature, film, and/or other media forms, with themes such as the politics of beauty, art and emotion, or creative production and reception.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3	HU	Prerequisite(s): Barrett Honors student; HON 171; HON 272 (or HON 273 or 274) or HON 370 or HON 394 (History of Ideas); Credit is allowed for only HON 380 or HON 394 (Aesthetics and Society)
HON	381	Science and Social Worlds	Advanced multidisciplinary seminar examining the historical, cultural and political roles of science in society, including the politics of scientific knowledge production, the ethics of new technologies, and philosophical approaches to the study of health and medicine.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 171 and 272 (or HON 370 or 394: History of Ideas); Credit is allowed for only HON 381 or 394: Science and the Self
HON	386	Writing about Self and Place	Cultural curiosity and literary expression align in intellectually provocative ways that deepen our understanding of the interplay between self and place. Examines the ways in which conceptions of individual and national identity and cultural environments inform each other. Students read and analyze modern travel writing to learn literary strategies that they then employ when reflecting upon and documenting their experiences as individuals studying the culture of a place. Learning activities include engaging with a variety of creative nonfiction writing and creating personal narratives.	N	SEM	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): Barrett Honors student; HON 370 OR both HON 171 and 172; Credit is allowed for only HON 386 or HON 394 (Identity and Place) or HON 394 (Writing about Self and Place)
HON	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; minimum 30 hours

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HON	447	Lean Launch	Students learn lean and customer development methodologies to test assumptions made about a new business concept that they wish to explore or launch. Teaches how to effectively utilize business models and critically assess the assumptions made through the testing of hypotheses to create innovative and market-ready ventures. Includes weekly presentations of learning points and team activities outside of the classroom. Open to students in any major of study with the required prerequisite.	N	LEC	N	GNA	Barrett, The Honors College	Barrett, The Honors College	3		Prerequisite(s): W.P. Carey BA or BS major; ACC 241, 242, or 271 with C or better OR non-Business student with minimum ASU 2.50 GPA; minimum 56 hours; Credit is allowed for only ENT 447 (or MGT 447) or HON 447 or MGT 494 (Lean Launch)
HON	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	0-12		Prerequisite(s): Barrett Honors student
HON	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Barrett, The Honors College	Barrett, The Honors College	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; minimum 75 hours
HON	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student; minimum 45 hours
HON	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-6		Prerequisite(s): Barrett Honors student
HON	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-7	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HON	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Barrett, The Honors College	Barrett, The Honors College	1-3		Prerequisite(s): Barrett Honors student
HPS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	311	Origins, Evolution, Creation	History of opposition to evolutionary thinking with special reference to American creationism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is only allowed for BIO 344 or HPS 311
HPS	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
HPS	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
HPS	322	History of Science I	Development and application of scientific thinking from ancient times through the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 328 or HPS 322 OR Visiting University Student
HPS	323	History of Science II	Development and application of scientific thinking from the 18th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 317 or HPS 323 OR Visiting University Student
HPS	330	Hist Bio:Conflicts&Controversy	Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	H	Credit is allowed for only BIO 316 or HPS 330 OR Visiting University Student
HPS	331	History of Medicine	Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	HU & H	Credit is allowed for only BIO 318 or HPS 331 OR Visiting University Student
HPS	332	The Darwinian Revolution	Origin, nature, and subsequent history of the ideas of Charles Darwin.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		
HPS	336	Exploration and Science	500-year survey of exploration as a historical process and cultural activity of Western civilization, with emphasis on its links with modern science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SB & H	
HPS	340	Biology and Society	Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR BIO 281 with C or better; BIO 282 with C or better; Credit is allowed for only BIO 311 or HPS 340 OR Visiting University Student

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HPS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
HPS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	410	Biomedical Research Ethics	Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only BIO 416 or HPS 410 OR Visiting University Student
HPS	452	Philosophy of Bio & Medicine	Examines fundamental topics in the philosophy of biology and their implications for medicine. Examples include biological mechanisms and evidence-based medicine, species concepts and race, reductionism and the nature of individuality, and theories of function and health. Uses these topics throughout the semester to address two overarching questions about whether biology is fundamentally different from physics and whether medicine can be reduced to applications of biology.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only BIO 452 or HPS 452 or PHI 452 or BIO/HPS/PHI 394 (Philosophy of Biology and Medicine Introduction) or BIO/HPS/PHI 494 (Philosophy of Biology and Medicine) OR Visiting University Student
HPS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
HPS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
HPS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HPS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
HPS	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Pre-requisite: Junior or senior standing
HPS	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
HPS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
HPS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
HPS	516	History of Biology	Covers themes such as the voyages of discovery, systematics, and classification; morphology and embryology; Darwin and evolutionary biology; the rise of genetics; molecular and organismal approaches of post-WWII biology; recent history of biology.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only BIO 518, HPS or HST 516
HPS	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HPS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	615	Biology and Society Lab	This course brings together graduate students, postdocs, and faculty members in biology and society. Sessions include panel discussions of biology and society topics from multiple perspectives, student-led discussions of important literature, practice presentations of papers for national meetings, discussion of dissertation and thesis ideas, and other activities that help to forge an active intellectual lab group.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 615 or HPS 615
HPS	620	Research Prospectus Writing	Workshop-style course where students develop and peer review graduate-level project prospectuses, such as those for NSF grant proposals, journal articles, theses, and dissertations. Appropriate for graduate students in Biology and Society, History and Philosophy of Science, the life sciences, and related programs.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 620 or BIO 620
HPS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HPS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HRC	200	Intro:Social/Cultural Analysis	Introduces social and cultural analysis. Focuses on key terms and analytical categories for interdisciplinary work in social and cultural analysis and related fields such as American studies, ethnic studies, women and gender studies and Latin American studies. Examines a range of forms of oppression and privilege from a social justice perspective.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	
HRC	310	Social & Cultural Stds/Theory	Covers how scholars in social and cultural studies think, argue, research and write. Traces the changing definition of fields such as American studies, ethnic studies, and women and gender studies. Studies these fields in relationship to 20th-century social movements and related theoretical categories including Marxism, cultural studies and class; feminism, gender and sexuality; and post-Colonialism, race and ethnicity. Covers basic archival and ethnographic research techniques underlying interdisciplinary research methods in these fields.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 36 hours OR Visiting University Student

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HRC	480	Capstone: Practices/Approaches	Examines theoretical, methodological and epistemological issues in American studies, women and gender studies, and ethnic studies. Studies a wide variety of interdisciplinary theories, methodologies and epistemologies from an intersectional analysis of race, class, gender and sexuality in national and transnational contexts. Places special emphasis on historical definitions and debates on the relationship among theory, activism and praxis.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L	Prerequisite(s): AMS 201 or ETH 100 or HRC 200 or WST 100; ENG 101, 105, or 107 with C or better
HRC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
HRC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HRC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
HSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	210	Cultural Aspects Health	Examines how culture influences health, health care practices, barriers to health care, interactions with health care professionals, and health disparities in the U.S. Addresses the need for cultural competence among health practitioners.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	C	
HSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	300	Complementary Health Care	Evaluates the major components of complementary and alternative health care models and evidenced-based recommendations related to complementary health care.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
HSC	310	Health Communication	Focuses on communicating topics related to health through an examination of theoretical frameworks, communication techniques, and different technologies including ehealth and mhealth. Addresses communication through channels that promote the health of individuals and communities. Topics may include clinician to client communication, peer to peer communication, health literacy, health in the media, and effective public health communication.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HSC	340	Changing Health Behaviors	Comprehensive review of the theoretical bases of health behavior change. Students gain the knowledge to identify behaviors associated with optimal health and wellness and to develop theory-based intervention strategies and techniques to effectively influence behavior change.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prereq(s): Comm Hlth or Exer & Wellness or Hlth Sci or Hlth Sci (Hlthy Lifestyles Coach) BS major or Hlth Wellness Coach cert stdnt; min 30 hrs; Credit allowed for only CHS 340 (EXW 340) or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
HSC	355	Eating for Lifelong Health	Examines dietary choices throughout the life span and how they impact personal health and wellness. Raises awareness of thoughts and behaviors related to food and physical activity. Recognizes potential behavioral and social factors that impact participation in wellness programs. Evaluates the accuracy of consumer materials related to nutrition and wellness.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
HSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	400	Practicum in Health Sciences	Supervised experience in area of student specialization. Students are placed with an agency, organization, business, and/or facility that meets their specific academic goals.	N	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Health Sciences Senior student
HSC	410	Support Health Older Adults	Focuses on community and national policies and programs that affect the health of older adults, programs to improve access to health care as well as to improve overall health, issues related to family and professional caregiving, and future challenges related to caring for older adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HSC	412	Health Issues in Later Life	Focuses on health issues that primarily affect adults ages 50 years and over as related to nutrition, physical activity, environmental toxins. Focuses on exploring those factors known to promote healthy aging.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
HSC	420	Eval Health Sci Res	Investigates methods of inquiry in health sciences and techniques for critiquing and interpreting research within the context of evidence-based practice.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): POS 401 (or PSY 230 or 231 or SOC 390 or STP 226 or 231 or 420) OR Medical Studies major with HCD 300 (or HSC 320)

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HSC	432	Legal Issues in Health Care	Legal doctrines provide protection of consumers, health care providers, and health care institutions with regard to health care delivery including access and cost. Provides an overview of the legal obligation and rights of private and public stakeholders in the delivery and receipt of health care services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSC	440	Health Coaching	Health coaching techniques and skills for health promotion professionals with emphasis on the practical application of brief intervention and motivational interviewing skills to promote healthy lifestyle changes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): CHS 340 (EXW 340), EXW 342, HSC 340, or NTR 350; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills) OR Visiting University Student
HSC	441	Health Coaching Techniques	Complements previously learned coaching theory, skills and techniques related to guiding individuals and groups through meaningful lifestyle changes by emphasizing the use of evidence-based coaching approaches. Using a mentor, self-assessment and peer feedback model, students practice, compare and contrast diverse coaching methodologies emphasizing motivational interviewing techniques and cultivating their coaching voice. Students are assigned coaching clients, schedule coaching sessions, follow-up with clients, practice professional boundaries setting, become acquainted with ethical issues and referral processes, and validate their knowledge and skills when working with people with chronic disease who require lifestyle management strategies to improve their conditions. Program faculty provide mentorship and feedback regarding student's coaching performance.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): HSC 440; Pre- or corequisite(s): EXW 325 or 335; EXW 344; HSC 355 (or NTR 355); NTR 241 OR Visiting University Student
HSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; minimum junior standing
HSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
HSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
HSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
HSC	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
HSD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		
HSD	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	501	Science & Technology Policy	Covers the role and nature of science and technology in democratic societies, and how policy impacts their development, use and potential risks and benefits. Addresses the history of science and technology policy in the U.S. and how science-based research and innovation are integrated into the design and implementation of government decision making. Students study the history and actions leading to the formation of a science and technology-related policy of their choice. Drawing on multiple areas of expertise, the course emphasizes the need for novel yet informed approaches to science and technology policy in today's rapidly changing world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	502	Adv Science &Technology Policy	Explores innovation systems; the relationship between science and technology policy, equity and equality; the theory and practice of policy implementation; the utility of public value mapping; and the nature of technological fixes. Begins to explore the policy challenges and opportunities presented by emerging and converging technologies, and a changing governance and geopolitical landscape. Students study the implementation of a specific previously selected science and technology policy. Brings a transdisciplinary approach to science and technology policy that is uniquely relevant to today's increasingly technologically complex world.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): HSD 501 with B or better
HSD	503	Governing Emerging Technolog	Examines the governance of science and technology through a focus on emerging technologies whose potential consequences in society are apparent only in anticipation and whose manifestations are still being shaped by local, domestic, and international institutions. These emerging technologies include nanotechnologies, synthetic biology, and other technologies associated with genetic modification, and information and cognitive science and neuro-technologies.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	504	Socio-Technological Systems	Provide skills and methods to analyze the design and management of large-scale socio-technological systems and the societal impacts of large-scale technological systems change. Emphasizes assessing the intertwining of lives and livelihoods in large-scale technological systems and the risks and vulnerabilities associated with large-scale systems failures, including the effects of both technological failures and natural hazards.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	505	Sci &Tech Policy Workshop	Provides the capstone experience for the Professional Science Master's in Science and Technology Policy. Builds on theoretical and analytical work carried out in the program's required courses, providing an integrative experience that requires students to synthesize knowledge gained in prior coursework and apply it to real-world policy problems and settings. By blending exposure to national science and technology policy officials and nationally recognized academic experts, the workshop both advances student learning beyond that possible in the classroom while encouraging students to expand their abilities to connect theoretical and practical insights. At the same time, the workshop provides a natural transition from the student's formal classroom learning to their required applied policy internships, which commences upon the end of the workshop.	N	SEM	N	YGB	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	512	Solar Energy Policy Workshop	Successful and rapid development of solar energy requires the training of a highly skilled technical workforce that is also well versed in the socioeconomic (e.g., social, economic, behavioral, policy) and commercial aspects of solar energy. Provides practical policy experience. Explores the relationships among science, policy and societal outcomes in a place where many important decisions about these things are made: Washington, D.C. During the one-week course, students meet and interact with the people who fund, regulate, shape, critique, publicize and study solar energy and science, including congressional staffers, funding agency officers, lobbyists, regulators, journalists, academics, museum curators, and others.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): Solar Energy Engineering and Commercialization PSM student; Credit is allowed for only HSD 512 or HSD 594 (Solar Energy Policy Workshop)
HSD	515	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516

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HSD	517	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
HSD	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HSD	521	WrtingTrue Stories that Matter	Researchers, policy wonks, grant writers, program managers, aspiring politicians, decision makers and writers of all ages: Everyone needs to know how to find and write a strong, effective, true story. This course helps students and professionals transform research, experiences and ideas into compelling nonfiction narratives so that readers are both educated and entertained. In this semester-long workshop, the instructor proceeds, step-by-step, through the entire writing true stories process, from finding the story to recreating scenes and building a scene-by-scene structure that is informative and cogent. Participants learn how to read with a writer's eye and recognize and utilize structural patterns. Explains, illustrates and practices literary techniques like dialogue, flash descriptions, inner point of view, and the art of imbedding information in story.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSD 521 or COM 598 (Writing True Stories That Matter: Creative Nonfiction) or HSD 598 (Writing True Stories That Matter: Creative Nonfiction)
HSD	540	Responsible Innovation & Rsrch	Movements throughout Europe and increasingly the U.S. are beginning to consolidate the recognition of the profound effects that research outcomes have upon the world under the idea of responsible innovation and research. The responsible innovation and research pushes beyond the responsibilities of the individual researchers and addresses larger issues such as research agenda setting, management of large-scale research and innovation enterprises, funding priorities and innovation as a national policy priority. Explores the idea of innovation as a national policy; the practical and theoretical underpinnings of responsibility in the research world; the history, current state and future trajectories of responsible research and innovation. Focuses on the current literature in the field.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		
HSD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSD	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	601	HSD I:Human Dimension Sci Tech	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	602	HSD II:Science Power&Politics	Interdisciplinary synthesis, theoretical foundations, and methods for humanistic and social science research on science and technology.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	610	Colloquium	Regular meeting for the entire HSDST community. Includes outside speakers, student and faculty member presentations, and community discussions.	N	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSD	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	101	Human Systems Engineering	Introduces basic principles, methods and theories of psychology and applications to engineering problems relevant to human systems. Gives particular attention to the intersection of psychology and engineering. Students learn brain anatomy and physiology, sensation and perception, cognition, social systems and research methods so that they are able to design systems consistent with human capabilities and limitations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	

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HSE	223	Applied Biology Human Behavior	Introduces the biological basis of human behavior and implications for human systems engineering. Structure and function of the nervous system as well as the behavioral effects of the physiological processes outside the brain (for example, hormones secreted by glands). Biological processes involved in many aspects of our behavior such as eating, sleeping, sexual behavior, emotional responses, sensory perception, learning and memory, language and cognitive functions, mental illness and drug abuses. Introduces a wide range of techniques and methods used to investigate the biological foundations of behavior. Prepares students for advanced courses in neuroscience, psychology or related fields.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	224	Applied Social Science	Covers social behaviors, social cognition and emotion critical for engineered systems that interact with humans (artificial intelligence, robots). Students learn how human beings behave, think and feel in daily social situations and think about how that information can be used to create effective human systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	225	Human Systems Integration	Reviews human systems integration (HSI), which is basically systems engineering from a human-centered perspective. Research, theory and methodological approach as applied to a variety of systems ranging from transportation systems to medical and military systems. Discusses handbook chapters and specific examples of human systems integration.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	230	Stats Human Systems Rsrch I	Basic methods of exploratory data analysis (including graphics) and statistical computing methods, including a detailed look at hypothesis testing, effect size and power analysis, as well as some methods for dealing with categorical and discrete data. Introduces both correlation/regression and analysis of variance (ANOVA), as well as common statistical software.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 101 or PSY 101 with C or better; MAT 117 or higher with C or better OR Visiting University Student
HSE	290	Exp Method Human Systems Rsrch	Introduces the basics of research methodology as applied in human systems engineering. Quantitative and experimental design from an applied perspective. Guided study of the process of conducting research within human systems engineering. Project topics range from research question generation and literature review to reporting of results.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; HSE 230 or PSY 230 with C or better OR Visiting University Student
HSE	323	Perceptual Systems	In-depth exploration of methods by which humans receive and interpret information from the world by vision, audition, taste, smell, touch and movement. Emphasizes the integration of behavioral and neural research with potential applications to engineering practice. Topics cover a wide range from the biological basis of sensory information processing to the behavioral aspects of perception, and to the applications of perceptual theories to disciplines like computer vision, display technologies, graphic design and sound processing. Solid foundation for further coursework and research in neuroscience or psychology; students also gain knowledge that could be useful in various professions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing
HSE	324	Applied Cognitive Science	Human cognition and how it bears on the design of technological and social systems. Although focuses on applications, requires student to delve into the basic literature that informs these applications and produce a literature review that draws on both applied and theoretical work. Many weeks involve a hands-on experience with a method or technique, and weekly quizzes emphasize critical thinking about these examples.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	SB	Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	325	Human-Computer Interaction	Theories, methods, and findings concerning the usability of computer systems and the design of effective user interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better OR Visiting University Student
HSE	390	Qualitative Research Methods	Reviews basics of qualitative research with applications to human systems engineering. Covers fundamental concepts of reliability and validity, and considers best practices in survey, questionnaire, interview and observation methods. Introduces and applies content analysis and grounded theory approaches for analyzing and interpreting qualitative data (e.g., interview transcripts and open-ended survey responses). All concepts are taught with an applied focus and real-world examples.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; HSE 290 or PSY 290 with C or better OR Visiting University Student
HSE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours

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HSE	422	Human Factors in Sport	Examines how psychological principles can be applied to enhance the performance of athletes and coaches.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	423	Human Factors/Transportation	Examines human performance and human-machine design issues in aviation and ground transportation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	424	Human Automation Interaction	Current perspectives and techniques for modeling human-automation interaction to improve system design and system integration. Topics discussed include basic principles in human-technology interaction, key concepts to consider when designing and assessing supervisory control automation, and promising approaches for integrating increasingly autonomous automation, such as adaptive algorithms and embodied agents, into human systems.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing; Credit is allowed for only HSE 424 or HSE 524 OR Visiting University Student
HSE	425	Human Factors in Med Systems	Comprehensive introduction to human factors issues related to healthcare systems, medical training, and medical device design. Topics range from psychological and physiological aspects of human behavior like perceptual and cognitive functions, motor behavior, learning, motivation, physiology, and ergonomics to applied issues in the context of medicine and healthcare like human-computer interactions in medical information systems, the ergonomic design of medical devices, evaluation of medical device usability, team training in healthcare and the organization of medical environment.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing; Credit is allowed for only HSE 425 or HSE 525 OR Visiting University Student
HSE	426	Training and Expertise	Reviews principles and features of expertise and the acquisition of skilled performance, such as knowledge, deliberate practice, self-regulation, feedback and training. Discusses and applies methods of evaluating expert performance (e.g., cognitive task analysis) and designing effective training systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	427	Designing for Learning	Reviews principles of learning with applications to human systems engineering. Covers fundamental cognitive, metacognitive and motivational aspects of learning, and their applications in instructional design frameworks. Applies concepts to the design of multimedia instruction, educational technologies and similar learning resources.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	428	Judgment and Decision Making	Reviews basic principles of human judgment and decision making with applications to human systems engineering. Covers "intuitive" vs. "rational" ways of thinking, heuristics and common biases (e.g., correspondence bias, self-serving bias). Also covers examples of effective thinking such as intelligence, creativity, transfer and relational reasoning. All concepts are taught with an applied focus.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	429	Product Design and Evaluation	Applies human systems engineering methods to product design and evaluation. Consumer behavior, consumer research methods, systems and design thinking, how to conduct interviews, observational research, contextual analysis, questionnaire design and analysis, opportunity identification, usability testing and creativity.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): HSE 101 or PSY 101 with C or better; minimum junior standing OR Visiting University Student
HSE	430	Stats Human Sys Research II	Statistical methods commonly used in human systems engineering research. Emphasizes (1) connecting research designs and statistical analysis, (2) interpreting and breaking down significant effects, (3) addressing practical problems associated with doing research in applied contexts, (4) using statistical methods to understand the connection between variables in a complex system, and (5) the use of statistical software. Primarily focuses on analysis of variance (ANOVA) but introduces other techniques (including mediation analysis, structural equation modeling and cluster analysis). Recommended for preparation for both graduate study and careers in related industry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3	CS	Prerequisite(s): HSE 230 or PSY 230 or PSY 231; Credit is allowed for only HSE 430 or PSY 530 OR Visiting University Student
HSE	477	Human Systems Engr Capstone	Applied psychology from a systems perspective. Requires a report based on research and/or applied work as a culminating experience.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): Human Systems Engineering major; senior standing; Pre-corequisite(s): HSE 290 or PSY 290; HSE 324 or PSY 324
HSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		

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HSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6		Prerequisite(s): Barrett Honors student
HSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
HSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
HSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-3		
HSE	520	Methods Tools App Cognitiv Sci	Provides a hands-on approach to understanding and using advanced methodologies commonly implemented in the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	521	Methods & Tools Human Sys Engr	Specific methods and tools used in the field of human systems engineering, with computer-based experience through both writing and using human factors tools and software.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	524	Human Automation Interaction	Covers different perspectives and techniques for improving automation design and system integration. Covers basic principles in human-technology interaction, key concepts in supervisory control automation, and promising approaches for increasingly autonomous automation such as adaptive algorithms and embodied agents (robots). Emphasizes literature review, concept synthesis and communication skills through writing, in-class presentations and in-class discussion.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 424 or HSE 524
HSE	525	Health & Human Systems Eng	Covers different perspectives and techniques in medical human factors and health systems engineering to improve system design and system integration in healthcare. Covers basic principles in human-technology interaction, macroergonomics, and job design in the context of healthcare, health organizations, and health technologies. Emphasizes synthesis of reading materials, problem scoping and communication skills through writing and discussion.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 425 or HSE 525
HSE	530	Intermed Stats Human Sys Engr	One-way and factorial designs, contrasts, post-hoc tests, probing of interactions, mixed designs, power, computer applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or HSE 598 (Statistics for Human Systems Research III) or PSY 530
HSE	531	Data Analytics	Principles and methods of analyzing human subjects data. Improves analytical and communication skills for scientific research; acquires and develops skills in using the open-source statistical computing platform R; and builds confidence in wrangling, analyzing and visualizing human subjects data.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 531 or HSE 598 (Data Analytics)
HSE	540	Found Applied Cognitive Scienc	Provides a critical background in the theory and organization of the field of cognitive science.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	542	Foundations Human Sys Engr	A wide variety of methodologies utilized by and applications of the broad field of human systems engineering.	N	SEM	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
HSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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HSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Human Systems Engineering	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	502	Business of Health Care	Acquaints students with the various organizations and actors across the value chain of health care. Assesses provider, supplier, payor and IT multiple perspectives. Exposes the major concepts needed to understand the health sector globally (key business and clinical functions). Students emerge being able to be dropped down into a conversation about a health care company or problem and understand a large proportion of what is being discussed.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HSM	506	Managing Health Care Orgs	Examines the dynamics within health care organizations. Provides a deep-dive into the best practices and key considerations for health care managers as they seek to operate within and modify their organizations. Employing concepts from organizational behavior and systems theory, provides students with a framework to define and resolve operational challenges associated with the management of a health care organization. Asks students to think as senior manager or consultants and propose solutions that are evidence based, feasible and demonstrate knowledge of the key contingencies associated with the context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	512	Healthcare Economics	Economics of production and distribution of healthcare services, with special emphasis on the impact of regulation, competition, and economic incentives.	N	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): HSM 502 with C or better

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HSM	550	Health Care Marketing	Marketing is a set of processes, relationships and co-creations meant to create, communicate and deliver value to the customer. Takes a customer-centric approach to health care marketing. Examines the changing roles in health care, organizations' approaches to patient-centricity, patient empowerment, responsibilities and experience. In addition, considers patient metrics such as patient engagement, customer effort, net promotion and patient satisfaction measures used by the U.S. government's Centers for Medicare and Medicaid Services. Considers marketing from the patient/provider, organizational and network/system points of view, organizational buying and selling processes, and the development and navigation of health care networks/systems from a marketing organization, service provider's and customer experience perspectives.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	552	Supply Chains in Health Care	Examines the variety of organizations that constitute the health sector value chain with an emphasis on suppliers, distributors, IT intermediaries, group purchasing organizations, regulatory bodies, and payers. Key considerations include the design of stakeholder relationships along the value chain and the extent to which business and clinical considerations drive decision making and influence outcomes. Topics include strategic sourcing and contracting, stakeholder incentives and risk across the value chain, physician/professional perspectives and the management of the value chain relationships necessary to achieve high quality, ethical behavior and safe patient care.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSM 552 or HSM 598 (Healthcare Supply Chain Management)
HSM	575	Strategy in Health Care	Problems with health care quality, access and costs bedevil all countries. Focuses on the creation of global business innovations in health care that can better meet these needs. At its end, students should understand the opportunities for different kinds of health care innovations and how to create viable strategies and business models to meet them. Enables students to craft business models that attain alignment between an entrepreneurial health care venture and the Six Factors that shape this sector: financing, structure, public policy, consumers, technology and accountability. Covers these issues in every part of the sector, including insurance, services, IT, medical devices, biotechnology, diagnostics and pharmaceuticals.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Economics	3		Prerequisite(s): W. P. Carey MBA student
HSM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	100	Global History to 1500	Surveys human origins; early civilizations in Africa and Eurasia; the ancient Mediterranean; the pre-Columbian Americas; the rise of Islam and Muslim empires; medieval Europe; the Indian sub-continent and imperial China, to 1500.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	
HST	101	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
HST	102	Ancient Mediterranean/Europe	Origins and development of European societies and institutions from the ancient world through the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	103	Early Modern Europe	The development of European societies and institutions from the Renaissance and Reformation through the Age of Enlightenment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	104	Modern Europe: French Rev-EU	The development of European societies and institutions from the French Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	106	Asian Civilizations	Civilizations of China, Japan, and India from antiquity to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	
HST	108	Introduction to Japan	Historical survey of the people, culture, politics, and economy of Japan, supplemented by audiovisual presentations. Intended for nonmajors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	
HST	109	United States to 1865	Growth of the Republic from colonial times through the Civil War period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	
HST	110	United States Since 1865	Growth of the Republic from the Civil War to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST or REL 111

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HST	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Credit is allowed for only HST, POS 112 or HST 194 (Foundations of Democracy)
HST	113	US and AZ Social Studies	Introduces American (including Arizona) institutions integrating geography, government, history and economic perspectives.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Credit is allowed for only GCU 113 or HST 113 OR Visiting University Student
HST	114	World Social Studies	Introduction to the world from the integrated social science perspectives of history, geography, and government.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Credit is allowed for only GCU or HST 114
HST	130	The Historian's Craft	Introduces the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed; Credit is allowed for only HST 141 or RUS 141 or SLC 141 OR Visiting University Student
HST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
HST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
HST	203	Historical Theme Latin America	General introduction to selected themes in Latin American history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	
HST	204	Historical Themes in the US	General introduction to selected themes in United States history. May be repeated for credit when topics vary.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
HST	210	American Social History	American society from the colonial period to the present. Ethnicity, race, age, and sex as factors in historical experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Credit is allowed for only HST 211 or JST 211 or REL 211
HST	214	World's Game:Hst & Ctr Soccer	Provides a survey of the cultural significance and global reach of soccer, both historically and in contemporary culture. Students study materials from around the world in several mediums; they view films that explore the cultural impact of the game; read literary works that focus on soccer; and engage with scholarly articles and contemporary news media dedicated to the game. Provides a comprehensive sense of the history, personalities, rivalries, fandom, and even the finances and scandals related to the world's game.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): Credit is allowed for only HST 214 or HST 294 (The Beautiful Game: History & Culture of Soccer) or SLC 214 or SLC 294 (The Beautiful Game: History & Culture of Soccer)
HST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
HST	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
HST	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
HST	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
HST	280	Hist Science Ideas Innovation	Fast-paced introduction to the intertwined histories of science, ideas and technological innovation, as they shape the globe from the ancients to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
HST	300	Experience America Modern Wars	Surveys the history of America's wars, military and veterans from the American Revolution through today. Also exposes how American society has understood the role of the military and those who served, both during and after their service in American wars.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student

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HST	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
HST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
HST	303	Studies in Asian History	Specialized topics in Asian history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
HST	305	Studies in Latin Amer History	Specialized topics in Latin American history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student
HST	307	Studies in African History	Specialized topics in African history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	308	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
HST	309	Exploration and Empire	Surveys European discovery, exploration, and imperialism in the early modern and modern periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	310	Film as History	In-depth study of moving image media as recorder, object, and writer of history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	312	Hist of Women in Sci and Med	In-depth inquiry into the history of gender issues in Western science and medicine from Greco-Roman antiquity through the beginning of the 21st century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	314	Am Cultural History Since 1865	Culture, including ideas, ideals, the arts, and social and economic standards, from the age of industrialism to modern U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only AMS 321 or HST 314 OR Visiting University Student
HST	315	Political History of the U. S.	American political history since independence, focusing post-1865. Evaluates major trends in issues, presidential leadership, elections, and state politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	316	20th-C U.S. Foreign Relations	U.S. relations with foreign powers from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student
HST	318	History of Engineering	The history of engineering from the earliest record to modern times, examining the social, cultural, and economic effects on society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 45 hours OR Visiting University Student
HST	319	History of Aviation	The history of aviation, focusing on technical, political, economic, social and cultural aspects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only HST 319 or HST 306 (Aviation History) OR Visiting University Student
HST	320	U.S. Urban History since 1850	History of the city in American life from the mid-19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student

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HST	321	Constitutional History to 1865	Origin and development of the American constitutional system from colonial period through the Civil War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	322	Constitution Hist/US Since1865	Development of the U.S. constitutional system from Reconstruction to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	
HST	323	Hstrol Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
HST	324	Lat Am Food: Pol,Econ,Clt,r,Soc	Uses food as a critical lens for studying Latin American culture and history and looks at how the evolution of human development, and especially the food that we eat, is influenced by social, political and economic context. Studies the production and commodification of food in Latin America, and its globalization. Also covers how Latin American cuisine sheds light on the formation of cultural identity and perceptions of nationalism	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 305 (Food) or HST 324 or LAS 324 OR Visiting University Student
HST	325	Immigration & Ethnicity in US	Origins, historical development, and future of a multiethnic society, 1492 to 2050.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	326	Global History: Slave Trade	Reading- and writing-intensive course that employs critical thought to look at the origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 or HST 109 or minimum 45 hours; Credit is allowed for only AFR 305 (or AFH 305) or HST 326 OR Visiting University Student
HST	327	Women in US History 1600-1880	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	328	Women in US History, 1880-1980	Historical discussion of American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	329	Women in 20th-Century US West	Nuanced exploration of how women of various cultures have contended for and shaped the U.S. West, including the West of imagination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	330	Historical Thinking	Advanced examination of the ways historians ask questions and propose answers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 130 or HST 330 OR Visiting University Student
HST	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
HST	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student
HST	333	African American Hist to 1865	In-depth examination of African Americans' roles in American history, thought, and culture from slavery to 1865.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 363 or HST 333 OR Visiting University Student
HST	334	African Amer Hist Since 1865	In-depth examination of African Americans' role in American history, thought, and culture from 1865 to present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only AFR 364 or HST 334 OR Visiting University Student
HST	335	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
HST	336	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student

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HST	337	Amer Indian History to 1900	Cultural, economic, political, and social continuity and change of American Indian communities to 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	338	Amer Indian History since 1900	Cultural, economic, political, and social continuity and change of American Indian communities from 1900 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	339	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
HST	340	American Military History	Studies the role of the military in American life during war and peace from colonial times to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	341	U.S. West 19th Century	Social, political, and economic development of the trans-Mississippi West, beginning with the Louisiana Purchase and ending in 1900.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 341 or HIS 320
HST	342	US West 20th Century	Role of the western states in U.S. history since 1890 emphasizing politics, the environment, industry and labor, and ethnic minorities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	343	American Southwest	Development of the region from 1848 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	344	Arizona	Emergence of the state from early times to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours
HST	345	Environmental History	Examines the interaction between humans and the natural world in the United States from the late 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better OR Visiting University Student
HST	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
HST	347	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
HST	348	Rome	History and civilization of Rome from the beginning of the Republic to the end of the Empire.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	349	Early Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 5th through 10th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	350	Later Middle Ages	Political, socioeconomic, and cultural developments of Western Europe from the 11th through 15th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	351	Renaissance Europe	Culture of the Renaissance in Italy and Northern Europe from the 14th to the early 16th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	352	Europe's Reformations	Causes and implications of the major Protestant, Catholic, and Radical religious reformations in 16th- and 17th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	353	Old Regime in Europe	Society and culture of Europe during the 17th and 18th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	354	Revolutionary Europe	Political, social, economic, and intellectual currents in Europe from the French through the Russian Revolutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	355	Total War and Crisis-Modernity	Forces of change and instability in early 20th-century Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	356	Europe since 1945	Europe in its world setting since World War II, emphasizing major political and social issues from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	357	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391

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HST	358	Jewish History from Antiquity	Continuity and change in political, legal, economic and sociocultural history of the Jews from ancient through medieval times.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	359	Jewish Hist from 1492 to 1948	Jewish history from early modern through modern times, highlighting emancipation, enlightenment, and Jewish responses to modernity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	360	The Crusades	Examines the origins, the development, and the outcomes of the movement that we call "crusades" by connecting the military aspect of the crusades to broader developments. Focuses primarily, but not exclusively, on the period 1095-1453. Geographically covers chiefly the Mediterranean, and, to a lesser extent, northeastern Europe.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 360 or HST 394 (Crusades in the Middle Ages) OR Visiting University Student
HST	361	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
HST	362	Sex&Society-Classical&Med Euro	Family life, sex roles, and marriage, and their relationship to political, economic, and religious change in classical and medieval Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	363	Sex&Society-Early Mod Europe	Family life, sex roles, and marriage and their relationship to political, economic, and religious change in early modern Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	364	Sex & Society in Mod Europe	Family life, sex roles, and marriage, and their relationship to political, economic, and social changes in modern Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	365	WW I & II: Europe's East Front	In-depth study of the history of the Eastern Front in Europe in the two world wars.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105 or ENG 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 365 or HST 394 (WWI and WWII Eastern Front)
HST	366	England to 1689	In-depth examination of the political, economic, and social development of the English people to the late 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	367	Modern Britain	In-depth examination of the political, economic, and social development in Britain from 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	368	Culture & Imagination/Eur Hist	Topics in European cultural and intellectual history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
HST	370	Eastern Europe in Transition	Democratization, privatization, and identity transformations since the fall of communism in contemporary Eastern Europe and the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
HST	372	Modern Middle East	In-depth examination of the effect of the West and modernization on Middle Eastern governments, religion, and society in the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): minimum 24 hours OR Visiting University Student
HST	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
HST	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374

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HST	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
HST	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
HST	377	Sports in U.S. History	Focuses on major themes in American sports history, organized topically around fall sports. Themes encourage students to think critically about relationships among sport and society, identity, community, media, capitalism and education. Lectures, discussions, readings and films explore race, gender, class and sexuality as categories of analysis, and the role of sport in constructing ideas about the body along gender and racial lines. Also highlights social justice issues in sport as well as athlete activism throughout the twentieth century. Explores the ways in which the participation of Black, Latino/a and Native American athletes has both mirrored and diverged from Black, Latino/a and Native American citizens' participation in society throughout United States history. Also studies the process through which the equal opportunity to participate in school sports became defined as a civil right and, more recently, a human right.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 377 or HST 306 (Sports in U.S. History)
HST	379	History of College Sports	Student-controlled intercollegiate contests quickly transformed into big-time college sports by the early twentieth century, revolutionizing the sports industry in the United States as well as the landscape of higher education. The American college sports enterprise is unique; nowhere else in the world does a large, amateur, revenue-generating system of school sports exist. After an exploration of the origins of intercollegiate athletics and the creation of the modern National Collegiate Athletic Association, topics include integration, women's intercollegiate athletics, the big business of amateurism, and scandal. Video lectures, readings and films introduce students to these often controversial topics, grounding them in the historical record. Many of the current debates concerning college sports have been taking place for more than a century.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 379 or HST 306 (History of College Sports)
HST	380	Studies in History of Science	Major themes in the history of science with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	381	Studies in History of Ideas	Major themes in the history of ideas with varying topics.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	382	History of Innovation Tech	Studies the development and impact of innovation processes and technology on society, culture, and environment throughout history. Specific themes and topics vary.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	383	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
HST	384	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student
HST	385	History of Chinese Medicine	Explores developments of Chinese traditions dealing with the natural world, science, and medicine.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 335 or HST 385 or SLC 335
HST	386	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
HST	387	Japan	Political, economic, social, and cultural history of the Japanese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	388	Japan	Political, economic, social, and cultural history of the Japanese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student

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HST	389	Japan Society & Values/Premod	Effects of economic and social transitions on personal and social values as reflected in the dramatizations of contemporary events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
HST	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
HST	391	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
HST	392	Modern India	In-depth study of modern India and its neighboring countries from the 18th century to the present.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 392 or HST 303 (Modern South Asia) or HST 394 (Modern South Asia)
HST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours OR Visiting University Student
HST	395	Combat in Film	Interdisciplinary approach to and qualitative method for analyzing war movies and military dramas as both historical and cinematic narratives that represent the experiences of infantry marines and soldiers in 20th- and 21st-century U.S. wars.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENG 394 (Combat in Film) or ENG 395 or FMP 395 or HST 306 (Combat in Film) or HST 395 or VTS 395 OR Visiting University Student
HST	397	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
HST	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Álvaro Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
HST	405	Colonial American Hist to 1763	Political, economic, social, and cultural history of the colonial era. Concentrates on English colonies, with some consideration of Spanish, French, and other colonial regions in North America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 55 hours
HST	406	American Revolution/1763-1789	Causes, course, and consequences of the American Revolution culminating in the ratification of the Constitution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	407	Early U.S. Republic/1789-1850	Political, social, economic, and cultural development of the United States from the Revolution to 1850.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	408	Civil War & Reconstruction	Explores the causes, conduct, and consequences of the American Civil War, concentrating on the years 1848 to 1877.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	409	Emergence Modern US 1877-1918	Triumph of modern political, social, and economic structures and values, 1877-1918; role of region, religion, race, and ethnicity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	412	Contemporary U.S.,1973-Present	End of the Cold War, political crises, and cultural transformations in the U.S.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	413	Contemporary America	The United States from 1945 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student

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HST	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
HST	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419
HST	423	The Tudor Monarchy	Political, cultural, and social foundations of 16th-century England.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	424	The Stuart Monarchy	Political, social, economic, and cultural developments in 17th-century England.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	426	The British Empire	British imperialism and colonialism in Africa, the Americas, Asia, and the South Pacific.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	427	French Revolut/Napoleonic Era	Conditions in Pre-Revolutionary and Revolutionary France; organization of France under Napoleon and impact of French changes upon Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	429	Modern Germany	Germany since 1871.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	430	Ottoman Emp/Classical Period	Focuses on the largest and most powerful Islamic polity from the late Middle Ages until the early twentieth century: its formation, institutions, social and cultural life, and its multifaceted impact on Europe and the Near East.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 430 or HST 495 (The Ottoman Empire in the Classical Period) or HST 498 (The Ottoman Empire in the Classical Period)
HST	432	East Euro/ the Balkans-20 Cent	Politics and culture in Eastern Europe and the Balkans from World War I to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	435	The Russian Empire	Development of Russian imperial institutions and civil society from the 17th to the early 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	436	Rise&Fall of Soviet Communism	In-depth study of Communist revolutionaries' rule of Russia, focusing on utopian culture, Stalinist terror, heroism in war, and the breakup of the former Soviet Union.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	438	Modern Spain	Cultural, economic, political, and social development of modern Spain.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	439	Athenian Democracy	Discussion-based seminar familiarizes participants with the origins, characteristic institutions and political ideology of the Athenian democracy of the 5th and 4th centuries BCE. Engages selected topics in the study of Athenian democracy and gives participants an idea of the substance of contemporary debates within scholarship. Topics will include: The origins of the Athenian democracy; women, slaves, and other subordinate social groups within the democracy; elite critique of democratic ideology and episodes of outright civil war; leaders and masses; the role of the court system within the democracy; democracy and the Athenian empire; and violence in Athenian society. The goal of the course, in addition to a greater familiarity with the Athenian democracy, will be a research paper with a well-chosen topic and a distinctive thesis.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H	Prerequisite(s): minimum 45 hours OR Visiting University Student
HST	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
HST	443	The United States & Latin Amer	Latin American struggle for diplomatic recognition, attempts at political union, participation in international organizations since 1810, and relations between the United States and Latin America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours

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HST	444	Latin American Independence	History of independence movements throughout the Western hemisphere from the late 18th century until the mid-19th century.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, or 112 with C or better; minimum 55 hours
HST	445	20th-Century Cuba	History of Cuba from colonial era to formation of the early republic; political, economic, social development in late 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	447	Modern Mexico	In-depth examination of political, economic, social, and cultural developments in Mexico from 1810 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 55 hours; Credit is allowed for only HIS 423 or HST 447
HST	448	Mexican/U.S. Border	Analyzes the evolution of the Mexican/U.S. border region from the mid-19th century to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	449	Mexican Immigration to U.S.	Assesses the evolution of immigration and emigration public policy since the mid-19th century. Seeks to contextualize the relationship between immigration and other elemental nation-state issues as the economy, education, identity, and civil rights.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours
HST	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
HST	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452
HST	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
HST	456	The Vietnam War	Intersection of American and Asian histories in Vietnam, viewed from as many sides as possible.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	459	Gandhi/Politics of Nonviolence	In-depth study of Gandhi and the Gandhian political philosophy and practice of nonviolence.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 55 hours. Credit is allowed for only HST 459 or HST 498, Gandhi: Politics of Non-Violence
HST	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student
HST	465	Women in Europe 1750 - Present	European women's diverse religious, ethnic, national, and economic roles in society, culture, and politics, 1750 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105, 108 with C or better; minimum 55 hours
HST	480	Mthd Tch Hist: Clsm Resources	Methods in instruction, organization, and presentation of the subject matter of history and closely allied fields.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): admission to Professional Teacher Preparation Program; ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 480 or HST 530
HST	481	Mthd Tch Hist: Comm Resources	Identify community-based resources for teaching history, work with resources, and learn how to integrate them into the secondary classroom.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 480 or SED 480 with C or better; admission to Professional Teacher Preparation Program
HST	482	Writing HST Science Ideas Tech	Writing-intensive course examines intersections between texts and major themes in the history of science and technology.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours

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HST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
HST	485	History in the Wild	History outside of conventional academic texts and purposes. Students craft historical narratives in ways that engage an audience beyond the professor, present information in forms other than (but not excluding) writing, and identify and use sources found outside of archives.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
HST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better; HST 300 or 495 with C or better
HST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours OR Visiting University Student
HST	495	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
HST	496	South,SE & East Asia GIBI Mtrx	In this capstone seminar, majors in Asia Studies take up broad comparative themes, integrating knowledge from the major's three tracks (East, South, and Southeast Asia) and executing a research project culminating in a major paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Asia Studies major (East Asia, South Asia, or Southeast Asia) or History major with Asia concentration; minimum 55 hours
HST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
HST	502	Public History Methodology	Introduces historical research methodologies, techniques, and strategies used by public historians. Readings, short papers, and guest speakers. Required for students in the public history concentration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PHD student
HST	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives--whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
HST	515	Studies in Historiography	Methods and theories of writers of history.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	520	Masters of Nonfiction	Students read and critically discuss works by well-known nonfiction writers to improve their own writing skills. Consists of weekly writing exercises, reviewed with workshop-style discussions centered on individual authors, themes or genres such as history, journalism, personal essays, biography, character profiles, travelogues, book reviews and op/ed commentary.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HPS 520 or HSD 520 or HST 520
HST	525	Historical Resource Management	Identification, documentation, and interpretation of historic period buildings, sites, and districts. Emphasizes interdisciplinary efforts among historians, architects, and anthropologists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	527	Historical Administration	Preparation of historians in administration of archives and historical sites, museums, societies, and offices in government agencies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student
HST	532	Community History	Techniques and methods of community history emphasizing local resources. Required for community history option.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisite: History MA or PHD student

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HST	573	Museum Administration	Formal organization and management of museums, governance, personnel matters, fund raising and grantsmanship, legal and ethical issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 573 or HST 573
HST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	597	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and to articulate the value of the degree to potential employers or admissions committee members.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HST 502, 641, 642, or 643; HST 591; HST 640; 24 graduate hours
HST	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	640	Historical Methods	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 640 or HST 500 (Historical Methodology)
HST	641	North American History	Core readings course engages key historical monographs focused on historical methods. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 641 or HST 598 (US to 1877)
HST	643	Global History	Core readings course engages key historical monographs focused on global history. Provides core content knowledge and an understanding of debates and trends in the field. Provides a basic understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 643 or HST 598 (World and Global History)
HST	644	Area Studies in History	Core readings course engages key historical monographs focused on a geographic or thematic area of study. Topic varies by semester. Provides core content knowledge and an understanding of debates and trends in the field. Provides an understanding of existing literature in the field. Develops ability to analyze historical methods and develop scholarly historical arguments.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 644 or HST 598 (European Core I: Pre-Modern Europe) or HST 598 (Medieval and Early Modern Europe) or HST 598 (Pre-Modern Europe and the World)
HST	682	Advcd Rsrch Skill	Designed for students who are demonstrating a non-linguistic skill such as: quantitative methods of analysis, geographic information system mapping, documentary editing, training in archival management, oral history interview techniques and historic preservation, or interdisciplinary training in fields relevant to the student's research interests such as geography, anthropology, sociology, political science or public administration, literature, ethnic studies, women's studies, ecology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): History MA or PhD student; Credit is allowed for only HST 682 or HST 692 (Documentary Editing Advanced Research)

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HST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: History MA or PHD student
HST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Pre-requisite: History MA or PHD student
HST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		Pre-requisite: History MA or PHD student
HUL	250	Intro Interdisciplinary Rsrch	Introduces undergraduate students to transdisciplinary and interdisciplinary academic inquiry so that they may expand their understanding of and capacity to tackle the grand social challenges facing the world today. Equips students to engage in the interdisciplinary and intergenerational collaborative inquiry through the pedagogy of the Humanities Lab, which explores and seeks to address those grand social challenges.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
HUL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	300	Humanities Lab: Engaged	Labs critically engage with grand social challenges using a collaborative, interdisciplinary and hands-on inquiry process. Student-faculty teams design and conduct original investigations and then develop a means to publicly share the proposed solutions based on their work.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
HUL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	400	Humanities Lab: Immersive	Labs critically engage with grand social challenges using a collaborative, interdisciplinary and hands-on inquiry process. Undergraduate and graduate student, faculty and outside collaborators work together as an intergenerational team to design and conduct original investigations. The teams then synthesize their work, respond to review feedback, and develop a means to publicly share their proposed solution(s) based on their work.	N	LAB	Y	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
HUL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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HUL	549	Humanities Lab: Transformative	Labs critically engage with grand social challenges using a collaborative, interdisciplinary and hands-on inquiry process. Undergraduate and graduate students, faculty and outside collaborators work together as an intergenerational team to design and conduct original investigations with graduate students closely mentoring undergraduate students. The teams synthesize their work, respond to review feedback, and develop a means to publicly share their proposed solution(s) based on their work.	N	LAB	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
HUL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
HUL	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
HUL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
HUL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	501	Character-Driven Leadership	Provides the core concepts of character-driven leadership defined as the commitment to do the right thing, the right way for the right reasons. Focuses on values; individual, organizational and national, along with ethics; culminating with a clear understanding of leadership. Led by a former U.S. Army, Lieutenant General with leadership experience of over 36 years in the Army and 6 years in higher education. Explores the "leader in me" by examining the values that they embrace and the causes that they believe in, along with understanding "the environment I lead in" and the criticality of comprehending where they lead and who they lead.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	502	U.S. National Security Policy	Core requirement for the master's degree in International Affairs and Leadership. Takes students through the realistic process of developing and implementing U.S. national security policy. Presented by a former senior national security professional, outlines the origins and current structure of America's national security architecture. Using actual policy decisions, students exercise the process of analysis, decision making and translating into action, elements of the country's national security agenda. Also includes intensive analysis of the intent and outcome of such critical policy decisions and the leadership exercised by the participating decision makers.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	503	Applied Int'l Leadership	Builds on the theoretical and practical foundation of leadership development conveyed in previous course work. During the semester, students engage with faculty and with each other in multiple in-depth applied leadership scenarios, examining various aspects of leadership in international settings. The semester culminates in individual student presentations analyzing a complex international leadership challenge.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; IAL 501

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IAL	504	U.S. Diplomacy in Action	Led by a former U.S. Ambassador, students constitute a U.S. Embassy Country Team for a specific country and manage a reality-based diplomatic agenda. Students are assigned the actual roles of Embassy team members, and together with their "Ambassador," Students practice how U.S. foreign policy is developed and executed in the field. Through readings, case studies and insights of outside foreign policy experts and U.S. Foreign Service Officers, students are challenged to understand current bilateral policies and relations between the United States and the country assigned for the course. Students also develop new, creative programs for the future that promote U.S. interests and also improve the understanding between the people of the country and the United States. Case studies and class simulation exercises of policy making and program management help students understand good and bad character-driven decisions and leadership.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	505	Key Issues in Global Economy	Projects forward what the economic and business environment will offer to graduates of the IAL master's program as they enter the job market. "Character-driven leadership" course content prepares students for success in their chosen career field. Led by a former U.S. Ambassador with extensive experience in economic and commercial diplomacy as well and private sector international business for and over 30 years. Through readings, case studies and insights of economic and business leaders, challenges students to consider not only possible future trends that offer growth and opportunities, but also economic and business developments that threaten setbacks, insecurity and failures. Case studies and class simulation exercises of policy making inform students of good and bad character-driven decisions and leadership in the business and policy world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	508	Transatlantic Relations	Presents IAL students with a brief review of the rich history of the development of the Atlantic Alliance since the end of World War II, the end of the Cold War, and cooperation since the tragedy of the attacks on 9/11. But most importantly, this course projects forward what direction the U.S. and Europe are moving in the future. Challenges students to analyze and consider "over the horizon" trends and opportunities, but also the risks of conflict and how to mitigate and solve challenges. Case studies present "character-driven leadership" by U.S. and European leaders as they manage issues of cooperation and competition. Through readings, case studies and insights of European leaders, U.S. and European academic experts, and practitioners in government, business and Non-Governmental Organizations (NGOs), students develop their own policy proposals.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	509	Western Hemisphere	Elective course toward the MA in International Affairs and Leadership. Explores the opportunities and challenges facing the United States in its relationships with its regional neighbors, including Canada, Mexico, Central America, the Caribbean and South America. The lectures and readings consider how the region's social, cultural and economic history shapes its relations with the U.S. and the rest of the world. In a series of papers, students analyze how U.S. interests in the region can be best articulated in light of these factors.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	511	Human Rights and Real Politik	Elective course for the master's degree in International Affairs and Leadership. With a heavily discussion-based format, explores the origins of the human rights movement, watershed moments, and contemplates what may be next. Based on the foundation that respecting human rights is not simply the right moral choice, but one that has economic and national security implications: that the world is more prosperous and more secure when freedom and rights are universally afforded. Also addresses contemporary human rights crises, particularly from a leadership standpoint.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IAL	512	Countering Global Terrorism	Elective for the master's degree in International Affairs and Leadership. Analyzes, discusses and proposes tactics and strategies for countering global terrorism, mainly, but not exclusively from the U.S. perspective. Presented by a former senior U.S. government counter-terrorism professional, focuses on U.S. counter-terrorism strategy against Middle East terrorism since 9/11. On hand of actual policy decisions, students exercise the process of decision making and translating into action, elements of the U.S. counter-terrorism agenda in partnership with allies and even adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	514	Combatting Human Trafficking	Offers a practical, global, interdisciplinary examination of the many issues surrounding human trafficking and modern slavery. Includes an overview of the legal perspectives on human trafficking, as well as various perspectives and alternative approaches to addressing modern day slavery. Discusses the roles of government, investors and consumers in detail, providing students the opportunity to explore diverse methods in understanding the complexity of human trafficking and modern slavery. Through class discussions and writing assignments, challenges students to critically think about methods for combatting the multitude of factors that contribute to human trafficking and modern slavery.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	560	Capstone	Serves as the culminating experience for the MA in International Affairs and Leadership. Each student prepares a comprehensive presentation capturing the knowledge and insights gained during the degree program, focused on a specific international affairs leadership challenge. A 45-minute oral presentation must show analytical rigor and defend a tangible strategic plan for achieving impact and positive change. The oral presentation must be accompanied by written back-up material that fully substantiates and defends the student's policy analysis and proposal for action. The presentation is followed by a 45-minute Q&A session led by the course instructor joined by a panel of international experts, who engage the student and critique the presentation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IAL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): International Affairs and Leadership MA student
IAL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): International Affairs and Leadership MA student
IAL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): International Affairs and Leadership MA student
IAL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAP	101	Art, Artist, and Culture	Provides an approach to art, creativity, and culture in global, historical, and contemporary contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	102	Found I: Perf Tech & Comp	Focuses on practice-based studies of contemporary presentational strategies and techniques.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	103	Found I: Interdisc Art Pract	Covers art and performance studies and applications of theory and praxis in contemporary interdisciplinary artworks. Shows students how the creative arts in inquiry and in action applied across disciplines can make a critical difference.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	104	Found I: Fund of Sound Art	Investigates late 20th- and 21st-century sound art and our relationship with it.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	105	Fndns I: Foundatns Visual Art	Focuses on contemporary aesthetic concepts and language for interdisciplinary visual arts application. Introduces core concepts of visual design: the elements and principles of design and the creative process, the basics of drawing, color theory, typography and 2D design. Engages student in the fundamental aspects of design to build an adequate foundation and prepares for the next level of the study of interdisciplinary arts practice.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	201	Intro to Interdisciplinary Art	Considers interdisciplinarity in practical terms in all art forms. Also considers antecedents and cross-cultural issues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	202	Persp Interdisc Arts & Perfrm	Social, cultural, and historical examination of interdisciplinary art and performance and a survey of current interdisciplinary work and approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	220	Intro to Game Studies	Examines the history, evolution, culture, aesthetics, ontology, anatomy, business and fundamentals of studying and building video games and the ways in which they interface with multiple disciplines in the humanities.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only IAP 220 or IAP 294 (Introduction to Game Studies) OR Visiting University Student
IAP	222	Games and Ethics	Involves students in the process of ethical gameplay design. Analyzes in-game challenges and mechanics with the lenses of various ethical theories. Students not only think deeply about the relationship between ethics and in-game challenges in game design, but also about real-life challenges that they might not have before realized were connected.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAP 222 or IAP 294 (Games and Ethics) or IAP 294 (Game Over: Ethics and Games)
IAP	264	Music, Mind, & Culture	This interdisciplinary course explores how music and the general subjects of sound, noise, silence, hearing/listening are approached interdisciplinarily through the arts, humanities and sciences. In contemporary scholarship, the study of music crosses different academic fields and disciplines, including: musicology and music history, sociology and anthropology, cultural studies, religion, psychology, biology, ecology, neuroscience, mathematics, physics, technology and engineering, business and economics, philosophy, and aesthetics.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is only allowed for IAP 264 or IAP 294 (Music, Mind, and Culture)
IAP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	301	Energetic Syst of Art: Collab	Identifies and explores the energetic systems at work in the creation, performance, and perception of art.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
IAP	302	Cross-Cultural Perspective/Art	Social and cultural perspectives of art and performance through a survey of historical and contemporary attitudes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	304	Trads/Avant-Garde Expermntl Art	Surveys 20th-century art movements and isms, including futurism, dada, surrealism, constructivism, realism, the Bauhaus, abstract expressionism, minimalism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	305	20th-21st Cent Art, Perf&Media	Surveys artists, movements, and trends in the arts with an emphasis on interdisciplinary performance, media, and technology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	307	Art and War	Global interdisciplinary survey of the range of work created by artists in response to war, through time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	310	Women in Art	Cultural, historical, and social issues relating to the seeming scarcity of women artists and changing social contexts for women artists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre- or corequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAP or IAS 310
IAP	321	Music Composition I	Study and implementation of specific compositional theories and procedures.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	322	Multitrack Digital Recording	Introduces students to theory and practice of Musical Instrument Digital Interface (MIDI) technology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	324	The Voice and Performance	Involves all aspects of the human voice, including research, creation, and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	325	Sound Perf: Exploring Alt Perf	Utilizes innovative sound ensembles to explore all aspects of sound and its place in various art forms.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisite: BA Digital Culture major or BA Interdisciplinary Arts and Performance major; Pre/Co-requisite: IAP 201 or 202
IAP	331	Perf, Acting & the Individual	Explores the concepts of the self, the subject, and the author as each pertains to the solo artist.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	332	Technical Prod/Interdisc Arts	Develops basic technical knowledge and application of fundamental stagecraft techniques used in the creation and presentation of performance works.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	333	Directing for Performance	Explores various strategies for performance. Emphasizes nontraditional staging and performance.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	334	Conceptual Develop in the Arts	Conceptual development processes in the arts from initial idea to formal project proposals, grants, and production plans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture or Interdisciplinary Arts and Performance or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	339	Creating Drama:PageStageScreen	Practical study of writing, directing, acting and performance techniques essential for the creation of theatrical works for stage, television and theatrical film presentation.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prereq(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only COM 339 or COM 394(Crt Drm Wrk:Pg to Stg&Scrn) or ENG 339 or ENG 394(Crt Drm Wrk:Pg to Stg&Scrn) or IAP 339 or IAP 394(Crt Drm Wrk:Pg to Stg&Scrn) OR Visiting University Student
IAP	352	Seeing and Drawing	Develops drawing and seeing skills that are important not only to visual arts but also to music, dance, and theatre.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	354	Visual Representation	Explores materials, processes, and aesthetic concepts of art making through various media with readings on cultural perspectives and contemporary theory.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA major or Interdisciplinary Arts and Performance BA major; Pre- or corequisite(s): IAP 201 or 202
IAP	355	Illusion and Vision	Inquiry into 2-D surfaces for visual representation and personal expression; includes readings on color theory, visual perception, and historical/cultural patterns.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	361	Digital Editing/Media Literacy	Investigates the approaches used in digital editing with a focus on interactivity, graphics, audio, and desktop video.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	362	Games & Narratology	Focuses on design techniques for the writing of nonlinear and interactive stories in the video game development process. Compares and contrasts game writing with other creative writing such as short story, song writing, oral history, poetry, fiction and film. Examines, deconstructs and questions the game design approach commonly referred to as narratology. Inspects key texts in media and cultural studies for attitudes, ideas and thoughts on games and narrative in games. Uses materials, processes, and aesthetic concepts of level design and visual skills needed to create a video game using a game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
IAP	363	Sound, Image, and Media	Interdisciplinary arts projects for experimental approaches to relating sound and visual image, accompanied by survey of historical and contemporary material.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	364	Documentaries	Media arts projects exploring new and experimental forms of visualization based upon an interdisciplinary survey of historical and contemporary examples.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	365	Digital Interactivity	Combines graphics, video, and animation with digital authoring tools for creation of interactive multimedia Web sites.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	368	Digital Graphic Technologies	Employs technology used in contemporary graphic designs to design concepts and techniques for modeling and representation applications.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing or Digital Culture student
IAP	371	Verbal Art	Examines varieties of verbal art in everyday life, literature, oral and literate cultures. Considers diverse cultural forms and values.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAP	375	Contemporary Performance	Performance course focusing on elements of contemporary and digital performance in relationship to stage, new technologies, video, installations, and public art. Through interdisciplinary strategies, students gain tools to deepen their knowledge and range of performance. Requires students to engage in research, conceptualization, and the creation of new original work, combining classroom workshops, various readings, fieldwork, and production to emphasize interdisciplinarity, collaboration, and personal vision. Once theories and concepts are explored, students work in a conceptually based and physically rigorous environment toward producing new work, culminating in a final performance project.	N	STO	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Digital Culture BA or Interdisciplinary Arts and Performance BA or Performance and Movement BA major; Corequisite(s): IAP 201 or 202 OR Visiting University Student
IAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
IAP	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
IAP	421	Comp.Process, Techniq/Style II	Advanced study of specific compositional theories and procedures; in-depth analysis of individual work.	N	LEL	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	431	Perspectives/Performance/Actng	Focuses on the interaction of the performer with media, alternative stagings, and collaboration with other performers.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	433	Directing Workshop	Applies experimental directorial techniques to presentations and deconstruction of classical works including European and cross-cultural traditions.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Credit is allowed for only IAP 433 or MAS 598 (Directing Workshop)
IAP	434	Production Laboratory	Develops original scripts into showcase productions. Students function as theatrical ensemble, participate in all phases of performance and production values.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	441	Movement for Performance	Explores the relationship of movement as it relates to performance, both historically and cross-culturally.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	462	Games and Play	Focuses on a study of play and game design. Discusses what play is and why humans need it as it pertains to game design. Considers and analyzes an examination of the dark side of play. Scrutinizes the concept of what critical play is and how games are working within social, political and cultural systems. Studies these concepts as the students design and execute a serious or artistic game demo using the materials, processes, aesthetic concepts of art making and scripting skills needed to create a video game using a 3D game engine. Knowledge of introductory computer science recommended.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 45 hours
IAP	463	Recording Studio Practicum	Supports advanced media students' work in the recording studio and media lab by refining skills producing recordings that enhance their academic and/or professional portfolios.	N	STO	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1		Prerequisite(s): IAP 322 or 469; Credit is allowed for only IAP 463 or IAP 494 (Recording Studio Practicum)
IAP	464	Media and Diversity	Interdisciplinary art projects exploring identity, perception, and technologies from a basis of class, race, ethnicity, gender, sexuality, and ecology.	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
IAP	465	Media Technologies & the Arts	Practical explorations of media arts interrelated with cultures, society, and technology, addressed through readings, discussion, research, and student arts projects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	466	Digital Interactivity/Advanced	Advanced multimedia authoring skills for creation of interactive works in DVD, CD ROM, and other media formats.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students
IAP	467	Acoustic Ecology	Investigations into the relationship between audio art and ecology; covers field recording, oral histories, digital editing, and designing audio Web site and databases.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	468	Digital Graphic Applications	Targeting, planning, design, authoring, development, and presentation of professional digital media graphics for Internet and print.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Pre-requisites: Interdisciplinary Arts and Performance or Applied Computing students

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IAP	469	Advanced Audio Production	Engages advanced media students in the technical, logistical, and aesthetic concerns specific to audio in all forms of digital media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAP	471	Language, Culture/Performance	In-depth examination of language in myth, poetry, social and aesthetic performance genres.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	473	Aesthetic Research	Investigates how artists, in all disciplines and from different historical periods, conduct or participate in research.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	474	Art and Film	Focuses on film as an art form in relation to the arts through aesthetics, cinematic theory, period study.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAP	480	Art as Praxis: Concept to Prod	Capstone course. Students complete an exit project or internship as well as an arts portfolio under the guidance of an instructor and mentor.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3-6		Prerequisite(s): minimum 45 hours OR Visiting University Student
IAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAP	496	Playworks Portfolio	Students devise a career plan, establish a digital portfolio, prepare artist statement, and become familiar with contracts and legal documents associated with a career as a serious independent game developer or studio artist.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): Arts and Humanities in Games certificate student OR Visiting University Student
IAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IAS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	300	Career Strat & Pers Resilience	Analysis of sociological and economic factors of 21st-century work environments, integrated with a psychological understanding of resilience.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR New College Applied Science major OR Visiting University Student
IAS	305	Work and Identity	Explores the relationship between work and identity, as well as the search for meaning in work across generations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	
IAS	340	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
IAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
IAS	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
IAS	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409
IAS	410	Evolution of Ideas	Investigates ideas (paradigms) and revolutions (paradigm shifts). Examines several topics from perspectives of science, arts, humanities, social sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
IAS	415	Life in the Universe	Examines the search for life in extreme environments on Earth and in remote locations beyond Earth.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		

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IAS	416	Black Holes and Beyond	Explores developments in understanding nature's most basic force-gravity-from Aristotelian concepts to modern theories of curved space-time.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		
IAS	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
IAS	420	Multicultural Autobiographies	Examines the human experience via autobiographies and personal narratives. Multicultural, literary, and psychological perspectives on individual lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	(L or HU) & C	Prereq(s): ENG 101, 105, or 107 w/ C or btr; ENG 200 w/ C or btr; one 200-level lit course w/ C or btr OR New College ugrd std; ENG 101, 105, or 107 w/ C or btr; min 45 hours; Credit is allowed for only ENG 420 or IAS 420 OR Visiting University Student
IAS	430	Science and Religion	Examines evolving relationships between scientific thought and Western and Eastern religious thought. Explores cosmologies, worldviews, and epistemologies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 430 or MAS 510 OR Visiting University Student
IAS	480	Capstone/Practices/Approaches	Individualized projects developed by the student under the guidance of the capstone coordinator based upon the student's area of concentration. Provides an opportunity to apply the knowledge and skills developed in the course of their program to real-world situations.	N	RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		Prerequisite(s): Interdisciplinary Arts and Sciences BA or Philosophy, Religion, and Society BA or Applied Science BAS major
IAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
IAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
IAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
IAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
IAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
IAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	110	Intro Integrated Behav Health	Introduces major clinical concepts and practice models related to team-based medical and behavioral health care integration.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	120	Intro to Integrated Healthcare	Provides an introduction and overview of the American health care system and its driving forces, with a focus on the move to integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		
IBC	415	Behav Hlth Over the Lifespan	Common issues and concerns faced throughout the different life stages and the associated behavioral health needs. Presents evidence-based strategies for primary prevention and early intervention. Provides case examples to effectively illustrate the application of the key constructs addressed in the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	420	Population Health Management	Presents an overview of population health and its management. Emphasizes a solutions-based perspective, consistent with the Quadruple Aim.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 420 or IBC 420
IBC	425	Cognitive & Behav Counseling	Frameworks for conceptualizing health behavior change. Reviews evidence-based approaches that address patient's behavioral health needs in primary care and other medical settings.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours

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IBC	430	Med Pathophysiology, Terminol	Provides an overview of pathophysiology and medical treatment of common medical conditions in primary care (e.g., diabetes, coronary heart disease, hypertension, asthma, cancer). Emphasizes medical terminology, pathophysiology, common medical treatments and behavioral health issues associated with those conditions that students can expect to see in integrated medical settings, especially integrated primary care. Students learn appropriate medical terminology for symptoms, diseases, treatments and medical tests so they can communicate effectively with inter-professional medical teams. Discusses the role of the behavioral health provider as it relates to these conditions as well.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
IBC	520	Integrated Health PCMH	Covers the Patient-Centered Medical Home (PCMH), with an emphasis on alignment in primary care and other integrated health care systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	530	Evid Based Integrated Health	Provides a health care manager's introduction to evidence-based guidelines for integrated health care design and delivery systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	540	Integrated Health Improvement	Team-based quality improvement evaluation, measurement and health care system transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	550	Integrated Health Care Ops	Integrated health care operations, including an in-depth exploration of health care and integrated care systems, planning, program assessment, implementation and change management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	560	Integrtd Health Care Data Anly	Data analytic tools and techniques used to plan, implement and improve integrated health care transformation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	570	Integrtd Health Care Fin Mgmt	Integrated health care financial management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	585	Team-Based Consultation&Ldrshp	Team-based leadership and consultation in integrated health care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	586	Behavioral Health Writing	Focuses on improving overall professional writing skills, with an emphasis on how to write a literature review, use APA format, cite sources ethically and access available writing resources as necessary.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Behavioral Health (Clinical) or Behavioral Health (Management) DBH student; Credit is allowed for only IBC 586 or IBC 590 (Professional Writing Skills)
IBC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
IBC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	601	Models of Integrated Primary C	Provides an overview of the primary care environment as well as current models of integrated primary behavioral health care. Reviews and critiques models of health care based on their success in impacted patient health outcomes and improving physician satisfaction, along with fiscal and care delivery systems for each.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	602	Healthcare Statistics	Provides an overview of contemporary issues in health statistics and develops student proficiency in completing hands-on statistical analyses using Microsoft Excel. Develops proficiency in using Excel to manage data analyses as an ongoing tool to collect and analyze clinical and cost-effectiveness data in primary care and related healthcare settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	603	Brief Interventions in Primary	Provides an overview of evidence-based care for the integrated primary care environment. In particular, reviews and applies the most common approaches to addressing co-morbid behavioral and medical conditions, including but not limited to brief psychotherapy, adherence enhancement, lifestyle medicine, and others, using cognitive-behavioral, acceptance and commitment therapy, solution-focused, and motivational interviewing approaches.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 603 or IBC 691 (Brief Interventions in Primary Care) or IBC 702
IBC	604	Clinical Med/Pathophysiology	Overview of each of the main systems within the human body. Addresses the major diseases (symptoms, diagnosis, and medical treatments) within each system. Students learn appropriate medical terminology for symptoms, diseases, treatments, and medical tests so they can communicate effectively with medical practitioners (nurses and physicians). Content is equivalent to pathophysiology training in an RN program. Also addresses the role of behavioral care providers in medical settings; design and implementation of psychoeducational programs in primary care; stress management techniques for use in medical settings; chronic pain management; identification and treatment of somatization disorder; increasing compliance in noncompliant patients; alternative/complementary medicine; overview of nutrition; and the effects of exercise and nutrition on prevention and treatment of diseases.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	608	Psychopharmacology Behav Care	Provides overview of psychopharmacology to equip the behavioral care provider with the understanding of psychotropic medications necessary to make prescription recommendations to primary care physicians and to participate in medication management for patients being prescribed psychotropics. Basic principles of pharmacology in general, including pharmacokinetics, pharmacodynamics, medication development and the FDA approval process, interaction effects, drug company marketing strategies, appropriate and inappropriate medication usage, over-medication, and off-label medication use. Reviews pharmacokinetics and pharmacodynamics in special populations (children, the elderly, and patients with co-morbid medical and psychological conditions).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	609	Clinical Neuropathophysiology	Presents overview of each of the basic neuroanatomy, neurophysiology, and a focus on the manifestations of neurophysiological dysfunction across the life span for Doctor of Behavioral Health (DBH) program behavioral clinicians. Covers the basic human brain anatomy, neurophysiological processes, development, and maturation. Using case studies, presents and discusses evidence-based support for theories of psychiatric disorders and neuropsychopathology. Incorporates evidence-based research findings on the role of genetics, neurophysiological adaptation, epidemiological and societal influences in order to develop understanding of disruptions in normal neurophysiological functioning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	610	Behav & Psych Assess Prim Care	Presents a comprehensive model of behavioral and psychological assessment for behavioral health clinicians in primary care and related medical settings. Provides behavioral health consultants with the necessary knowledge base and skills to develop an appropriate assessment and treatment plan for a variety of commonly seen complaints in primary care. Places attention on the assessment of both psychiatric and behavioral complaints across the lifespan. Students become familiar with both structured interview and empirically support quantitative measures consistently utilized to enhance our understanding of the presenting complaint.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	611	Population-Based Behv Hlth Mgt	Overview epidemiology for health care followed by population-based approaches to behavioral intervention. Epidemiology includes concept of populations, descriptions and definitions of health and disease, measurement of health (measures, morbidity, mortality and health); designs for studying the health of populations and standardization of population health measures. Population-based management includes definitions of medical management; planning health care for populations and population health outcomes; quality of care and economic analysis of population-based interventions; adjunctive treatments as a core component of population-based interventions. Also, advanced application of population-based behavioral interventions with a focus on design, measures, analysis, results and discussion of current approaches. Includes predictive modeling methods for defining populations; interventions focusing on stepped-care approaches; engagement strategies, interventions, measurement, and follow-up.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	612	Intro to Behav Interventions	Provides a foundational understanding of behavioral health interventions for primary care settings for those students intending to work in administrative, management or allied health positions. Provides a theoretical basis for various psychological schools of thought, as well as an overview of the empirical evidence for those approaches. Reviews models of therapy including: psychodynamic, brief strategic, cognitive-behavioral and solution-focused. Also reviews two intervention strategies typically used in integrated settings: Acceptance and Commitment Therapy (ACT) and Motivational Interviewing (MI). Explores the ways that these approaches serve as the theoretical framework of the Biodyne model.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 612 or IBC 780 (Introduction to Behavior Intervention)
IBC	614	Quality & Perf. Measure, Imprv	Overview of health care quality management, emerging models of health care performance measurement, and models of pay for performance incentives in health care designed to reward providers for attaining quality of care goals. Prepares behavioral clinicians to provide services that are consistent with best practices in quality management and performance measurement in health care and to provide care that is consistent with performance incentive programs that are present or on the horizon. A key characteristic of health care reform is increased focus on provider quality of care, accountability for quality via performance measurement, and aligning provider incentives to meet national and regional quality of care performance targets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	615	Innov. Techn. in Behav. Health	Provides a quick overview and answers to basic questions related to both online therapy and telemental health. Gives a downloadable audio recording (MP3) and access to the accompanying video clips that augment a rich sampling of pages extracted from our other coursework. As a composite, this experience introduces our multi-modal learning environment and, more importantly, gives an idea of the issues involved with establishing an online or otherwise remote practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 616 or IBC 780 (Innovative Technologies in Behav. Health Intervention)
IBC	620	Psychosomatic Illnes: Diag & T	Teaches how to successfully diagnose and treat physical illness caused by various forms of psychosocial stress (psychophysiologic disorders, PPD). Because patients are often unaware of the nature or degree of stresses that are responsible for their illness, places emphasis on learning how to detect and use clues that patients provide to develop a more complete understanding of the struggles than they are able to perceive for themselves. Focuses on selecting, assessing and treating a patient known to the student who has medically unexplained physical symptoms.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	624	Integ Behav Hlth Care Child Ad	Integrates developmental psychology with pediatric psychology in order to prepare behavioral clinicians to provide screening, assessment, and intervention for children and adolescents in primary care and other medical settings. Presents an overview of developmental stages with an emphasis on critical tasks, while contrasting normal versus abnormal development. Develops societal, familial, and cultural influences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	626	Behavioral Health Management	Presents an introduction to the roles and responsibilities of supervisor/manager in a health care organization. Provides behavioral health professionals moving into management with the necessary knowledge base and skills to be an entry-level manager and focuses on the further knowledge acquisition needed to become an experienced, effective manager and leader. In addition, discusses the larger context in which healthcare businesses operate--health care reform, regulations and technological changes. Participants take time to look at personal characteristics, interpersonal styles and presentation that affect how one is perceived and responded to in an organization. Too often we have observed individuals with high-level clinical skills moving into management without the requisite skills and understanding of issues, restricting their ability to be successful.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 626 (or IBC 724) or IBC 780 (Behavioral Health Management)
IBC	630	Financial Mgt of Health Care	Covers the fundamentals of health care finance with a concentration on health care system financing and the related operational management issues. Grounds clinical managers in finance principles and assists those students with understanding the financial issues currently faced by stakeholder organizations in the health care system. Focuses on the information and tools needed by managers to address financial issues and challenges as an organizational leader for integrated care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 630 or IBC 691 (Financial Management in Healthcare)
IBC	634	Strategies & Techn for Behv	Examines and discusses the theoretical and applied health-related research changing nutrition, smoking and physical activity behaviors in clinical practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	640	Family Couples in Primary Care	Explores the systemic dimensions of health care delivery that are relevant to working with families and couples in primary care. Students study models from family therapy and medical family therapy that address family dynamics associated with the management of health and illness, the progression of chronic diseases, and other medical conditions. Reviews strategies for adapting family systemic approaches to provide patient- and family-centered health care in a primary care setting.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 640 or IBC 691 (Family and Couples in Primary Care)
IBC	650	Veterans Health	Provides an introduction to the military and veteran culture and the integrated health care needs and management concerns related to this unique population.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 650 or IBC 691 (Veterans Health)
IBC	660	Healthcare Legal Ethcl & Prof	Integrate three key areas of healthcare ethics, law, and professional issues for the Doctor of Behavioral Health (DBH) clinician in primary care: (1) the code of ethics for psychologists; (2) legal and ethical issues in medicine; and (3) technological issues and the behavioral health provider.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	670	IBH Interv for Sub Use Disord	Focuses on the theoretical foundations, research and strategies for identifying, intervening and/or referring patients in primary care and other healthcare settings that present with substance use disorders or problem use. Provides detailed information about the clinical model of SBIRT (Screening, Brief Intervention, and Referral to Treatment), along with strategies for implementing sustainable business models for SBIRT in healthcare environments.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only IBC 670 or IBC 780 (Integrated Behavioral Health Interventions for Substance)
IBC	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): IBC 601; IBC 603 or IBC 626; IBC 614; IBC 793 (Introduction to Applied Project [Cohort 1])
IBC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IBC	716	Health Care Information Mgmt	Provides a comprehensive overview of health care information technology (HIT), including the effects of the external environment and government policies on its evolution; the expanded role of the CIO; the basics of hardware, software and communication systems; the types of operational, management and clinical applications; and the value HIT brings to the enterprise. Included concepts reflect a broad vision of HIT management as a combination of technology, information and manpower leadership.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 716 or IBC 691 (Healthcare Information Management)
IBC	718	Healthcare Syst:Org, Del, Econ	Provides an overview of the U.S. healthcare system with a focus on economics and policy. Primary goals of the course are to enable students to recognize the relevance of economics to healthcare and to apply economic principles to better understand health-related issues; understand the U.S. healthcare delivery system in the context of social, policy, and economic factors; evaluate the evolving nature of healthcare reform initiatives and their implications for clinical practice, financing, research and policy; analyze public healthcare policy from an economic perspective. Students also focus on behavioral healthcare economics and policy and the economics of behavioral health services in medical settings. Students also understand the medical cost offset effect, including economic benefits of behavioral interventions for co-morbid medical and behavioral conditions, measurement of medical cost-offset, and cost-offset for psychopharmacology and specific behavioral conditions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	720	Behavioral Health Entrepreneur	Provides an introduction to the essential entrepreneurship skills for the behavioral healthcare clinician. Focuses on entrepreneurial skills designed to prepare the behavioral clinician to start a new business venture or revitalize an existing organization or business, to meet the needs of the evolving healthcare system and marketplace.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	725	Effect Consult Integrated HC	Prepares students to function as effective consultants in integrated care settings. Effective consultation includes the ability to engage, educate, inform, persuade and collaborate with diverse professionals both within the clinic or hospital setting but also in related systems of care. The hospital or clinic setting includes care providers such as PCPs, nurse, allied health administrative support staff, and managers and executives such as medical director, CEO and CFO. The hospital or clinic also includes related departments such as quality improvement, electronic health records/health information technology, billing, finance and actuary. Systems of care include the patient/family, community, health plans, disease prevention or management companies, specialty mental health and substance use disorder providers, community-based resources, large employer group and related EAP providers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 725 or IBC 691 (Effective Consultation in Behavioral Health)
IBC	728	Cultural Diver., Hlth & Illnes	Focuses on the relationship among cultural diversity, health and illness, and multicultural psychotherapy in primary care and other healthcare settings. Prepares behavioral clinicians to identify the relationship between cultural diversity and health and illness and to use effective psychotherapy informed by cultural diversity in primary care and related medical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	732	Leadership in Health Care	Leadership, management and organizational behavior in health care settings. Organizational behavior theories and concepts related to leadership. Uniqueness of structures, processes and interactions in integrated care programs and how to adapt these to medical settings. Communication skills, teamwork and collaboration. Current challenges to leadership in health care reform.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only IBC 732 or IBC 691 (Leadership in Healthcare)

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IBC	740	Cost Offset and ROI	Research has demonstrated that many integrated behavioral interventions designed to prevent or improve chronic disease outcomes result in cost savings by reducing overuse of health services and associated costs. Reviews research on conditions such as depression and anxiety co-morbid with chronic disease, somatizers, cardiovascular risk factors underlying chronic disease, substance use disorder, pain and opioid misuse, cigarette smoking and insomnia that show evidence for cost savings. The interventions are typically delivered in integrated settings such as primary care and based on the population health management model. Interventions include therapeutic lifestyle change, medication adherence, cognitive behavioral treatment and emerging eHealth and mHealth interventions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IBC	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IDN	101	Elementary Indonesian I	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
IDN	102	Elementary Indonesian II	Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): IDN 101 with C or better OR Visiting University Student
IDN	201	Intermediate Indonesian I	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 102 with C or better OR Visiting University Student
IDN	202	Intermediate Indonesian II	Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): IDN 201 with C or better OR Visiting University Student
IDN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
IDN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
IDS	140	Nature of Knowledge Systems	Introduces students to the structure and divisions of knowledge systems in the university setting. After surveying the different types of disciplines, students learn processes for using knowledge and insights from different sources in an integrative manner.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
IDS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	201	Intellectual Fusion	Introduces students to the history of interdisciplinarity. Examines major theories and methods of interdisciplinarity, and students use these methods to begin to examine complex interdisciplinary problems.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
IDS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	300	Theories& Applications Org Stds	Critical analysis and application of organizational theory and conceptual perspectives to identify and solve problems, emphasizing personal and organizational application.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
IDS	301	Becoming Interdisciplinary	The history of interdisciplinarity and methods of integrating knowledge and insights from multiple perspectives.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major OR Visiting University Student
IDS	302	Integration Skills	Develops integrative skills to create new understandings, models, products and ideas.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better OR Visiting University Student
IDS	310	Integration: Cultural Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand cultural diversity in contemporary U.S. society.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	311	Integration: Global Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand global issues.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
IDS	312	Integrative Perspect on Change	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine ideas, issues and institutions as they change over time.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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IDS	313	Integrtrv Persp on Chngng Wrld	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine global ideas, issues and institutions as they change over time.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	314	Integratr Persp Cultural Dynam	Applies integrative and interdisciplinary tools, methods, knowledge and skills to examine the shifting dynamics of cultural diversity in the United States.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
IDS	315	Integration: Social Contexts	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human behavior and interactions.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	316	Integration:Humanities Context	Explores how the practice of integrating knowledge, skills and perspectives from multiple sources can be used to better understand human thought and creativity.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	321	Interdisciplinary Issues	Focuses on an interdisciplinary topic from the perspective of multiple disciplines.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	355	Peace Corps Seminar	The Peace Corps: its mission, history, concerns and application process.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours OR Visiting University Student
IDS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	401	Integration: Experiential	Offers students the opportunity to apply their integrative skills in internships, directed projects or other experiential contexts.	Y	RSC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Interdisciplinary Studies or Interdisciplinary Studies (Organizational Studies) major; IDS 201 or 301 with C or better; IDS 302 with C or better; minimum 2.00 GPA OR Visiting University Student
IDS	402	Senior Seminar	Capstone course helps integrate classroom and experiential learning. Students choose among course topics that address their interests.	N	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Interdisciplinary Studies student; ENG 101, 105 or 107 with C or better; IDS 302 with C or better; minimum 2.0 GPA
IDS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
IDS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	OP4	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IDS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
IDS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
IDS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
IDS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
IED	320	Early Ed/Dev. Indigenous Child	Assists students in developing their knowledge of the development of Indigenous children and appropriate methods and strategies for effective instruction in preschool/kindergarten classrooms. Explores issues faced by Native American teachers to provide both an effective and meaningful educational experience for Native American and Alaska/Hawaiian Native children.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum junior standing; Credit is allowed for only IED 320 or IED 394 (Early Education & Development of Indigenous Children)
IED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
IED	410	History American Indian Educ	Philosophical and historical review of the development of American Indian education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Credit is allowed for only IED 410 or 510
IED	430	Lang/Literacy-Indig Peoples	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(HU or SB) & C	Credit is allowed for only IED 430 or 530
IED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
IED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
IED	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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IED	501	Indigenous Research Methods	Examines research, its methods and methodologies through an indigenous framework. Presents different methods, their connections to various research questions, and thoughts of ways to analyze extant educational data. Additionally, examines traditional methodologies, methodological clashes, and the insertion of critical indigenous research methodologies into the framing of the conversation. Offers an historical overview of research in indigenous communities.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student; Credit is allowed for only IED 501 or JUS 691 (Decolonizing Indigenous Research Methods)
IED	502	Indigenous Knowledges in Ed	Provides an overview of the literature on indigenous knowledge systems as they tie into education as broadly defined. Specifically focuses on indigenous knowledge systems and how it encapsulates relationships (between people and each other, humans and their environment, and humans and written and oral learning); responsibility; reciprocity; and respect. Covers both historical understandings of indigenous knowledge systems and the ways that these knowledge systems are currently being taken up by tribal peoples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student or postbaccalaureate student; Credit is allowed for only IED 502 or JUS 691 (Indigenous Knowledges in Education)
IED	503	Current Issues Indigenous Ed	Examines current issues facing indigenous student academic achievements and their path to higher education in the United States. Focuses on how structural and systematic dynamics influence indigenous education. Exposes students to literature and engages in discussions that allow them to analyze how policy, practice and lived-experiences shape indigenous education.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	510	History of Indigenous Educ	Philosophical and historical review of the development of indigenous education policies in both traditional and contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR undergraduate postbaccalaureate student; Credit is allowed for only IED 410 or IED 510
IED	530	Language/Literacy-Indig People	Examines issues, policies, theoretical foundations, and practices of indigenous peoples and other language minority communities from a sociolinguistics and language reclamation perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only IED 430 or 530
IED	535	Comm-Based Action Research	Examines the basic structures of what comprises the research paradigm called Community-Based Participatory Action Research (CBPR). CBPR is research that connects "research experts" with community members with an explicit focus on sharing power, knowledge and ownership of data and its concomitant resources and products. Offers a "how-to" for students in constructing research projects utilizing this lens/framework.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	585	Capstone	Allows students to build a culminating experience that reflects the breadth and depth of their MA experience and allows each student to explore a research area, interest, theme or question within Indigenous education. Develops final written products individually based on consultation with faculty. Each student has a two-faculty member committee to support the capstone project.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student OR postbaccalaureate student
IED	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student

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IED	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IED	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IED	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IED	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
IEE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	210	Intro Industrial Engineering	History of IE: IE career paths; ethical, social, and contemporary issues; introduces IE techniques, methods, and their application; case studies.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; BME 100, EGR 101, FSE 100 or SES 100 with C or better; MAT 265 or 270 with C or better OR Visiting University Student

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IEE	220	Business/Industrial Engr	Introduces business for industrial engineers, including business/financial structures, fundamentals of cost and accounting, role of business/engineering in society.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3		Prerequisite(s): Fulton Engineering undergraduate student; Introduction to Engineering course with C or better OR Engineering Management student; minimum 25 hours OR Visiting University Student
IEE	300	Economic Anlys for Engineers	Economic evaluation of alternatives for engineering decisions, emphasizing the time value of money.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3		Prerequisite(s): Fulton Engineering undergrad student; MAT 265 or 270 with C or better and Introduction to Engineering course with C or better OR Engineering Management Minor/Concentration: MAT 265 or 270 with C or better OR Visiting University Student
IEE	305	Information Systems Engr	Overview of computer and information systems applications. Topics include client/server; distributed computing; networks; process modeling; e-commerce; enterprise applications; Internet.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 OR Non-Fulton Engineering undergraduate student; CSE 205; minimum 3.00 GPA OR Visiting University Student
IEE	320	Extreme Excel	Today's workplace environment for engineers demands advanced skills in using worksheet applications such as Microsoft Excel. Course addresses this important gap in the curriculum to provide support for students who are in need of training on the various capabilities of the software. In particular, students become familiar with various functionalities that are critical for performing their jobs as engineers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only IEE 320 or IEE 394 (Extreme Excel) OR Visiting University Student
IEE	321	Professional Engineering Pract	Methods and tools for preparing students for work in industry including ethics, technical writing and communications; understanding how learned undergraduate skills are used in the workplace and in engineering problem solving.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	1		Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; IEE 300 with C or better; IEE 380 with C or better; Pre- or corequisite(s): IEE 369 with C or better if completed OR Visiting University Student
IEE	369	Work Analysis and Design	Planning, analysis and design of methods of accomplishing work. Emphasizes human factors, work planning, methods analysis and design, and work measurement. Applications in diverse fields.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3	L	Prerequisite(s): Fulton Engineering undergraduate student or Engineering Management minor/concentration; ENG 101, 105, or 107 with C or better; FIN 300 or IEE 300 with C or better OR Visiting University Student
IEE	376	Oper Rsrch Det Tech/Apps	Industrial systems applications with deterministic operations research techniques. Resource allocation, product mix, production, transportation, task assignment, networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	4		Prerequisite(s) with C or better: Indust Engr major; CSE 205; IEE 210; MAT 242, 342, or 343 OR Engr Mngmnt student or Math Concepts of Engr certificate student; CSE 205; MAT 242, 342, or 343 OR Industrial Engr grad student OR Visiting University Student
IEE	380	Prob & Stats Engr Prob Solving	Applications-oriented course with computer-based experience using statistical software for formulating and solving engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3	CS	Prerequisite(s): Fulton Engineering undergrad stdnt; Engr Management minor, or Math Concepts of Engr cert stdnt; MAT 266 or 271 with C or better OR Industrial Engr grad stdnt or Data Science, Analytics & Engr PhD stdnt OR Visiting University Student
IEE	381	Lean Six Sigma Methodology	Define, measure, analyze, improve and control (DMAIC) steps of six sigma methodology for business and quality improvement. Reviews the necessary statistical tools and illustrates their integration into the problem-solving process. Overview of lean principles and design for six sigma. Unique features of applying six sigma and DMAIC in transactional and service organizations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3		Prerequisite(s): IEE 380 with C or better; Credit is allowed for only IEE 381 or IEE 498 (Six Sigma Methodology) or IEE 498 (Six Sigma Green Belt) OR Visiting University Student
IEE	385	Engr Statistics - Probability	Conditional probability, common probability models, Goodness-of-fit tests and reliability models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgrm	3		Prerequisite(s): Fulton Engineering undergraduate or Mathematical Concepts of Engineering certificate student; IEE 380 with C or better OR Industrial Engineering graduate student OR Visiting University Student

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IEE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	412	Intro to Financial Engineering	Intensive exploration course of three phases: (1) a preparation phase for the terminology and financial lingo to be used throughout the semester, (2) introduction of more advanced financial topics such as portfolio formation, assessment and traditional portfolio theory, (3) several financial engineering topics such as the application of stochastic models to stock and derivatives pricing and financial risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 300 with C or better; IEE 380 with C or better OR Visiting University Student
IEE	421	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 376 with C or better; IEE 380 with C or better; IEE 385 with C or better; Credit is allowed for only IEE 421 or IEE 498 (Urban Operations Research) or IEE 521 or IEE 598 (Urban Operations Research) OR Visiting University Student
IEE	426	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: IEE 376 and 380 with C or better; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	431	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Fulton Engr undergrad stdt, Dig Cult (Media Processing) BA/BS major, or Engr Mgmt minor or concentration; ENG 101, 105, or 107 w/ C or better; min junior standing; Credit allowed for only IEE 431 or IEE 541 OR Visiting University Student
IEE	437	Human Factors Engineering	Studies the human psychological and physiological factors that underlie the design of equipment and the interaction between people and machines.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student or minimum 3.0 GPA; Credit is allowed for only IEE 437 or IEE 547 OR Visiting University Student
IEE	454	Risk Management	Methods and tools for identifying, assessing, mitigating and controlling risk in business and engineering design activities. Decision tools include cost-benefit analysis, decision trees, value of information, Bayesian statistical decision making, fault trees, and failure modes and effects analysis (FMEA).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management Minor/Concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	456	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering student; IEE 300 with C or better; junior or senior standing OR Engineering Management minor or concentration; IEE 300 with C or better; Credit is allowed for only IEE 456 or IEE 556 OR Visiting University Student
IEE	458	Project Management	Life-cycle processes for selecting and managing large-scale projects to ensure successful completion. Topics include project phases, defining milestones, work breakdown structure, group decision making and teamwork, organizational structure, human resource management, technological and economic feasibility, configuration management, budget control, and resource allocation and scheduling. Use of modern tools for planning and controlling project performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering major or Engineering Management minor or concentration; ECN 221 or IEE 380 with C or better; minimum junior standing OR Visiting University Student
IEE	461	Production Control	Techniques for the planning, control, and evaluation of production systems. Forecasting, inventory control, scheduling, enterprise requirements planning, supply chain design, and coordination.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering undergraduate student; IEE 376 with C or better; IEE 380 with C or better OR Visiting University Student

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IEE	470	Stochastic Operations Research	Modeling and analysis with emphasis on stochastic operations research. Models for stochastic processes, including Markov chains, queueing and decision analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Computer Science BS, Engineering Management BSE, Industrial Engineering BSE, Informatics BS, or Mathematical Concepts of Engineering cert student; IEE 376 with C or better; IEE 385 with C or better OR Industrial Engr graduate student OR Visiting University Student
IEE	474	Quality Control	Basic statistical process control techniques, capability analysis, design of experiments, and acceptance sampling plans.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): IEE 380 with C or better OR Visiting University Student
IEE	475	Simulating Stochastic Systems	Analyzes stochastic systems using basic queueing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	4	CS	Prerequisite(s): Fulton Engineering undergraduate student; CSE 205 with C or better; IEE 385 with C or better OR non-Engineering major; CSE 205 with C or better; IEE 385 with C or better; minimum 3.00 GPA OR Visiting University Student
IEE	477	Syst Dyn & Thinking	Methods for the modeling and analysis of system dynamics; metrics to measure business performance; continuous simulation tools for evaluation of system performance over time.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): CSE 205 with C or better; IEE 380 with C or better; Credit is allowed for only IEE 477 or IEE 498 (System Dynamics Engineering) OR Visiting University Student
IEE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		
IEE	485	Systems Design Capstone I	Senior capstone project provides students with the skills required to effectively complete a capstone project in design and development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s) with C or better: Engr Mgmt BSE major; ENG 101, 105, or 107; IEE 321; IEE 369; IEE 458 OR Industrial Engr BSE major; ENG 101, 105, or 107; IEE 321; IEE 369; IEE 376; Pre- or corequisite(s): Industrial Engr BSE major; IEE 475
IEE	486	Systems Design Capstone II	Project in design and development. Individual or team capstone project in creative design and synthesis.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3	L	Prerequisite(s): Engineering Management BSE or Industrial Engineering BSE major; minimum senior standing or postbaccalaureate; ENG 101, 105, or 107 with C or better; IEE 485 with C or better
IEE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6		Prerequisite(s): Barrett Honors student
IEE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		
IEE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-7		
IEE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-3		
IEE	505	Information Systems Engr	Studies information systems application engineering. Topics include information technology, data modeling, data organization, process mapping, application and database engineering, and user interface development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506

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IEE	506	Web-Enabled Decn Support Systs	Development and analysis of Web-enabled applications for decision support. Topics include: (1) Web application development using ASP.NET; (2) design for computing scalability, interface usability and cyber security; and (3) use of application development skills and design concepts to develop a decision support system consisting of database, analytical data processing, expert knowledge and reasoning, and user-friendly interface for enabling transitions from data to information, knowledge and decisions. Knowledge of database development is necessary to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only IEE 505 or IEE 506
IEE	511	Analysis of Decision Processes	Methods of making decisions in complex environments and statistical decision theory; effects of risk, uncertainty, and strategy on engineering and managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 498 (Analysis of Decision Processes) or 511
IEE	512	Intro to Financial Engineering	Introductory course on financial engineering covering traditional portfolio theory, forwards, futures, financial stochastic models, option pricing, and risk management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	520	Stat Learning for Data Mining	Surveys data analysis methods for massive data sets and provides experience in analysis with computer software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BMI 515, IEE 572, or IEE 578; Credit is allowed for only BMI 555 or CSE 572 or IEE 520
IEE	521	Urban Operations Research	Covers a sample of operations research (OR) techniques that can be used to model urban problems. Studies two main areas: (1) deterministic decision making, including linear programming and network flow problems, facility location, travel salesman and vehicle routing problems, and scheduling; (2) stochastic decision making, including probabilistic modeling, discrete Markov chains, Poisson process, queuing theory, spatially distributed queues and optimization under uncertainty.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 421 or IEE 521
IEE	526	Operations Rrsch in Healthcare	Quantitative methods for modeling and analysis of healthcare systems to address operational and tactical decision-making problems. Topics include forecasting, scheduling, decision making, facility location and layout, staffing, quality control and supply chain management in hospitals and healthcare delivery facilities.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only IEE 426, 498 (OR in Hospitals), 526 or 598 (OR in Hospitals)
IEE	530	Enterprise Modeling	Focuses on social, economic, and technical models of the enterprise with emphasis on the management of technological resources. Includes organization, econometric, financial, and large-scale mathematical models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	533	Scheduling	Provides the basic theory of scheduling and introduction to the applications domain.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	534	Supply Chain Modeling&Analysis	Techniques for modeling and analysis of supply chains. Inventory management, transportation/location models, value of information, channel alignment, risk pooling, contracts. Requires knowledge of basic statistics and probability and some optimization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	535	Intro Intl Logistics Systems	Exploratory project-oriented course that addresses domestic and international logistics practices from a high-level descriptive perspective and an analytical model-based perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	541	Engineering Administration	Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student; Credit is allowed for only IEE 431 or 541
IEE	545	Adv Simulating Stochastic Syst	Analyzes stochastic systems using basic queuing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
IEE	547	Human Factors Engineering	Study of people at work; designing for human performance effectiveness and productivity. Considerations of human physiological and psychological factors.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only IEE 437 or 547
IEE	552	Strategic Technologic Planning	Studies concepts of strategy, strategy formulation process, and strategic planning methodologies with emphasis on engineering design and manufacturing strategy, complemented with case studies. Presents and uses an analytical executive planning decision support system throughout course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student

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IEE	556	Intro to Systems Engineering	Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability. Graduate students are expected to have a background in and understanding of large-scale systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 456 or IEE 556 or IEE 598 (Intro to Systems Engineering)
IEE	561	Production Systems	Understanding how factories operate, how performance is measured, and how operational changes impact performance metrics. Operational philosophies, increasing production efficiency through quantitative methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	570	Advanced Quality Control	Process monitoring with control charts (Shewhart, cusum, EWMA), feedback adjustment and engineering process control, process capability, autocorrelation, selected topics from current literature.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	571	Quality Management	Total quality concepts, quality strategies, quality and competitive position, quality costs, vendor relations, the quality manual, and quality in the services.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	572	Design Engineering Experiments	Analysis of variance and experimental design. Topics include strategy of experimentation, factorials, blocking and confounding, fractional factorials, response surfaces, nested and split-plot designs.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	573	Reliability Engineering	Nature of reliability, time to failure densities, series/parallel/standby systems, complex system reliability, Bayesian reliability, and sequential reliability tests.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	574	Appl Deterministic Oper Rsch	Develops advanced techniques in operations research for the solution of complex industrial systems problems. Goal programming, integer programming, heuristic methods, dynamic and nonlinear programming.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	575	Appl Stochastic Oper Rsch Mdls	Formulate and solve industrial systems problems with stochastic components using analytical techniques. Convolution, continuous-time Markov chains, queues with batching, priorities, balking, open/closed queuing networks.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	576	Network Optimiz and Algorithms	Algorithms to solve network flow problems with an objective to reduce computational complexity by using appropriate data structures and computing procedures.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only IEE 576 or IEE 598 (Network Flows and Algorithms) or IEE 598 (Network Optimization and Algorithms)
IEE	577	Data Sci Sys Decision Analyt	Focuses on applied data science techniques for the system decision support in PYTHON. Also targets anyone who is interested in data analytics in general or plans to work with data in a future career (such as data scientist and data analytics). Highly encourages some prior knowledge about PYTHON. Focuses on the conceptual understanding of system modeling, statistical and machine learning, and optimization with some mathematical formulation. Also covers the main concept and some implementation of the latest development in data science, such as distributed computing, large-scale optimization, and deep learning. Furthermore, covers how to implement these models for different types of data, such as tabular data, images, text data. Finally, discusses how to interpret these models for decision support of complex systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student
IEE	578	Regression Analysis	Regression model building oriented toward engineers and physical scientists. Topics include linear regression, diagnostics, biased and robust fitting, nonlinear regression.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	579	Time Series Analy/forecasting	Forecasting time series by regression-based, exponential smoothing, and ARIMA model techniques; uses digital computer programs to augment the theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: Engineering Graduate student
IEE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	581	Six Sigma Methodology	The six sigma process improvement strategy of define, measure, analyze, improve, and control (DMAIC). Integrates and deploys statistical methods and other six sigma problem solving via the DMAIC framework. Requires background in undergraduate engineering statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering Graduate student
IEE	582	Response Surfaces/Process Opt	Classical response surface analysis and designs including steepest ascent, canonical analysis, and multiple responses. Other topics include process robustness studies, robust design, and mixture experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better

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IEE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	585	Six Sigma Capstone	The DMAIC (define, measure, analyze, improve, control) improvement strategy is applied in the formulation and execution of a six sigma project.	N	PRA	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Fulton Engineering graduate student; IEE 530, 561, 572, 573, or 578; IEE 570; IEE 581
IEE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-4		Prerequisite(s): Engineering graduate student
IEE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	605	Foundations of Information Sys	Introduces science and engineering technologies of information systems design and analysis with focus on industrial engineering applications. Topics include: design and analysis of computational algorithms; and data mining techniques for classification, clustering, feature extraction and data reduction problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): graduate Industrial Engineering student
IEE	620	Optimization I	First course of the PhD-level deterministic course series. Covers foundations of optimization and linear programming. Prior working knowledge of linear algebra and knowledge of how to formulate linear programs is required for this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	622	Optimization II	Introduces computational methods to solve optimization problems with integer variables and the mathematical theory behind them. Follows formulation of integer programming models with a survey of relaxation, decomposition and cutting-plane methods. Discusses various practical problems such as facility location, transportation and distribution problems. Assigns computational examples using the software IBM ILOG OPL.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 620; Credit is allowed for only IEE 622 or 598 (Optimization II)
IEE	640	Prob. & Stochastic Processes	Presents fundamentals of probability and stochastic processes from a non-measure theoretic point-of-view to develop (a) basic model building and probabilistic reasoning skills, and (b) an understanding of important qualitative characteristics of some basic stochastic processes used to model dynamical systems with noise. Topics include a review of probability theory with particular attention to conditional probability and expectation; Markov chains; Renewal theory and the Poisson process. Considers applications in reliability, inventory theory, queueing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Pre-requisite: IEE 470, Graduate Industrial Engineering major; Credit is allowed for only IEE 598 (Prob & Stoch Model) or 640

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IEE	670	Mathematical Statistics	Introduction to the field of mathematical statistics at a level intended for first-year PhD students in Industrial Engineering. Builds a solid background in the principles, concepts, and techniques of mathematical statistics. Prepares students for advanced study and research in statistics, and is useful for understanding statistical data analysis techniques and developing statistical thinking. Completion of at least one course in probability and statistics is required prior to taking this class.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	672	Adv Topics-Experimental Design	Multilevel and mixed-level factorials and fractions, design optimality, incomplete blocks, unbalanced designs, random effects and variance components, analysis of covariance.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	3		Prerequisite(s): Engineering MS, MSE or PHD major; IEE 572 with C or better
IEE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Pre-requisite: Industrial Engineering MS, MSE or PHD student
IEE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IEE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Industrial, Systems & Operations Engineering Prgm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	100	Intro to Info Technology	Project-based introduction to the key concepts, tools and devices underlying today's technologies. Introduces computer hardware, software and system architecture, the Internet, the World Wide Web and information technology ethics. Forms a foundation for future courses offered in the Information Technology major and the information technology discipline.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	101	Info Tech Programming Logic	Introduces basic analysis and synthesis procedures for an understanding of information system logical structures. Topics include: identifying organizational domains for potential automation, informational descriptions (scenarios) of those domains, and program structure and logical designs for potential problem/opportunity resolution. Uses graphical and textual models to express the logic and uses Python to implement the logic.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Credit is allowed for only IFT 101 or IFT 194 (Information Technology Programming Logic) OR Visiting University Student
IFT	103	OS Architecture	Introduces Linux, Windows and Mac operating systems. Begins with an overview of the hardware of modern computer and operating systems. Also introduces user management, memory management, network and disc storage. Provides hands-on practices to introduce computer and operating system virtualization. Provides an isolated environment to practice and do labs on advanced topics in the field of memory management, different portable data file input/output. Students learn Command Line Interface (Bash/Power Shell) to interact with computers and transfer data files from one operating system to another operating system. Also introduces basic computer networking and hardware security.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		

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IFT	166	Intro to Internet Networking	Introduces the OSI model and the protocol layers associated with information communication technology. Describes the role and purpose of each layer. Covers various network topologies, communications protocols, transmission media, networking hardware and software, network management and troubleshooting. Students gain hands-on experience in basic network configuration.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		
IFT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	200	Info Model, Store & Retrieval	Covers the different types of data modeling with emphasis on the relational model. Develop solutions for data modeling problems, starting with identifying user and data requirements. Fundamentals of database design going through the conceptual, logical and physical data modeling steps. Create relational databases in order to store data. Utilize Structured Query Language (SQL) to represent, retrieve, and manage a database. Students learn how applications connect to databases, and interact with them.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student
IFT	202	Fdn of Info and Comp Sys Secur	Introduces information technology (IT) security aspects and how technology can be vulnerable to unwanted intrusions. Project-based introduction to privacy, ethics, legal, social and professional responsibilities for information technology. Principles of information security and assurance and their implications on access. Tools and methods to identify intrusion, best security practices. Securing communications and applications.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better; IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student
IFT	210	Intro to Java Technologies	Introduces Java as a platform for application development. Fundamental concepts of the Java language (classes, objects, conditions, loops, arrays), object-oriented programming and design (inheritance, polymorphism, interfaces), exceptions, and basics of the user interface programming.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 101 with C or better OR Visiting University Student
IFT	220	Man Config & Active Dir	Introduces the concept of Directory Services by exploring Active Directory from design and implementation. Further explores the role Active Directory plays in managing computer policy and security, user's identity management and authentication, and configuration management of both client computers and servers. Introduces the use of PowerShell scripting. Students implement their own Active Directory domain and then use it to perform various configuration management tasks. Assumes no previous experience with Configuration Management concepts or Active Directory.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better; IFT 166 with C or better OR Visiting University Student
IFT	250	Intro to UNIX Utilities	Technical overview (introduction) to Unix-style operating systems such as Linux. Covers a broad range of features of the operating system from core system technologies such as the Filesystem Hierarchy Standard (FHS), to using the shell and common Unix/Linux utilities to accomplish day-to-day computing tasks. Includes output redirection, file manipulation, basic system and environment configuration, and system monitoring. Assumes no prior experience with the Unix operating system.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 103 with C or better OR Visiting University Student
IFT	266	Network Info Comm Tech	Focuses on the physical layer, data-link layer and network layer of the OSI model. Introduces data communications, including signals and transmission impairments. Also introduces network topologies and local-area networks with particular attention on the network switch. Network layer protocols (IPv4 and IPv6) are included with focus on IPv6. Subnetting (classful and classless) are explored in more detail and Variable Length Subnet Mask) VLSM is introduced.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 166 with C or better OR Visiting University Student
IFT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	300	Intermediate DB Mgmt Systems	Fundamental methods in managing data-oriented systems. Relational, object and hierarchical data architectures. Query languages including SQL. Semantics of transaction processing. Database system architectures including cloud-based, client-server and embedded databases. Security and privacy issues associated with SQL-structured databases. Modern trends in data management including unstructured data type management, data mining and business analytics. Describes NoSQL data management platforms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student

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IFT	301	Web Programming for HCI	Human-computer interaction design for rich media systems. Design processes, tools and principles for applications that are highly interactive with their users and which include multiple input/output modalities and multimedia. Project-driven course. Key topics include wireframes and persona structures associated with HCI.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better OR Visiting University Student
IFT	310	Info Systems Project Dev	Intense review of information technology organizational management; project development for IT infrastructure, management and security systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 202 or 394 (Intro to Cyber Security) with C or better; IFT 266 or 394 (Networking Character & Protocols) with C or better OR Visiting University Student
IFT	320	Managing the Cloud	Provides a hands-on comprehensive study of Cloud concepts and capabilities across the various Cloud service models including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Studies the latest solutions for cloud computing developed by Google, Amazon and Microsoft.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 202 or 394 (Intro to Cyber Security) with C or better; IFT 266 or 394 (Networking Charac & Protocols) with C or better OR Visiting University Student
IFT	360	Applications in AI	Artificial Intelligence (AI) is one of the most exciting technologies, both shaping and challenging the future of our industries and workforce. AI is a multidisciplinary area comprising theoretical, experimental and applied investigations of intelligent systems. Converging technologies along with natural language processing, big data and the Internet of Things (IoT) are driving the growth of AI. An introductory course in AI is a good place to start as it gives students an overview of the components, brings students up to speed on the AI research and developments to date. Covers examples of AI in use today such as Web crawlers, how humans detect financial frauds, self-driving cars, facial recognition systems, and natural language processors. Provides hands-on experience with the AI programming of different intelligent agents.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better; IFT 210 with C or better OR Visiting University Student
IFT	365	Applied Programming Lang IT	Object-oriented programming (OOP) with a focus on advanced techniques used in developing applications. Emphasizes problem solving using the software development life cycle. Supports application creation and testing through study of programming basics, data structures and OOP fundamentals resulting in a framework of collection classes students use to solve problems and create applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 210 with C or better OR Visiting University Student
IFT	366	TCP/IP and Routing	In-depth study of the TCP/IP protocol suite and router technology. Covers the underlying applications, components and sub-protocols that make up the TCP/IP suite. Emphasizes the fundamentals of routing, router configuration, understanding routing protocols and setting up access control lists.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 or 394 (Networking Charac & Protocols) with C or better OR Visiting University Student
IFT	370	Mobile Computing & Apps for IT	Infrastructure and architecture of mobile computing, wireless protocols, design principles, patterns and practices for mobile app development Android and iPhone platforms. Presents the development processes for both types, focusing on Android development with Java in providing hands-on development of applications in support of an applied practice learning experience.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 210 with C or better; IFT 301 with C or better OR Visiting University Student
IFT	372	Wireless Fundamentals	Foundational course in wireless networking includes systems-level coverage of advanced information communication technology (ICT) focusing on digital wireless communications systems used in today's ICT networks. Introduces communication techniques that allow high-speed mobile connectivity. Includes topical areas in noise, modulation techniques, signal path loss, basic antenna theory and other similar topics required to understand how a wireless network architecture is developed. Also introduces the characteristics of both Wi-Fi based systems and smart phone-based systems. Specific topics include: binary communications, QPSK, PCM, TDM, QAM, OFDM, OFDMA and the wireless environment. Lays the foundation for fully understanding how to create and develop a wireless network.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 266 or 394 (Networking Character and Protocols) with C or better OR Visiting University Student

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IFT	380	Advanced Systems Config Mgmt	Explores in-depth advanced configuration management concepts and methods of deploying, configuring, monitoring and reporting on systems (both servers and workstations). Utilizes widely used CM tools to help illustrate and study patch management, application deployment, OS deployment, remote control, configuration baselines, drift remediation, inventory management and compliance reporting. Uses PowerShell as a scripting language. Assumes previous experience with directory services and PowerShell and introduces query languages without expecting prior experience.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 220 with C or better OR Visiting University Student
IFT	381	Information System Security	Fundamental course in information systems security that focuses on various security concepts. Students learn about intrusion systems and techniques to identify and help limit incursions. Familiarizes students with the different types of firewalls and their applications in the network. Details software security, hacking techniques and operating systems security. Moreover, emphasizes the initial security and privacy issues of some new technologies such as cloud computing, fog computing, Internet of Things (IoT), and blockchain. Finally, presents the fundamentals of AWS security testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 202 or 394 (Intro to Cyber Security) with C or better OR Visiting University Student
IFT	383	Shell and Script Program/UNIX	UNIX operating system programming of shells, environment and 4th-generation languages and tools, such as sed, awk, perl, grep, make.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 250 with C or better OR Visiting University Student
IFT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	401	Info Tech Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s) with C or better: IFT 250; IFT 266 or 394 (Networking Characteristics & Protocols); IFT 300 (IFT 433); IFT 301; IFT 310; IFT 381; minimum senior standing
IFT	402	Info Tech Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 401 with C or better
IFT	410	Big Data Tools and Practices	Architecture of Hadoop clusters at both the hardware and system software levels. Applies Hadoop and related Big Data technologies such as MapReduce, Pig, Hive and Impala in developing analytics and solving the types of problems faced by enterprises today. Expects programming experience in Java or Python and a general understanding of databases, networking and distributed systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 200 with C or better OR Visiting University Student
IFT	420	Cloud Architecture Info Tech	Cloud technology has increased usability and reduced the cost of computing for global business environments. Leveraging the interoperability and rapid time to deployment allows for a high level of availability and scalability. Provides an overview of the methodologies and techniques that address cloud automation, design patterns, and optimization which are used to build a well-architected cloud computing environment. Students have the opportunity to learn how to deploy a fault-tolerant, efficient and scalable cloud infrastructure that considers important factors as security, reliability and high availability. Leverages the AWS Academy Cloud Architecting course, which supports students in preparing for AWS Certified Solutions Architect - Associate exam.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; IFT 366 with C or better OR Visiting University Student
IFT	421	Data in the Cloud Info Tech	Examines the architecture, frameworks and tools used to develop, analyze and communicate data using cloud services. Topics include the benefits, risks and opportunities represented by cloud technologies as well as the unique tools and infrastructure. Also covers cloud data solutions, data acquisition, migration, security, identity management and disaster recovery.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; Pre- or corequisite(s): IFT 300 with C or better if completed OR Visiting University Student

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IFT	422	Cloud Security & Operations IT	Cloud security solutions are required to address availability, authentication, integrity, confidentiality and auditing. It starts with a combination of operating system virtualization, processes automation and dynamic response to changing business conditions. Covers the way traditional models of security, governance, and operations have changed due to the fact that the cloud user and the cloud provider both hold responsibilities for the security measures. Provides an overview of the methodologies and techniques to create and maintain a secure well-operated cloud computing environment. Students have the opportunity to learn how to manage, secure and scale cloud infrastructures and their underlying functions for scaling, container computing, monitoring, database services and account security. Leverages the AWS Academy Cloud Operations course, which supports students in preparing for the AWS SysOps Administrator - Associate exam and (ISC)2 CCSP exam.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 320 with C or better; IFT 381 with C or better OR Visiting University Student
IFT	443	Analyzing Big Data	Data mining and statistical techniques that arise in data analytic applications. Students learn and practice working with big data using data analytic techniques presented in earlier coursework. Discusses one or more applications associated with data analytic techniques. Practices using advanced techniques that build on the knowledge provided in earlier coursework and knowledge gained from a statistical methods course. Familiarity with databases and statistics are essential.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 410 (IFT 333) with C or better OR Visiting University Student
IFT	458	Middleware Prog & Database Sec	Covers the main concepts of middleware technologies. Includes the various methodologies used to integrate applications, databases and Web services. Students develop multilevel applications using programming/scripting languages (such as PHP, Java, Python, Perl) which access data stored in a database. Middleware programs typically control database access and protect database SQL programs from security breaches. Students access the data from applications and other Web technologies such as XML, as well as protecting the data from unauthorized access.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): Graphic Information Technology (Full-Stack Web Development) BS major; GIT 215 with C or better OR IFT 301 with C or better; IFT 383 with C or better; Credit is allowed for only ACO 321 or IFT 458 OR Visiting University Student
IFT	460	Mnging Intel Device Entrpr Env	Systems and devices with unique identifiers that are connected to the Internet. Hands-on study of enterprise-related intelligent applications including energy, logistics, industrial control, retail and agriculture, among multiple domains. Includes the development of working code for real-world Internet of Things (IoT) applications. Requires high-level programming skills. Incorporates a taxonomy of IoT systems with increasing levels of complexity. Programming aspects of IoT devices and rapid prototyping follows the foundational information. Covers IoT data analytics and tools used to manage these intelligent devices.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s) with C or better: IFT 200; IFT 202; IFT 250; Credit is allowed for only IFT 460 or IFT 494 (Managing Intelligent Devices in an Enterprise Env) or IFT 598 (Managing Intelligent Devices in an Enterprise Env) OR Visiting University Student
IFT	466	Adv Computer Networks Info Tec	Redundancy protocols, QoS and the implementation of wide area networks. Focuses on advanced concepts and implementation of EIGRP, OSPF, BGP and extended ACLs. Also covers in detail implementing routing from an IPv6 perspective. Additional topics include cloud computing and SDNs.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 366 with C or better OR Visiting University Student
IFT	475	Security Analysis	Processes used in cyber security analyses. Presents through exercises techniques to ensure confidentiality, integrity and availability. Includes vulnerability assessments based on faulty software design. Explores malicious code and computer crime, including operating system (OS) root kits. Students are instructed in how to conduct analyses in support of cyber security initiatives.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 381 with C or better OR Visiting University Student
IFT	482	Network Forensics	Use and creation of advanced network forensics tools: intrusion detection and prevention, honeynets, traffic routing and management, and data reduction and graphing tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 475 with C or better; Credit is allowed for only ACO 331 or IFT 482 OR Visiting University Student
IFT	483	Developing Security Policy	Focuses on development of security policy, risk solutions and incident response facilities. Using the information security framework, identifies strategies and processes used in governance, risk management, asset management, human resources and physical security to create, evaluate and audit security policies.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 381 with C or better OR Visiting University Student
IFT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		

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IFT	488	Systems Administration of UNIX	UNIX administration of system and user services using command line and GUI tools. System security and forensics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): IFT 383 with C or better OR Visiting University Student
IFT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6		Prerequisite(s): Barrett Honors student
IFT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IFT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		
IFT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-3		
IFT	510	Princ of Comp & Info Tech Arch	A comprehensive introduction to computer and information technology architectures. Provides a detailed understanding of computer architecture, system software and network architecture, including the relationships among these IT-related entities. Forms a technical foundation for understanding current IT-related technologies and how they work as an integrated system. Begins with the historical study of computing and networks and progresses through computer and networking architecture. Topics include principles of a computer's physical and operating system architecture and its relationship to a network's architecture, including hardware and software functionalities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	520	Adv Info Systems Security	Advanced methods that can be used to make the information secure in different environments. Provides details about modern cryptographic algorithms and their applications to make the IoT, Cloud and Big data information secure. Also provides comprehensive information about how to make wireless networks secure, different case studies and application in a real environment. Finally, covers the human aspect of information security for identifying issues and developing real solutions.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	530	Adv DB Management Systems	Teaches advanced concepts of database management systems, for example, further dependencies and higher normal forms, indexing, transaction and locking, concurrency control, database security, backup and recovery, accessing XML data, query optimization techniques, and databases for web applications. Students expand their SQL programming knowledge through focused database design practice with an increasingly complex problem and solution set using Microsoft SQL Server. Introduces NoSQL for SQL developers and about unstructured "big data" databases and hands-on experience with MongoDB. Project-driven course builds on the background presented in Software Development for Information Technology. Familiarity with information modeling and software development process is essential.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	540	Info Systems Development	Proven techniques and methodologies for modeling information requirements and organizational data resources with a strong focus on gleaning information from data. Students learn how to discover, document and structure functional system requirements and user interface requirements at a level appropriate for advanced information technology practitioner, and develop conceptual data models. Covers the phases of a generic systems development life cycle (SDLC), object-oriented analysis and design (OOAD) with UML modeling, and Agile methodologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	545	Advanced Security Analysis	Advanced inspection of concepts and exercises related to security analysis. Expands analysis techniques to include wireless protocols, interception techniques, man-in-the-middle attacks, forgeries, cloned and replay attacks, cyber warfare, data corruption, data leakage and peer-to-peer networks. Through a variety of exercises, students work with tools and technologies available on the commercial market. The teaching environment is designed to impart the skills required by a corporate security professional.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Information Technology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		

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IFT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Information Technology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IFT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Information Technology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	601	Re-Thinking Global Development	Traces and analyzes the origins of international or global development as theory, concept, policy and practice. Studies the key theories that have been influential in development conceptualization and policy, within the context of the history in which they arose; evaluates the results; and considers future trends and scenarios considering the critiques of such mainstream approaches.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	602	Innovation for Inclusive Devel	Clear advances in economic, social and political development and wealth generation have been uneven, and have resulted, as well, in an increasing gap between wealth and poverty. Continuing in the same direction could exacerbate existing problems, and in this course, we imagine different future outcomes and how to make policy today for a better future.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	603	Methods-Research Global Devel	Provides a practical introduction to research methods and methodologies in global development. Through hands-on exercises, exposes students to issues around quantitative and qualitative data collection and management, analysis and interpretation of results, and research ethics and practice in development as well as application of research to policy development and its implications.	N	SEM	N	GNA	College of Global Futures	School for the Future of Innovation in Society	4		Prerequisite(s): degree- or nondegree-seeking graduate student

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IGD	604	Colloquium-Innovation Glob Dev	This student-centered and faculty-mentored colloquium provides critical opportunities for leadership, organization, planning and implementation of events related to global development studies. Encourages students to propose and plan their own events, focused on issues and topics of importance to them, and utilizing the resources on the ASU campus and Phoenix area.	N	SEM	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	2		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	784	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
IGD	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection, analysis and writing.	Y	RSC	Y	Z2	College of Global Futures	School for the Future of Innovation in Society	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	120	Drawing for Industrial Design	Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for industrial design thinking.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design BS or Industrial Design BSD major OR Visiting University Student
IND	121	Principles-Industrial Design I	Industrial design as a language and process for creative thinking and realization.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Industrial Design major. Corequisite(s): IND 122
IND	122	Prin for Industrial Design II	Continued exploration of industrial design as a language and process for creative thinking and realization.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): IND 120 with C or better; Environmental Design or Industrial Design major. Corequisite(s): IND 121
IND	227	Visual Methods-Problem Solving	Introduces conceptual design activity based on the mind-eye-media feedback loop. Graphic language used to represent conjecture, analysis, synthesis of objects, and their contexts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major, IND 122 with C or better; Passed Milestone; Corequisite(s): IND 260 OR Visiting University Student
IND	228	Imaging and Visualization	Design activities stressing graphic language abstraction practiced for presentation. Discusses structure of criticism, including description, interpretation, and evaluation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 227 with C or better; Co-requisite: IND 261
IND	242	Materials and Design	Materials application in design. Introduces characteristics and properties of metals and organic materials, including plastics, and inorganic materials.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	243	Design - Ecology&Social Equity	Explores the role of design in the ecological crisis; materials, processes, strategies and methods to design more ecologically friendly and socially equitable products.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	260	Industrial Design I	Introduces the method and process of the industrial designer. Determinants necessary in small product design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; IND 122 with C or better; Passed Milestone; Corequisite(s): IND 227 OR Visiting University Student
IND	261	Industrial Design II	Issues of physical form development related to product and design; form development properties of paper, fibers, wood, metal, and plastics.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 260 with C or better; Co-requisite: IND 228
IND	316	20th-Century Design I	European and American design from 1850 to 2000 with thematic emphases on worldview, technology, transportation, economics and nature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
IND	317	20th-Century Design II	European and American design from 1850 to 2000 with thematic emphases on communication, education, material culture, politics and society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours
IND	327	Presentation Graphics	Studies methods for portfolio and professional product presentation using graphic media for information transfer. Stresses aesthetic judgment, organization, and craftsmanship .	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Industrial Design BSD major; Corequisite(s): IND 360 OR Visiting University Student
IND	328	Graphics for Industrial Design	Investigates and applies applications and planning to the development of an identity for a product line structured as a system.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisites: Industrial Design student; IND 327 with C or better; Co-requisite: IND 361

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IND	344	Human Factors in Design	Man-machine environment systems; human characteristics and behavior applied to design of products, systems, and their operating environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
IND	354	Principles of Product Design	Influences of physical and mechanical concepts in product design; mechanisms, kinematics, and fastening systems. Concepts of analysis for product design. Influences of concepts on aesthetics.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Digital Culture (Design) BA, Industrial Design BSD, or Pre-Industrial Design major; PHY 111 with C or better
IND	360	Industrial Design III	Methods of visual thinking, conceptualization, and ideation related to building skill levels in professional design presentation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 261 with C or better; Corequisite(s): IND 327 OR Visiting University Student
IND	361	Industrial Design IV	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials, and manufacturing.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Pre-requisites: Industrial Design student; IND 360 with C or better; Co-requisite: IND 328
IND	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IND	424	Packaging Design	Reviews how companies package and brand their products to attract consumers. Students examine the packaging design of their choice of product in the marketplace and create packaging design by considering user experience, sustainability aspect, materials and branding. Final-review format includes a full-scale 3D mockup of the packaging redesign, supplemented with graphical data and drawings.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Graphic Design, Industrial Design, or Interior Design major; minimum 60 hours; Credit is allowed for only IND 424 or IND 494 (Packaging Design) or IND 494 (Product Branding for Package Design)
IND	460	Design Project I	Complete analysis of the product unit as an element of mass production, featuring marketing, technology, human factors, and visual design. Emphasizes professional standards.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 361 with C or better; Corequisite(s): IND 470 OR Visiting University Student
IND	461	Design Project II	Product design, with emphasis in systems interaction. Culmination of design process and technique. Encourages individual project direction.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Industrial Design BSD major; IND 460 with C or better
IND	464	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
IND	465	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
IND	470	Prof Practice-Industrial Design	Business procedures, management techniques, accounting systems, ethics, and legal responsibilities of the design professions.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prerequisite(s): Design Studies minor student; ENG 101, 105, or 107 with C or better OR Industrial Design BSD major; ENG 101, 105, or 107 with C or better; Corequisite(s): IND 460 OR Visiting University Student
IND	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Industrial Design BSD major; IND 361 with C or better
IND	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
IND	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
IND	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IND	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
IND	504	Contemporary Issues IND Design	Survey of contemporary design issues in industrial design as defined by the faculty and students.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Industrial Design student; Corequisite(s): IND 521; Credit is allowed for only IND 504 or IND 598 (Industrial Design Seminar: Contemporary Issues)
IND	510	Foundation Ind Design Studio	Fundamentals of industrial design, methodology, visualization and representation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 510 or IND 590 (Foundation Industrial Design Studio)

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IND	511	Core Industrial Dgn Studio I	Emphasizes developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials and manufacturing.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 510 with C or better; Credit is allowed for only IND 511 or IND 590 (Core Industrial Design Studio I)
IND	512	Core Industrial Dgn Studio II	Industrial design projects with an emphasis on research and visualization techniques.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Master of Industrial Design student; IND 511 with C or better; Credit is allowed for only IND 512 or IND 590 (Core Industrial Design Studio II)
IND	516	The Culture of Objects	Examines the meanings of objects from the perspectives of design, material culture, philosophy and cultural studies. Covers such concepts as form language, planned obsolescence, object fetishism, product semantics, consumer value, production labor and user needs. Explains these ideas theoretically but also with case studies of historical and contemporary objects. Looks behind the scenes and beneath the surface at some of our most familiar and iconic objects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design or Master of Science in Design (Industrial Design or Interior Design or Visual Communication Design) student; Credit is allowed for only IND 516 or DSC 598 (The Culture of Objects)
IND	521	Adv Industrial Des Studio I	Design language, motivation and inspiration, form exploration sketching, rough form study mock-ups, form development, and presentation. Product redesign. Students create new design language proposals for an existing product and redesign the product based on one of these languages. Provides instruction and opportunities to understand product design language and how to redesign existing products with different design guidelines. Results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Industrial Design major. Credit is allowed for only IND 521 or IND 590 (Advanced Industrial Design Studio I)
IND	522	Adv Industrial Des Studio II	New product development with emphasis on design research, problem solving and functional/aesthetic development. Preliminary research about human behavior and health promotion. Based on the research findings, students conduct design research in teams and work on individual design projects. Student project results include evidence of concept development (sketches, drawings, models); functional development; human factors and ergonomic considerations; materials and process specifications; sustainability recommendations; and final appearance visual materials and models (virtual and physical). Project-based course includes readings, presentations, critical analysis, discussion, and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 521. Corequisite(s): DSC 501. Credit is allowed for only IND 522 or IND 590 (Advanced Industrial Design Studio II)
IND	532	Solving Problems with LCA	Teaches the method known as Life Cycle Assessment (LCA), which quantitatively estimates the environmental health and human health performance of materials, energy sources and processes. This science-based method informs design teams how to reduce or eliminate complex environmental problems caused by the production, use and disposal of physical products and related services. Teaches attributional LCA that conforms to ISO 14040-series LCA guidelines.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; IND 522 OR Master of Science in Design (Industrial Design) student; Credit is allowed for only IND 532 or IND 598 (Solving Problems with LCA)
IND	544	Human Factors Sys/Documentatn	Advanced topics associated with theory and methods of human factors in design. Individual projects stressing problem organization, evaluation, and documentation.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
IND	548	Design for Sustainable Dev	Research on designing systems that are economically viable, ecologically friendly, and socially equitable.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	550	Furniture Design	Explores furniture design and production methods for industrial design.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Master of Industrial Design student; Credit is allowed for only IND 550 or IND 598 (Furniture Design)
IND	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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IND	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IND	621	Adv Industrial Des Studio III	Structured around the Design School traveling-studio model, this studio challenges students to identify new design concepts that improve society and the natural environment while also delighting users and creating value for business. For approximately one week, students travel to an off-campus location to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 522
IND	622	Adv Industrial Des Studio IV	Challenges students to create new design concepts that improve society and the natural environment while also delighting users and creating value for business. Requires some independent direction by the student; however, instructor assigns deadlines and expectations for deliverables, and requires cooperation and collaboration among students. Project-based course includes readings, presentations, critical analysis, discussion and the public exhibition and presentation of design work.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): IND 621
IND	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	111	Interior Desgn Issues/Theories	Interiors issues, theories, and philosophies. Emphasizes unique social and cultural factors that shape 20th-century design concepts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	
INT	120	Design Fundamentals I	Development of visual literacy. Introduces drawing and graphic representation as methods of seeing and problem solving.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Architectural Studies, Environmental Design, Interior Design, or Landscape Architecture major; Credit is allowed for only ALA 121 or INT 120 OR Visiting University Student
INT	121	Intro Cmptr Modl-Interior Dsgn	Computers in interior design, including software concepts, specific packages, and problem solving, illustration, typography, modeling, and animation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	CS	
INT	122	Principles of Design	Applied visual vocabulary: studio experience exploring applications, process and conceptual development of the principles of order and composition.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design or Interior Design major; INT 120 with C or better; Corequisite(s): INT 124
INT	123	Introduction to CAD and BIM	Introduces AutoCAD computer-aided design and Revit building information modeling principles and strategies for designers of the built environment.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		
INT	124	Design Fundamentals II Lecture	Theory and applications of basic design principles, history and theory of how architecture, interior design and landscape architecture design is impacted by basic design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Architectural Studies BSD or Environmental Design BS or Interior Design BSD or Landscape Architecture BSLA major; Corequisite(s): ALA 122 or INT 122; Credit is allowed for only ALA 124 or INT 124
INT	131	Design and Human Behavior	Applies conceptual design to issues of programming and space planning, user needs, and behavior.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	SB	

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INT	223	Drafting for Interior Design	Orthographic, paraline, axonometric, and perspective projection; shades and shadows; and basic descriptive geometry for interior designers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Passed Milestone; Corequisite(s): INT 261 OR Visiting University Student
INT	253	Interior Matrix/Finishes/Spec	Survey, evaluation, and specification of materials, finishes, and performance criteria for interiors.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; INT 261 with C or better
INT	261	Interior Design Studio I	Studio problems in interior design related to behavioral response in personal and small-group spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; passed milestone; Corequisite(s): INT 223 OR Visiting University Student
INT	262	Interior Design Studio II	Focuses on environments that entertain or host the public, including but not limited to nightclubs, restaurants, theaters, hotels, city and country clubs, golf facilities, cruise ships and conference facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; INT 261 with C or better OR Visiting University Student
INT	310	History of Interior Design I	Evolution of interior design as an expression of cultural influences from the ancient periods to 1835. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): minimum 45 hours OR Visiting University Student
INT	311	History of Interior Design II	Evolution of interior design as an expression of cultural influences 1835 to present. Analysis of interior architecture, planning and lighting of interior spaces, and furniture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Pre-requisite(s): INT 310 with C or better
INT	341	Interior Codes:Public Welfare/	Codes and regulations as performance criteria for interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisite: Interior Design student; Co-Requisites: INT 253; INT 262
INT	351	Ambient Environment	Surveys environmental control systems, acoustics, and lighting issues.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; MSE 208, PHS 208, or PHY 101 with C or better; Corequisite(s): INT 352; INT 362 OR Digital Culture (Design) BA major OR Visiting University Student
INT	352	Construct Methods/Inter Desig	Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 362 OR Visiting University Student
INT	354	Construction Documents	Elements of construction drawing sets, application of codes and specifications, and contract administration.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Interior Design student; Co-requisite: INT 363
INT	362	Interior Design Studio III	Investigates interior design issues in hospitality and retail environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; Corequisite(s): INT 351; INT 352 OR Visiting University Student
INT	363	Interior Design Studio IV	Explores the poetics of materials and their assemblage in the design of public and private spaces.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 362 with C or better; Corequisite(s): INT 354
INT	381	Preinternship Seminar	Preparation of internship materials that produce and enhance a successful internship experience.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite: INT 262
INT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	412	Hist Decorative Arts-Interiors	Design of decorative arts as an expression of cultural influences and as an extension of interior spaces.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): INT 311 with C or better. Credit is allowed for only INT 412 or INT 515
INT	413	Hist Textiles-Interior Design	Cultural and historical expression of textiles as related to interiors.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 412 with C or better. Credit is allowed for only INT 413 or INT 516
INT	415	Latin American Design	The impact of Latin American culture and civilization on design throughout the Americas.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): minimum junior standing; Credit is allowed for only INT 415 or INT 494 (Design and Culture in Latin America) OR Visiting University Student
INT	446	Furniture Design & Production	Design, construction, cost estimating, and installation in interior furniture and millwork.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Pre-requisite: Graphic Design BSD, Interior Architecture BSD or Industrial Design BSD student
INT	464	Interior Design Studio V	Studio problems in interior design-related issues in work environments.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 363 with C or better; Corequisite(s): INT 471 OR Visiting University Student
INT	465	Interior Design Studio VI	Advanced interior design problem solving related to institutional facilities.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Interior Design BSD major; INT 464 with C or better; Corequisite(s): INT 472 OR Visiting University Student
INT	471	Facilities Management	Facility management process in large-scale organizations. Planning, long-range forecasting, and productivity. Project management methodologies using micro-based software programs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		

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INT	472	Prof Practice/Interior Design	Business procedures, project control, fee structures, and professional product liabilities.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	2		Pre-requisites: Interior Design student; Co-requisite: INT 465
INT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Interior Design BSD major; INT 363 with C or better
INT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
INT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
INT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
INT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
INT	510	Foundation Int Arch Studio	Fundamentals of interior architectural design, methodology, visualization and representation.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Interior Architecture MIA student; Credit is allowed for only INT 510 or INT 590 (Foundation Interior Architecture Studio)
INT	511	Core Int Arch Studio I	Applies design fundamentals in interior architectural problems, including construction, materiality, technology, programmatic and environmental determinants.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Architecture MIA student; INT 510 with C or better; Credit is allowed for only INT 511 or INT 590 (Core Interior Architecture Studio I)
INT	512	Core Int Arch Studio II	Applies interior architectural design fundamentals to increasingly complex problems, including specific sites and activities.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): Interior Architecture MIA student; INT 511 with C or better; Credit is allowed for only INT 512 or INT 590 (Core Interior Architecture Studio II)
INT	519	Designing with Materials	A comprehensive overview of technical specifications, materiality and interior construction; emphasizes the selection and specification of interior building materials.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Interior Architecture MIA student; Corequisite(s): INT 521; Credit is allowed for only INT 519 or INT 598 (Contemporary Issues in Interior Arch Seminar)
INT	520	Pro Practice for Interior Arch	Business procedures, project control, fee structures and professional product liabilities.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	2		Prerequisite(s): INT 521; Credit is allowed for only INT 520 or INT 598 (Professional Practice for Interior Design)
INT	521	Adv Interior Arch Studio I	Studio problems in interior architecture related to the integration of building structure and systems with the behavioral response to personal spaces.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Interior Architecture major. Credit is allowed for only INT 521 or INT 590 (Advanced Interior Architecture Studio I)
INT	522	Adv Interior Arch Studio II	Investigates interior architecture issues, including construction, technology, programmatic and environmental determinants.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 521; Corequisite(s): INT 527; Credit is allowed for only INT 522 or INT 590 (Advanced Interior Architecture Studio II)
INT	527	Contemporary Design Theory	Aesthetic, political, economic, and social theories that have shaped modern design; theory as the basis for design philosophies.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	529	Design Criticism	Applies critical methods to design as material culture and human expression; evaluates achievement versus intention.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Herberger Institute of Design and the Arts Graduate student
INT	541	Codes and Building Regulations	Codes and regulations as performance criteria for interior design.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): INT 521; Credit is allowed for only INT 541 or INT 598 (Codes and Building Regulations)
INT	550	Envir Systems of Int Arch	Surveys building environmental control systems, acoustics, materiality and lighting properties.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts graduate student; Credit is allowed for only INT 550 or INT 598 (Environmental Systems for Interior Architecture)
INT	554	Construction Docs for Int Arch	Elements of construction drawings sets, application of codes and specifications, and contract administration.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): INT 521; Credit is allowed for only INT 554 or INT 598 (Construction Documents in Interior Architecture)
INT	558	Lighting Design	Fundamentals of lighting, which includes daylighting and artificial lighting; understanding of lighting as a design element: lighting concepts, design strategies, techniques, documentation, case studies and analysis tools.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute of Design and the Arts graduate student

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INT	581	Preintern Sem for Int Arch	Preparation of internship materials, which produce and enhance a successful internship experience.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Master of Interior Architecture student; Corequisite(s): INT 521; Credit is allowed for only INT 581 or INT 598 (Preinternship Seminar for Master of Interior Arch)
INT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
INT	602	Research Methods for Int Arch	Seminar course in research, with a particular emphasis on quantitative and empirical methods. Students develop an appreciation for and understanding of different conceptual frameworks of design, environment and the arts knowledge; develop a knowledge of a broad range of alternative approaches to interdisciplinary research with emphasis on quantitative methods; become aware of different research methods, tools and approaches; craft a research question and transform it to a plan of research; understand the components of the research process and research proposal; develop improved skill in scholarly writing; become aware of ethical and other critical issues related to research; critically assess the strengths and weaknesses of various research studies and techniques; analyze data using several statistical methods, using statistics software.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Herberger Institute for Design and the Arts graduate student
INT	621	Adv Interior Arch Studio III	Structured around the Design School traveling-studio model, based on design problems emphasizing the global context of interior architecture as it influences interior space and architectural form.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 522
INT	622	Adv Interior Arch Studio IV	Individual, student-initiated capstone project reflecting a culminating synthesis of interior architecture ideas.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): INT 621
INT	650	Diversity and Design	Seminar-based investigation of how different aspects of embodied identities impact how spaces are designed and how people experience spaces. Explores the history of identity politics in relation to the design professions, as well as critiques of design approaches based on a universal body. Students learn about the relationship between design and, among other aspects, gender, race, ethnicity, culture, disability, age, class, gender identity, or sexual orientation. Expects students to recognize and understand what biases impact their work as designers. Critically investigates methods to assess these biases and their impact on users, as well as solutions to avoid or mitigate them.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only INT 598 (Diversity and Design) or INT 598 (Identities and Design) or INT 650
INT	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
IPI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	0.25-4		
IPI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
IPI	296	Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward the goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Students learn how to understand a complex problem through multiple steps, to approach challenging primary content, to productively critique each other's work, and to think critically. Students meet for 2 hours per week but work extensively outside of class.	Y	LEL	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		
IPI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
IPI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
IPI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
IPI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
IPI	496	Advanced Inquiry	To be most effective in work and life, we need to learn how to recognize and solve problems, and to work in teams. Students work together to reach understanding on a large goal associated with human society and space exploration. An example from a previous class is, "What will the Moon be like after human settlement?" As a class, uses a weekly inquiry cycle to step toward our goal: read some content, ask a "natural next question" that takes us one step further toward the goal, seek content to help answer that question, and repeat. Each student runs an independent research project using the techniques taught throughout the course. The research project requires some knowledge creation—that is, development of ideas, supported hypotheses, observations and the like, that add to the mass of human knowledge rather than just restating it.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	3		Prerequisite(s): IPI 296 completed two times with C or better OR IPI 296 with C or better; HUL 250 with C or better
ISS	110	Dimensions of Social Science	Introductory survey of the disciplinary components of social science, including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only ISS 110 or ISS 302
ISS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
ISS	301	Integrated Soc Sci Rsrch Meth	Overview of the methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include data collection and data management techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	302	Scope of Social Science	Surveys the disciplinary components of social science including sociology, political science, economics. Module includes sociology, economics, political science, philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 110 or ISS 302 OR Visiting University Student
ISS	304	Integrated Theories Social Sci	Broad survey of the major foundational theories in the disciplines of social science, including sociological theory, economic theory, political theory, anthropological theory and philosophy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours
ISS	401	Statistics Integrated Soc Sci	Statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures and inferential statistics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	MA	Prerequisite(s): MAT 142 or higher
ISS	410	Integrative Leadership Studies	Explores the concept and practice of leadership by examining general leadership theories and personal leadership skills with a view to transcending disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours

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ISS	415	Knowledge Management	Overview of concepts in knowledge management, types of knowledge, processes of knowledge generation, codification and transfer. Role of technology and networks in knowledge management and effective leveraging of organizational intellectual capital.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours
ISS	428	Religion and Global Violence	Examines the tensions and interplay of religious and secular accounts for violence globally; considers theoretical frameworks from the social sciences for understanding such violence.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	437	Integrative Ethics in Soc Sci	Investigates ethical issues across professional disciplines in the social sciences with a view to integrating the literature and innovations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours
ISS	441	Conflict&Conflict Resolution	Overview of peace theories and peace movements; peace and peacebuilding; the nature and sources of global conflicts; critical security studies (covering human, food and environmental security); mechanisms for peaceful resolution of conflicts; culture of peace; and the relationship between underdevelopment and conflicts, particularly in politically fragile societies.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours
ISS	450	Consumerism & Sustainable Dev	Analyzes the impact of the quest for more and better consumer goods as it affects sustainable development and global ecology.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	456	Culture, Conflict and War	Explores the complex relationship between culture and conflict through an analysis of past and present conflicts and the role of culture in those conflicts.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours OR Visiting University Student
ISS	482	Globalization&Int'l Polit Econ	Surveys the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ISS 482 or ISS 522
ISS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): minimum 87 hours
ISS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
ISS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
ISS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		Prerequisite(s): minimum 87 hours
ISS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours
ISS	501	Adv Integrated Soc Rsrch Meth	Advanced review of methods of social science inquiry with a view to transcending disciplinary boundaries. Topics include the scientific method, theory building and hypotheses, measurement and scaling, reliability and validity, and the structure and development of research designs and applications.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	502	Adv Seminar Integrated Soc Sci	Integrative survey of the disciplinary components of social science as disparate ways of making sense of human experience, including sociology, political science, philosophy and economics.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	504	Adv Integratd Theories Soc Sci	Cross-disciplinary examination of major social science theories, such as: rational choice, environmentalism, institutionalism, functionalism, sociology, world systems approach, Marxism and democratic theory. Emphasizes bridging disciplinary boundaries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	505	Adv Methodologies Social Sci	Applies advanced statistics and statistical modeling in decision making in social research, with emphasis on regression modeling techniques.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	506	Comm Gov, Ldrshp&Civic Engagmt	Explores theory and research on community governance with an emphasis on analyzing leadership in promoting civic engagement.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	508	Knowledge,Innovation&SocChange	Surveys the sources of knowledge and knowledge generation, facilitating factors for innovations especially in the development of technologies that drive significant, universal and enduring social change.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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ISS	510	Relig,Secularism&Soc Dynamics	Analyzes the role of religion and secularism in the modern social sphere, and the social processes that govern religious belief and behavior. Emphasizes reading current research, applying relevant social theories, and deriving scientifically valid explanations for observations about religion.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	512	Adv Integrative Ethics Soc Sci	Investigates ethical issues across professional disciplines in the social sciences through an overview of recent innovations, discoveries and developments.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	514	Culturl Div&Gender Undrstndng	Reviews the epistemological, theoretical and legal premises on the concept of social justice and the cultural, racial, ethnic, gender and other bases for the agitation for social justice, including strategies in pursuit of social justice.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	516	Conflict Res, Peace Studies	Evaluates the intersection of peace, conflict and social movements through a survey of social movements that promote war or peace throughout the contemporary world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	518	Science, Tech & Social Systems	Issues, definitions and literature involved in the study of science, technology and the evolution of social systems, emphasizing contemporary issues confronting modern societies and potential solutions to resolving these issues.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	522	Globalization&Int'l Polit Econ	Advanced treatment of the political, economic and social forces that influence international political and economic relationships. Topics include international economic, technological and cultural competition; international trade and multicultural corporations; and economic relations between more developed and less developed countries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ISS 482 or ISS 522
ISS	562	Pol Developmnt&Underdevelopmnt	Examines the various perspectives and premises associated with efforts to promote economic and political change in different parts of the world, particularly in poor countries. Topics include population growth; migration and management; food production; shelter; education; industrialization; comparative advantage; foreign aid; and corruption.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	N	RSC	N	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	PRA	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	N	SEM	N	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
ISS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	101	Elementary Italian I	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	102	Elementary Italian II	Fundamentals of the language. Emphasizes listening, speaking, reading, writing, and cultural proficiency.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	110	Intensive Italian I	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Credit is allowed for only ITA 101 or ITA 102 or ITA 110 or ITA 111

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ITA	112	Ita Romance Lang Speakers	15-week hybrid course: 3 hours class meetings, 1 hour student self-study. Designed for students with an active competence in Spanish or another Romance language such as French, Portuguese and/or Romanian, who wish to learn the essential elements of the Italian grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension" which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities between Spanish, other Romance languages and Italian, students master the four language skills of listening, speaking, reading and writing of in Italian at a faster pace.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only ITA 112 or ITA 194 (Italian for Spanish Speakers) or ITA 194 (Italian for Romance Language Speakers)
ITA	114	Gateway to Italy	Designed for students who have no previous knowledge of Italian, but wish to attend a study abroad program in Italy or acquire novice proficiency in the Italian language along with basic notions of Italian geography, society and culture. Develops basic vocabulary that enable students to engage in simple, everyday conversations in order to enhance and support their Italian experience, minimize stress and reduce the culture shock. Offers an insight into a wide array of cultural norms and practices of Italy, which are essential for an initial contact with the country and serves as a stepping stone for further study.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed only for ITA 114 or ITA 194 (Gateway to Italy)
ITA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	201	Intermediate Italian I	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on both spoken and written genres of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	202	Intermediate Italian II	Emphasizes reading, writing, listening, and speaking proficiency at an intermediate level. Focuses on values of Italian culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	
ITA	210	Intensive Italian II	Proficiency-oriented language course designed to achieve the maximum level of proficiency in an intensive and dynamic communicative environment. Class time is spent on a variety of fast-paced communicative activities focused especially on the development of speaking skills. Class meets four times a week.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): ITA 102 with B or better or ITA 110 with C or better; Credit is allowed for only ITA 201 or ITA 202 or ITA 210
ITA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	311	Speak Italy: Lang,People,Cultr	Develops oral/aural proficiency through the study of diverse voices from Italian culture and the analysis of spoken multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	312	Write Italy:Lang,People,Cultr	Develops reading/writing proficiency through the study of various texts in Italian and the analysis of written multimedia genres and cultural products.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; ITA 202 with C or better OR Visiting University Student
ITA	315	Italian Culture:Good,Bad&Ugly	Studies the rich diversity and complexity of Italian culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ITA 202 with C or better OR Visiting University Student
ITA	319	Italian for Professions	Conversation and composition course in which students gain the linguistic skills necessary to work in Italy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ITA 202 or 210 with C or better OR Visiting University Student
ITA	321	Italian Renaissance Culture	Studies the new voices of Renaissance culture through analysis of different media, discussion and writing in Italian.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	Prerequisite(s): ITA 202 or 210 with C or better OR Visiting University Student
ITA	322	Modern Italian Culture	Studies the contributions of Italian thinkers to the development of modern western culture through analysis of different media, discussion and writing in Italian.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ITA 202 or 210 with C or better

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ITA	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student
ITA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	413	Advanced Italian	Development and assessment of advanced spoken and written Italian proficiency through activities using all four skills.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ITA 311 or 312 with C or better
ITA	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
ITA	420	Italian Cinema	Major trends of Italian cinema from the post-war period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
ITA	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
ITA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ITA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
ITA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
ITA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ITA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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ITA	550	Italian for Reading Knowledge	Teaches non-speakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Consists of a concise overview of grammar as well as reading comprehension practice for students who plan to take the Graduate Foreign Language Exam or others who would merely like to learn to read in a foreign language. Focuses only on reading and not on listening, speaking or writing as in a traditional language course.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ITA 494 (Italian for Reading Knowledge) or ITA 550
ITA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
ITA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
IVD	525	Fund of Entrepreneurial Leader	"Experiential" course for students to practice "being" a leader at the personal, interpersonal and community levels. While typical leadership classes leave one knowing about leaders and leadership, this class leaves students being leaders as part of their natural self-expression. The program follows an ontological pedagogy, rather than epistemological one. Ontology is the study of the nature and function of being "as lived" in real time. Epistemology by contrast deals with the varieties, grounds, and validity of knowledge. Leadership skills include mastery of communication at each of the three levels, from personal relationships to large-scale messaging for media and branding; and looking beyond the personal and interpersonal sociological level of analysis to incorporate principles of social and environmental justice into their relationships and the enterprises they lead.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; Corequisite(s): IVD 560
IVD	560	Innovation Studio I	A prerequisite for successful innovation and venture development is a deep understanding of the multidimensional context in which the innovation will be situated, and in which the venture will compete, whether a commercial enterprise or nonprofit. This course gives students the design, business and engineering research and evaluation tools and experience to investigate and immerse themselves in industry or sector customer needs, the competitive landscape and cultural context, as well as ways to predict and mitigate the unintended consequences of their innovation on society and the environment. Teaches students where to begin, how to inquire, how to evaluate information they uncover, and how to use critical thinking and analysis to develop the insights that become the foundation of their venture-development journey.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student
IVD	561	Innovation Studio II	Problem reframing is essential to the innovation process, and to properly diagnosing problems so they can be investigated from multiple perspectives. It entails pushing past conventional assumptions about barriers to success, to find root causes--sometimes different problems altogether--that inspire novel, diverse approaches. Problem reframing is a powerful tool that increases the options and resources available in addressing any challenge. Students learn the difference between root causes and symptoms, understand the systems affected by and affecting their challenge, and learn to see and act on problems as opportunities for breakthrough solutions.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 560; Corequisite(s): IVD 525

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IVD	562	Innovation Studio III	In this iterative, creative "make-to-learn" phase of venture development, students explore prototyping and testing with audiences or end-users to develop feedback loops for real-time evaluation of their ideas, then synthesize learning from both successes and failures to progress toward a solution. Key components include mastery of ideation and creative development, framing strategic questions and success indicators for prototyping of services or products, evaluation of feedback and iteration of progressively more promising ideas, and evaluation of their innovations measured against the success indicators they developed. Students learn and practice prototyping service interactions as well as product innovations.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 561.
IVD	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	630	Scaling Entrepreneurial Leader	The personal skills required to succeed in a small start-up environment are different from those required to run a successful enterprise or nonprofit. Many entrepreneurs do not have access to the learning that prepares them to both launch and successfully scale their venture. Complexities of board management, fostering a creative culture, codifying a communication system that becomes a source of energy and a north star for the organization, inculcating values of social and environmental justice into a culture and translating them into daily behavior are required capacities which cannot be learned in theory, only in practice. Students master the skills to lead an enterprise through the challenges of the 21st century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; Corequisite(s): IVD 562
IVD	660	Innovation Studio IV	Faced with the challenge of business model generation and prototyping, students need to define the starting points of value proposition, supply chain and customer segments. Later in the process, a clear description of the revenue model, customer relationship, key resources, key activities, key partners and cost structure complement the original value proposition design. The refinement of the newly created business model is made through a process of iteration. Students have an overall comprehension of the strategic innovation process made of (a) strategy, (b) execution, (c) tools and (d) metrics before moving to the stages of scaling and growth of the business. In order to develop a viable business model, students need to understand the costs of development, manufacturing and getting their goods or services to customers.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Innovation and Venture Development MS student; IVD 525; IVD 560; IVD 561; IVD 562; Corequisite(s): IVD 630
IVD	661	Innovation Studio V	SCALE is translated as proportional growth of production and profit aiming at a larger market position. Understanding the timing to scale a business model is crucial to its success and scaling can be discussed in terms of market, process and team. Faced with scaling issues of their business models, students need to build their own framework—or tools—in order to make decisions concerning the whens (time) and hows (market, process, tools) of scaling. Topics covered also include, but not limited to, venture funding strategies, budgeting capital needs, developing e-commerce, CRM analytics, supply chain and operations. At the end of this semester, students present a fully developed venture, with clearly articulated market need, viable innovation based on end-user feedback, business model and plan for scale. Where relevant, students register their intellectual property through ASU, using the university's published guidelines and procedures.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	6		Prerequisite(s): IVD 525; IVD 560; IVD 561; IVD 562; IVD 630; IVD 660
IVD	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
IVD	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JHR	100	Intro Soc Justice Human Rights	Interdisciplinary introduction to the study of social justice and human rights through examination of materialism, intersectionality and inequality, advocacy and social change, and critical trauma studies and humanitarianism in transnational and global perspective.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
JHR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
JHR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
JHR	305	Theory Soc Justice Human Rts	Interdisciplinary survey of theories and practices of social justice and human rights in transnational and global perspective. Explores various theories of social justice and human rights and examines in-depth case studies of social injustice and human rights challenges. Also explores the future of social justice and human rights in light of global climatic and environmental change. Social sciences theories and methods combine with humanistic philosophy to understand the foundations of social justice and human rights.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours
JHR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
JHR	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3	L & G & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
JHR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
JHR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
JHR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
JHR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): minimum 45 hours
JHR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Social Justice & Human Rights MA student
JHR	501	PS Social Justice&Human Rights	Classical and contemporary theories of social justice and human rights in the context of current local, national, and international issues. Special reference made to the roles of both governmental and nongovernmental organizations in addressing social justice and human rights issues.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	506	Grant Writing	Seminar in grant writing and fund raising for social justice and human rights. Provide an introduction to the grassroots grant writing and fund raising process, with a particular focus on justice-oriented nonprofit and international nongovernmental organizations.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	510	Problem-Based Sem Social JHR	Interdisciplinary seminar examines current problems in social justice and human rights from several different theoretical and analytical viewpoints. May be repeated once for credit.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student

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JHR	511	Community-Embedded Seminar	Interdisciplinary seminar requiring students to be placed in community organizations dealing with the course issue during the semester. Emphasizes developing effective strategies for partnerships with relevant community organizations and evaluating institutional settings, policies, and procedures from the perspective of social justice and human rights.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	525	Action Research	Advanced practicum in engaged, community-embedded research and interpretive analysis. Gives students experience in the practice of engaged fieldwork as well as the writing it generates.	N	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Social Justice & Human Rights MA student
JHR	549	Capstone Social Just Human Rt	Culminating experience for students in the MA in Social Justice and Human Rights program. Analyzes and evaluates literature in the field and recommends practices of social justice and human rights through written and/or media projects. Includes practices of social justice and human rights within and across various organizations and local, global or transnational contexts.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Social Justice and Human Rights MA online student
JHR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): Social Justice and Human Rights MA student
JHR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JHR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JMC	101	Grammar for Journalists	Grammar course specifically designed to help journalism majors master the essentials of grammar. All majors must achieve an 80 percent in the course, indicating a mastery of grammar, before they can move on to any other journalism course.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student

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JMC	102	Coding for Journalists	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
JMC	110	Principles & Hist of Journalism	Fundamental principles of journalism and the evolution of those principles through the history of the U.S. news media. By understanding the history of journalism, students learn about the most critical values of the profession. This is the first of four "values" courses Cronkite students take during the four-year curriculum.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; Credit is allowed for only JMC 110 or MCO 120 OR Visiting University Student
JMC	120	Studio Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication major; Credit is allowed for only JMC 120 or 194 (Studio Production) OR Visiting University Student
JMC	121	Sports Production	Introduces the vocabulary of production. Develops familiarity with the studio equipment, its care and operation, and basic production procedures. Covers the ability to function as a member of a production team; sound attitudes toward assignments and constructive criticism; and an appreciation of production as a tool of the communication process. Discusses career opportunities in the diverse marketplace.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Sports Journalism major; Credit is allowed for only JMC 121 or JMC 194 (Sports Production) OR Visiting University Student
JMC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major OR Visiting University Student
JMC	201	News Reporting and Writing	Introductory news writing course required for all Cronkite majors. Students learn the basic reporting and writing skills needed for further study in print, broadcasting, online or public relations. Students practice reporting and writing news stories with an emphasis on accuracy, newsworthiness, deadlines, objectivity and fairness.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B- or better; JMC 110 or MCO 120 with C or better OR Visiting University Student
JMC	220	Broadcast Voice and Delivery	Builds vocal skills both for everyday life, and for on-air performance. Focuses on breathing, voice control and pitch, articulation, stress and intonation, resonance, sounding conversational, anchoring, and on-camera body language.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; Credit is allowed for only JMC 220 or JMC 294 (Broadcast Performance Skills) or JMC 294 (Broadcast Voice and Delivery) OR Visiting University Student
JMC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major
JMC	301	Intermediate Reporting&Writing	Students produce a wide range of news and enterprise stories that take them into the community to report on police, courts, business, government and diverse communities, among other topics. Students hone their interviewing, reporting and writing skills and pitch their stories to professional and student media outlets. They gain a deeper and more sophisticated understanding of newsworthiness, journalism ethics, and law.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	302	Sports Reporting	Students learn how to cover a sports beat in this hands-on class. They develop story ideas and sources and report and write multiple stories on deadline. Expects students to pitch stories to professional outlets with the goal of publication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	305	Multimedia Journalism	Software and digital tools commonly used by multimedia journalists, including shooting and editing photos and video, social media, Web analytics, basic HTML, blogging, and design for the Web.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B- or better; JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student

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JMC	306	Sports Multimedia Journalism	Students learn and employ a range of software and digital tools commonly used by multimedia sports journalists. They shoot and edit photos and video, create social media, analyze and understand audience analytics, and learn basic design for the Web, with a focus on creating content for sports audiences.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 101, 105, or 107 with C or better; JMC 101 or MCO 101 with B- or better; JMC 110 or MCO 120 with C or better; Credit is allowed for only JMC 305 or JMC 306 OR Visiting University Student
JMC	310	Principles of Strategic Comm	Introduces students interested in careers in public relations, strategic media and related areas to the practices and principles of public relations in corporate, nonprofit, agency, government and other settings. Covers the role of public relations professionals, how the field is changing and career opportunities.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	313	Introduction to Editing	Hands-on training in editing copy, photos and graphics and writing headlines and other display text for print and digital platforms. Emphasizes editing for accuracy, clarity, brevity, grammar and tone. Students practice AP style, develop news judgment and consider the ethical implications of their work.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 101 with B or better; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	315	Intermed Rept & Writ (Brdcast)	Intermediate broadcast news reporting and writing techniques with emphasis on audio.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	L	Prerequisite(s): Journalism and Mass Communication major; ENG 102, 105, or 108 with C or better; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA
JMC	320	Newscast Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience and assignments based on editorial judgment, technical skills and industry awareness. Students emerge with strategies for total newsroom management, confidence in producing news content and newscasts under deadline pressure and prepared for a variety of producer-related roles in professional newsroom environments.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302 or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	325	Breaking News Multimedia Reprt	Students cover breaking news for azcentral.com, gaining practical experience in an online, multimedia environment. Students are selected by The Arizona Republic and work with professional editors in the Republic Media newsroom. Their work appears on azcentral.com and may appear in the print edition of the newspaper. Students must commit to two full days a week, and they earn pay in addition to class credit.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	330	Television Reporting	Hands-on experience reporting and producing television news packages. Teaches visual storytelling skills including writing, reporting, videography and editing for broadcast and other platforms.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; JMC 301 or 315 with C or better; JMC 345 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	331	Television Sports Reporting	Hands-on experience reporting and producing television sports packages. Skills taught include sports writing, reporting and editing for broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 302 with C or better; JMC 346 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 OR Visiting University Student
JMC	333	Adv Bilingual Brdcast Reporting	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Students develop advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish, preparing them for entry-level positions in a small/medium market local television newsroom.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 or 315 with C or better; JMC 345 with C or better; Credit is allowed for only JMC 330 or JMC 331 or JMC 333 or JMC 494 (Advanced Bilingual Broadcast Reporting)
JMC	345	Videography	Students conceive, plan, shoot, write and edit television news packages in this hands-on class. Skills taught include sequencing, framing, lighting, sound, story structure, news judgment, storytelling and editing. Students may use school-supplied cameras and editing facilities but must provide a Flash Memory card and portable external FireWire Hard Drive.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student

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JMC	346	Sports Videography	Develops an understanding of visual sports storytelling and craft compelling sports stories using video and sound.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; ENG 102, 105, or 108 with C or better; JMC 302 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 345 or JMC 346 OR Visiting University Student
JMC	351	Photojournalism I	Teaches basic skills required to compose, shoot and prepare still photos for publication. Hands-on, with students shooting a range of assignments from news events to environmental portraits, and producing a portfolio of their work. Students may share a school-supplied Canon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with Flash (built-in or external) for this class.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student
JMC	352	Sports Photojournalism	Students learn photojournalism skills, including composition, shooting and preparing still photos for publication in a sports context. Hands-on, with students shooting a range of sports assignments and producing a portfolio of their work. Students may share a school-supplied Cannon camera or provide their own. The camera should be a digital SLR camera body with at least a kit zoom lens, and the camera body must have a manual setting and have the ability to turn off any built-in camera flash. Students need digital media cards of at least 2 GB and an external digital card reader. Students may not use point-and-shoot cameras or cameras with flash (built-in or external) for this class.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 351 or JMC 352 OR Visiting University Student
JMC	366	Journalism Ethics & Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journ & Mass Comm major; JMC 101 or 194 (Gramr for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	367	Ethics Diversity Sports Journ	Explores ethical problems related to sports media in a seminar setting. Discussion-based course applies journalistic values and principles to contemporary ethical dilemmas in sports media and helps prepare students for work in the profession.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Sports Journ BA major; JMC 101 or 194 (Gram for Journ); JMC 110 or MCO 120 w/ C or better; min 2.50 GPA; min 25 hours; Credit allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494(Media Ethics & Diversity) OR Visiting University Student
JMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication major or Sports Journalism major; minimum 2.50 GPA OR Visiting University Student
JMC	402	Mass Communication Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq (s): Journ & Mass Com or Sport Journ major; ENG 102, 105, or 108 w C or better; JMC 101 or 194 (Gram Journ); JMC 201 w C or better; min 2.50 GPA; min 56 hours; Credit allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
JMC	406	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)

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JMC	410	Turning Points in TV History	Uses historic television footage to talk about the evolution of news coverage and the ethical decisions journalists face.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 101 or MCO 101; minimum 2.50 GPA; Credit is allowed for only JMC 410 or JMC 494 (Turning Points in TV History) OR Visiting University Student
JMC	412	Opinion Writing	Traces the evolution of a new form of writing that blends the traditions of magazine features and classic newspaper opinion. Students pitch and write features in consultation with editors for Slate, the popular online magazine. Emphasizes curiosity-driven, smart and witty writing that advances an argument with strong voice and intellectual integrity.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 301 with C or better; minimum 2.50 cumulative GPA
JMC	413	Advanced Editing	Builds on skills learned earlier. Students master editing skills that include AP style, grammar, headline writing and page layout as well as editing graphics and other visuals, editing Web content and uses of social media. Students hone their news judgment and learn to work quickly and accurately on deadline.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 313 with C or better; minimum 2.50 GPA
JMC	414	Digital Graphic Design	Theory, organization, and practice of layout, typography, and design in traditional and multimedia publishing.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 305 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	415	Writing for Public Relations	Develops the professional-level writing and strategic skills expected of public relations practitioners. Students learn how to design and produce strategic plans, news releases, media kits and executive communications. They are exposed to communications approaches required for different audiences and media and learn about public relations theory as well as audience research and analysis.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 with C or better; JMC 310 with C or better; minimum 2.50 GPA OR graduate Mass Communication student OR Visiting University Student
JMC	417	Public Relations Campaigns	Students work with professional clients in an agency setting to research, plan and create comprehensive public relations campaign that address clients' needs. Concepts, theories and techniques relevant to public relations campaigns as well as strategic planning, campaign components and technology resources and tools. Analyzes, discusses and responds to current public relations issues and case studies.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 cumulative GPA OR graduate Mass Communication student
JMC	419	Strat Comm Leadership & Ethics	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 419 or MCO 519 OR Visiting University Student
JMC	421	Advanced Digital Storytelling	Explores and practices the art of storytelling for digital audiences. Each student produces a digital project consisting of images, sound and text using various storytelling forms. Projects may consist of narrative multimedia features, news coverage, enterprise or investigative reporting. Emphasizes creating quality journalism, visual impact and creative use of multimedia tools and techniques. The best work is entered in national and regional contests. It is recommended that students have taken other classes or can demonstrate skills in visual journalism (photography, videography or graphics).	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 421 or JMC 494 (Advanced Digital Storytelling)
JMC	430	Sports Marketing and Campaigns	Students create a real-world sports marketing campaign for a client (clients change each semester). Students strategize, plan, and clearly explain to the client how to execute their campaign. Executives from the client judge and ultimately select a winning campaign.	N	LEL	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 302 with C or better; minimum 2.50 GPA OR Visiting University Student

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JMC	434	Advanced Bilingual Reporting	In this project-based class, students work together to cover various angles of a topic related to Latinos in the U.S. Their digital and video stories, photographs and graphics often result in publication. Students need some ability to report in Spanish, although they do not have to be proficient. Prepares students for work in the Borderlands Bureau of Cronkite News or Cronkite Noticias, the school's Spanish-language news site.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s) w/ C or better: Journ & Mass Comm or Sprt Journ mjr; JMC 201; JMC 301, 302, or 315; JMC 305; min 2.50 GPA; Credit allowed for only JMC 434 or JMC 494 (Adv Billing Report) or MCO 534 or MCO 598 (Adv Billing Report) OR Visiting University Student
JMC	435	Latino and Transnational Issue	This fall-only seminar gives students a nuanced understanding of topics such as immigration, trade, health care, politics and cross-border conflict and cooperation, preparing them to report on some of today's most important issues. Students who complete the course are considered for a spring in-depth reporting course, which includes a reporting trip to another country.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 101 or MCO 101 with C or better; JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	436	Public Relations Research	Students learn about the importance of research in communications, conduct research using qualitative and quantitative methods, and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research and are exposed to types of research and their application in the field of public relations.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major; JMC 301 with C or better; JMC 310 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 436 or JMC 494 (Public Relations Research) OR Visiting University Student
JMC	437	Documentary Production	Students learn the fundamentals of producing documentaries, including research, script writing, production and shooting and editing video. Students produce a long-form documentary. Students become familiar with television documentary history in order to identify trends and learn about legal and ethical issues relevant to video documentary production.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 345, 346, or 448 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	440	Magazine Writing	Students report and write stories suitable for magazine outlets. They develop and pitch stories, learn new reporting techniques and employ literary techniques such as description and scene setting in their writing. See class notes for additional information.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 with C or better; minimum 2.50 GPA OR Sports Journalism MA student OR Master of Mass Communication MMC student OR Visiting University Student
JMC	441	Narrative Writing & Reporting	Covers the elements of narrative journalism--structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing--and applies them to a long-form story students report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Journalism&Mass Communication BA or Sports Journalism BA major; JMC 301 or 302 w/C or better; min 2.50 GPA; Credit allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing) OR Visiting University Student
JMC	444	Accountability Journalism	Accountability journalism in the digital age -- its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; min 45 hours; min 2.50 GPA; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism) OR Visiting University Student
JMC	446	News 21	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 201 with C or better; JMC 301, 302, or 315 with C or better; min 2.50 GPA; Credit is allowed for only JMC 446 or JMC 494 (News21) or MCO 546 or MCO 598 (News 21 Seminar)

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JMC	448	Non-Narr Video Storytelling	Teaches students how to create video pieces that effectively communicate a story, information or concept to an audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Jm & Mass Com or Spts Jour maj; JMC 305 w/ C or btr; min 2.50 GPA; Crdt for only JMC 448 or JMC 494 (DSLR Vid Strytell or Non-Nar Vid Strytell) or MCO 548 or MCO 598 (DSLR Vid Strytell or Non-Nar Vid Strytell) OR Visiting University Student
JMC	450	Issues in Coverage of Bus&Econ	Basics of business and economic reporting, one of the fastest-growing areas of journalism. Students learn what skills are needed to cover business and economic stories as well as the basics of how private companies operate and the factors that drive the economy. Students learn about opportunities in the field and hear from leaders in business journalism.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication BA major or Sports Journalism BA major; JMC 101 or JMC 194 (Grammar for Journalists); JMC 201 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	451	Photojournalism II	Develops photojournalism and visual storytelling skills through extensive hands-on practice shooting and editing for online and print media. Introduces shooting video with DSLR cameras and becoming proficient at image cropping, writing outlines and editing using Adobe Photoshop.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; JMC 351 or 352 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	452	Visual Storytelling	Develops visual storytelling skills, working closely with a professional visual journalist to tell multimedia documentary stories that utilize video, still photos and text. In addition to the basics of storytelling, covers non-traditional techniques, including time-lapse, panos, HDR and star trails. Students should have basic skills in both still photography and videography and are expected to provide their own DSLR camera that can accommodate external mics and that have video capability.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication major; minimum 2.50 GPA; JMC 345 or JMC 351 with C or better
JMC	453	Reporting on Business and Econ	Trains in the basics of reporting about business and the economy. Helps students tell the stories behind companies, people and money, while improving competence in using numbers in stories. Offers the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 453 or JMC 494 (Reporting on Business/Economy)
JMC	455	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 GPA; JMC 305 with C or better; Credit is allowed for only JMC 455, JMC 494 (Digital Media Entrepreneurship), MCO 555, or MCO 598 (Digital Media Entrepreneurship)
JMC	457	Advanced Radio Reporting	Develops planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news, business, as well as hard and soft news feature reporting. Emphasizes pre- and post-production planning, development and execution.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism & Mass Communication BA major; JMC 301, 302 or 315 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting) OR Visiting University Student
JMC	460	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave the course with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content; and the requisite storytelling skills to produce work of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 305 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 460 or MCO 515 OR Visiting University Student
JMC	465	Telling Stories with Data	Techniques and tools of reporting using data and public records as well as how to use the Internet and other online sources to find information and sources for stories. Students get experience with computer spreadsheets, database software and statistical techniques as they develop their advanced reporting skills.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student

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JMC	470	Depth Reporting	Students learn to conceptualize, report and write or produce long-form, in-depth stories for publication or broadcast. Students learn techniques of investigative reporting, including use of public records and data, as well as advanced interviewing techniques, and discover compelling ways to tell complex stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	473	Business&Future of Journalism	Exposes advanced journalism students to broad media management problems; helps students understand how essential the bottom-line and quality journalism are to the entire journalistic enterprise; helps students think about how to balance those two concerns.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journ & Mass Comm BA major; JMC 101 or 194 (Grammar for Journ); JMC 201 with C or better; min 2.50 GPA; Credit for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journ) OR Visiting University Student
JMC	474	Advanced Issues Sports & Media	Exposes challenges facing sports and media in the 21st century, including changing content models, revenue streams, and the evolving relationship between teams and media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism BA major; JMC 101 or 194 (Grammar for Journalists); JMC 201 with C or better; min 2.50 GPA; Credit allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Explor the Bus of Journalism) OR Visiting University Student
JMC	476	Public Relations Laboratory	Synthesizes and applies the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. Students: (1) analyze, discuss, then respond to public relations case studies; (2) develop an in-depth understanding of a client's needs; (3) conduct primary and secondary research; (4) work with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; (5) design and develop media products for client; (6) formally present the proposal to the client and the class.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication major; JMC 415 with C or better; JMC 436 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	477	InnovationEntrepreneurship Lab	Research and development program designed to help media companies create new and exciting multimedia products and to help students create digital media startups. Brings together students from disciplines across campus, including journalism, business, computer engineering and design. Journalism students conduct research into developing new products and creating prototypes for those products. Students learn by doing, interacting with clients or investors, the director and the lead Web developer. Students schedule meeting times with the director to discuss projects.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/C or better; min 2.50 GPA; Credit allowed for only JMC 477 or JMC 498 (Innov & Entrepreneurship Lab) OR Visiting University Student
JMC	478	Cronkite News: Phoenix Bureau	Applies and enhances reporting, writing and multimedia skills.	N	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA OR Visiting University Student
JMC	479	Cronkite News: Washington	Students participate in a full-time regional reporting bureau that gives them the opportunity to work as a Washington correspondent.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Communication BA or Sports Journalism BA major; JMC 301, 302, or 315 with C or better; minimum 2.50 GPA; Credit is allowed for only JMC 478 (Cronkite News - Washington Bureau) or JMC 479 OR Visiting University Student
JMC	480	Cronkite News: Phoenix Sports	Students gain valuable experience in sports reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism & Mass Comm or Sports Journalism BA major; JMC 301, 302, or 315 w/ C or better; JMC 305 w/ C or better; min 2.50 GPA; Credit allowed for only JMC 480 or JMC 478 (Cronkite News- PHX Sports Bureau) OR Visiting university Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
JMC	481	Cronkite News: LA Sports	Students gain valuable experience in sports journalism reporting, shooting, editing and voicing packages for partnership outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journ & Mass Comm BA or Sports Journ BA major; JMC 330 or 331 w/ C or better; min 2.50 GPA; Credit is allowed for only JMC 481 or JMC 478 (Cronkite News - L.A. Sports) or JMC 478 (Sports Journ Santa Monica) OR Visiting University Student
JMC	482	Sports Knowledge Lab	The Sports Knowledge Lab is part of the Global Sport Institute, an international sports research and knowledge lab based at Arizona State that connects people to the power of sport by translating and amplifying complex sports research to broad, global audiences. Under the guidance of the executive editor of the Sports Knowledge Lab, students are responsible for the production and presentation of a variety of curated and original content from across the globe that examines the impact of sport on society and provides context for top sports headlines from around the world. Content includes long-form writing, documentaries, articles, newsletters, data visualization and podcasts. Global Sport Matters provides compelling angles that not only deepen people's understanding of issues that fit within the framework of the Global Sport Matters mission, but provides unique context, knowledge and tools that can lead to change.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301, 302, or 315 with C or better; JMC 305 with C or better; Credit is allowed for only JMC 482 or JMC 498 (Sports Knowledge Lab)
JMC	483	CronkiteNews-DigitalProduction	Students produce stories and multimedia across platforms for Cronkite News and professional news outlets.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 cumulative GPA; Credit is allowed for only JMC 483 or JMC 478 (Cronkite News Digital Production)
JMC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Journalism and Mass Communication or Sports Journalism BA major; JMC 301 or 302 or 315 with C or better; JMC 305 with C or better; minimum 2.50 GPA
JMC	485	TV Magazine	Produce a 13-week television magazine program for Arizona PBS focusing on science research at Arizona State University, using long form DSLR video storytelling skills. Opportunity to field produce, research, report, use videography, writing and graphic skills under the direction of instructors.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prereq(s) C or better: Journ & Mass Comm or Sprts Journ BA mjr; JMC 301 or 315; JMC 345 or 494 (DSLR Vid Story); min 2.50 GPA; Credit allowed for only JMC 478 (TV Special Prj) or 485 or 494 (Pub Insight Net) or 498 (TV Mag) OR Visiting University Student
JMC	486	Digital Audiences Lab	Students participate in an immersive professional program experience to grow and engage digital audiences for real clients in an agency-like setting. Conduct audience and competitive research; analyze site and social content performance; create and measure paid and organic social media campaigns; execute SEM campaigns; create and optimize digital content; and make strategic recommendations to clients.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 315 with C or better; JMC 305 with C or better; MCO 307 with C or better; Credit is only allowed for JMC 486 or JMC 498 (Digital Audiences Lab) OR Visiting University Student
JMC	487	Howard Ctr Investigative Journ	Develops the next generation of watchdog reporters through hands-on investigative journalism projects. Students produce in-depth digital and documentary-style journalism that illuminates problems or wrongdoing and holds public officials accountable. The Center partners with national and regional news organizations to disseminate and publish student work. Completion of one Advanced Skills course with C or better (from Journalism and Mass Communication major map) is recommended to succeed in this course.	N	LEL	Y	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): JMC 301 or 302 with C or better; JMC 305 or 306 with C or better; Credit is allowed for only JMC 487 or JMC 498 (Howard Center for Investigative Reporting) OR Visiting University Student
JMC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Journalism and Mass Communication or Sports Journalism major; minimum 2.50 cumulative GPA OR graduate Mass Communication student OR Visiting University Student

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JMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		Prerequisite(s): Journalism and Mass Communication BA major; minimum 2.25 GPA; successful completion of English proficiency exam OR Master of Mass Communication student
JMC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-3		
JPN	101	First-Year Japanese I	Basic speaking, listening, reading, writing, computer skills with the Japanese language, as well as cultural knowledge. Hiragana, katakana, 80 kanji. For students without previous Japanese instruction.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Students may not enroll in JPN 101 if credit with C or better earned in JPN 110, 201, 202, 210, 301, 302, 309, 310, 311 or 401
JPN	102	First-Year Japanese II	Continued development of JPN 101 skills. 110 additional kanji. Communication skills goal: ACTFL Guideline Novice-High.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 101 with C or better; Students may not enroll in JPN 102 if credit with C or better earned in JPN 110, 201, 202, 210, 301, 302, 309, 310, 311 or 401 OR Visiting University Student
JPN	110	Intensive Japanese I	First semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Credit is allowed for only JPN 101 or JPN 102 or JPN 110
JPN	115	Japanese Popular Culture	Examines different media of Japanese popular culture such as comics (manga), animation (anime) and film for evidence of how the Japanese express their self identity in Japanese society. By separating the media into themes such as technology and the future, war/apocalypse/disaster, violence in society, gender and sexuality, and human relations, understands the Japanese culture (and social consciousness) more intimately. Students view films, read scholarly articles on the subject matter, and actively participate in the course through written papers and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed for only JPN 115 or SLC 115
JPN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	201	Second-Year Japanese I	Continued development in speaking, listening, reading, writing, computer skills with the Japanese language, as well as cultural knowledge. 110 additional kanji.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 102 or 110 with C or better; Students may not enroll in JPN 201 if credit with C or better earned in JPN 202, 210, 301, 302, 309, 310, 311 or 401 OR Visiting University Student
JPN	202	Second-Year Japanese II	Continued development of JPN 201 skills. 110 additional kanji. Communication skills goal: ACTFL Guideline Intermediate-Low to Intermediate-Mid.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): JPN 201 with C or better; Students may not enroll in JPN 202 if credit with C or better earned in JPN 210, 301, 302, 309, 310, 311 or 401 OR Visiting University Student
JPN	206	Japanese Calligraphy	Introduces Japanese calligraphy using traditional implements, starting with basic brush strokes and stroke order for kanji and kana.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
JPN	210	Intensive Japanese II	Second semester of the one-year intensive Japanese language sequence designed to train novice-level speakers to become competent intermediate speakers who can carry out conversation on familiar topics or handle straightforward situations. Emphasizes both oral and written communication through development of skills in listening, speaking, reading, writing and cultural awareness. Students manage a number of communicative tasks in social situations. Conversations are restricted to a few of the predictable topics necessary for survival; students express themselves in straightforward situations and on familiar topics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8		Prerequisite(s): JPN 102 with B or better or JPN 110 with C or better; Students may not enroll in JPN 210 if credit with C or better earned in JPN 201, 202, 301, 302, 309, 310, 311 or 401 OR Visiting University Student
JPN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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JPN	301	Third-Year Japanese I	Development of reading skills, using authentic materials to comprehend structure, grammar, idioms, and culture. Expansion of kanji and vocabulary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	302	Third-Year Japanese II	Continued development of reading skills, as in JPN 301. Reading proficiency goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 301 with C or better OR Visiting University Student
JPN	309	Japanese Oral Communication I	Development of interpersonal, interpretive, and presentational oral/aural skills in familiar topics with sociolinguistic skills and understanding of Japanese culture. JPN 309 and 310 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 202 or 210 with C or better OR Visiting University Student
JPN	310	Japanese Oral Communication II	Continued development of oral/aural skills, with increased emphasis on honorifics. Speaking proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 309 with C or better
JPN	311	Japanese Composition I	Learning structural guidelines for narrative writing, developing organization skills to support ideas. Writing proficiency outcome goal: ACTFL Guideline Intermediate-High.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or 210 with C or better
JPN	315	Lang of Japanese Pop Culture	Develops reading and listening skills using Japanese popular culture materials of various genres, including narratives, comics, anime, film and music. Introduces linguistic elements that are not found in regular language textbooks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): JPN 202 or JPN 210 with C or better; Credit is allowed for only JPN 315 or JPN 394 (The Language of Japanese Popular Culture I)
JPN	316	Lang Japanese Popul Culture II	Understands Japanese popular culture materials such as anime, music, movies, manga and narratives through their target language of Japanese. Emphasized language areas are honorifics, formal expressions, dialects and slang and vulgar expressions that are tolerable in the classroom environment. Introduces elements of the history, geography and culture of Japan to further students' understanding of the materials. Students improve their receptive skills, i.e., listening and reading, by engaging with these materials, and through the technique of shadowing, also improve their pronunciation, intonation and grammatical accuracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre- or corequisite(s): JPN 301 with C or better; Credit is allowed for only JPN 316 or JPN 394 (The Language of Japanese Popular Culture II)
JPN	333	Japanese Civilization	Provides an overview of the entire sweep of Japanese history and culture from the earliest inhabitants of the Japanese archipelago, circa 30,000 BCE, to the earthquake and tsunami of March 2011 and beyond. Covers the main events, narratives, and individuals of Japanese history through documentary sources and literary works such as plays, novels, poetry and manga.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only JPN 333 or JPN 394 (Japanese Civilization) or SLC 394 (Japanese Civilization)
JPN	355	Religious Practice/Modrn Japan	Examines the influence of Japanese religions on Japanese value, culture and society while surveying the major religious traditions of modern Japan focusing on Shinto, Buddhism and new religions. Also explores current religious practices in Japan and how religion interacts with the government, community groups and daily lives of people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only JPN 355 or SLC 355 or JPN 394 (Religious Practice of People in Modern Japan) or SLC 394 (Religious Practice of People in Modern Japan) OR Visiting University Student
JPN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	401	Reading Modern Japanese Texts	Readings in modern literary and expository texts. Focus varies from year to year.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; JPN 302 with C or better; SLC 202 with C or better OR Visiting University Student
JPN	414	Intro to Classical Japanese	Readings from various genres of pre-20th-century literature, with analysis of the structure of the classical language.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better OR Visiting University Student
JPN	415	Advanced Classical Japanese	Close readings of selected premodern texts, with focus on grammatical and stylistic features.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 414 with C or better
JPN	430	Buddhist Meditation East Asia	Surveys various types of Buddhist meditation in different schools, starting from those of India, and more from East Asia, particularly Japan. Investigates the pragmatic function of each meditative technique, how some of the fine/performing/martial arts were integrated with Buddhist ideas to become "meditation in action."	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only JPN 430 or SLC 430 or JPN 494 (Buddhist Meditation in Asia) or SLC 494 (Buddhist Meditation in Asia) OR Visiting University Student
JPN	445	Readings in Modern Japanese	Advanced study of selected facets of modern Japanese letters and culture, including literature, material and visual culture, film, and other media.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 401 with C or better; SLC 202 with C or better; Credit is allowed for only JPN 445 or JPN 535
JPN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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JPN	485	Japanese Lit & Art of Translat	Examines the theory and practice of literary translation with two-fold aims: first, to analyze the ways in which translation has been theorized and practiced in a variety of historical contexts; second, to provide a space in which to discuss, experiment with, and polish original translations of Japanese-language texts in a wide range of written and visual forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): JPN 302 with C or better; Credit is allowed for only JPN 485 or JPN 585 OR Visiting University Student
JPN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
JPN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JPN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
JPN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
JPN	501	East Asian Humanities	Provides MA and PhD students with a solid understanding of both the history of their academic discipline, as well as the various methodological approaches employed in the professional study of East Asian literature, history, language and culture. Centers on the close reading and discussion of a wide range of secondary sources, dealing with key issues in the development of East Asian humanities. Topics include premodern and modern discourses of language and literature; the trajectories of academic disciplines and approaches such as philology, sinology/Japanology, area studies and comparative literature; academic theories of space and temporality; translation studies; and book history. In addition to pursuing independent research, participants are expected to make regular presentations summarizing the main points in each week's readings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 501 or JPN 501
JPN	502	Academic Writing	Trains graduate students in research methodology and conventions in academic writing. Centers on fine tuning students' command of the various components in English expository essays within the academic field of East Asian studies. Also addresses various contexts in academic writing, such conferences and proposals targeting audiences beyond the disciplinary boundaries of East Asian studies.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHI 502 or JPN 502
JPN	585	Adv Problems of Translation	Theories and practice of translation; strategies for handling a variety of Japanese texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only JPN 485 or 585
JPN	586	History of Japanology	Provides students at the MA level with a deep understanding of the history of Japanese studies in the United States, Japan and Europe; the key issues and debates that have characterized the study of Japan from the eighteenth century to the present; and the methodological approaches employed in the professional study of Japanese literature and culture. Centers on the close reading and discussion of a range of primary and secondary sources (in English and Japanese) dealing with central issues in the development of Japan studies. In addition to pursuing independent research, students are expected to make regular presentations summarizing the main points in each week's readings. The course presumes that participants have the equivalent of 3+ years of college-level Japanese language study and a B.A. (or equivalent) in Japanese literature, language and/or culture.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JPN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JPN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JST	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
JST	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
JST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
JST	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Credit is allowed for only HST 211 or JST 211 or REL 211
JST	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
JST	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
JST	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
JST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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JST	302	Studies in History	Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 302 or JST 302 OR Visiting University Student
JST	304	Studies in European History	Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 304 or JST 304 OR Visiting University Student
JST	306	Studies in US History	Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 306 or JST 306 OR Visiting University Student
JST	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
JST	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST or REL 315 OR Visiting University Student
JST	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
JST	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375
JST	346	Israeli Wars in Israeli Movies	From its first day, the State of Israel has been in a state of war with the Arab countries. Every few years, the fighting erupted into an open war. At the beginning of the country, there was a consensus that the wars were forced on the Israelis, and therefore, the heavy toll on human life was unavoidable. Since the Six Day War, 1967, and the political change in 1977, Israeli society is split in attitude toward war. The absolute belief in the political and military leaders was shaken, and new political agendas entered the political arena. To this divided society, the Intifadas occurred with the waves of terrorism. These events added fire to the heated debates in Israel. One means of expression is through the cinema. In this course, students watch, analyze, and discuss selected movies on the Israeli wars and terrorism in the streets of Israel. Through these movies, produced by Israelis, we'll try to understand the mood and attitude of the Israelis toward war, enemies, and political and military leaders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FMS 349 or HEB 349 or JST 346 or HEB 394 (Israeli Wars in Israeli Movies) OR Visiting University Student
JST	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
JST	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student

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JST	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
JST	369	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
JST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
JST	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
JST	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
JST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
JST	490	Methods of Historical Inquiry	Capstone course in history as an academic discipline, including formulation of research questions, use of primary and secondary sources to evaluate, form and support historical arguments. Students draft and revise a scholarly research paper.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): History or History of Science, Ideas and Innovation or Jewish Studies or Secondary Education (History) major; ENG 102, 105, or 108 with C or better; min 55 hrs; Credit for only HST 300 or HST 495 or JST 490 OR Visiting University Student
JST	491	History of Antisemitism	Antisemitism means hostility, negative perceptions and persecution of Jews. Examines the evolution of antisemitism in the West from antiquity to modern times. Explains the history of antisemitism by looking at the interplay of religious, economic, cultural and political factors. Gives special attention to the origins of Christianity, the place of Judaism in Christian self-understanding, the power struggle between popes and emperors during the Middle Ages, the involvement of Jews in money lending, the alliance between the Jews and the secular princes, the rise of modern nationalism, and the place of racism in the politics of modern nation states. With a better understanding of the history of antisemitism, ponders the differences and similarities between premodern anti-Judaism and modern antisemitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours

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JST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
JST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
JST	495	Judaism, Science & World Rel	Studies the correlation between science and religion as an interdisciplinary study from a historical perspective. Session topics fall into three distinct units. The first correlates the physical sciences with Western religious theology; the second explores the consequences of the life sciences on religious psychology; and the third examines the impact of the interconnection between sciences and religions in society. Each unit is studied through specific readings, film, lectures, and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours
JST	496	Biblical Narratives	Presents different trends in synchronic approaches applied to the Bible such as narrative criticism, semiotics, reader-response criticism, and situates them both in the postmodern cultural context and in the history of biblical exegesis. Explores various literary devices in biblical narratives, such as repetition, type-scenes, characterization, the change of points of view, the use of metaphors. Studies each technique on particular biblical texts, literally translated into English, with a special emphasis on how these techniques guide the interpretation and create meaning. Questions the significance of literary approaches for religious or ideological texts, such as the Hebrew Bible. Also considers criticisms raised against these approaches, assesses their limits, and envisions their future.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; JST 210, 230 with C or better or REL 210 with C or better; Minimum 87 hours
JST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		
JST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
JUS	105	Intro to Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for freshmen and sophomores.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 105 or 305 OR Visiting University Student
JUS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisite: Must have less than or equal to 25 earned hours
JUS	200	Topics/Concepts/Issues/Justice	Uses critical thinking skills to analyze and comprehend controversial social issues (e.g., abortion, affirmative action, capital punishment, the flat tax, and immigration).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	207	Homicide and Serial Killers	Explores the scholarship, research and rational analysis of the mass, spree and serial killer. It will examine some of the causes and underpinnings of these killers within the U.S. as well as the major theories and understandings of this phenomenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
JUS	214	The Pursuit of Justice	Introduces a wide variety of institutions and organizations—locally, nationally and internationally—that seek justice. Provides an understanding of the many ways justice is institutionalized in modern societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	
JUS	215	Bob Marley Reggae & Resistance	Studies political content, influence, and impact of Caribbean popular music, in particular the music of Bob Marley.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & G	Credit is allowed for only AFR 215 or AFR 394 (Bob Marley: Reggae and Resistance) or JUS 215
JUS	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
JUS	222	Drugs and Justice	Provides an historical overview of the development and circulation of certain drugs; explores the more specific effects of drug use and abuse in everyday life; and examines the efforts by governments to both restrict/end and facilitate/expand the drug trade.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Credit is allowed for only JUS 200 (Drugs and Justice) or 222

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JUS	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
JUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
JUS	300	Race and Racism in Africa	Advanced study of the concepts of race and racism and how they manifest themselves in the USA, the Caribbean, and Africa. Examines the construction of race, racism, and race relations in Africa and the African Diaspora as well as practices to challenge ethnicity, racism, and racial oppression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 301 (or AFS 301) or JUS 300
JUS	301	Research in Justice Studies	Focuses on developing and evaluating research designs, data collection, and the relationship between validity and reliability. Stresses methods for conducting research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	302	Statistical AnalysisJusStd	Concepts and application of descriptive and inferential statistics, including linear regression, for justice studies research..	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170, or approved MA General Studies course with C or better; minimum 24 hours OR Visiting University Student
JUS	303	Justice Theory	Examines classic and contemporary philosophies and theories of justice, including legal, social, and criminal justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	304	Globalization&Carib Politics	In-depth study of the complexities of contemporary Caribbean politics and political economy. Examines the countries that constitute the Caribbean community and common market and the Caribbean Latin American countries such as Cuba and the Dominican Republic and analyzes the historical evolution of the region's political and economic systems and the impact of globalization. Traces the development of the region's political economy from the colonial period to the present; looks at the impact of globalization on contemporary politics, economics, and culture and the region's response.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 304 (or AFS 304) or JUS 304
JUS	305	Principles of Justice Studies	Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Appropriate for juniors and seniors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 105 or JUS 305 OR Visiting University Student
JUS	308	Courts and Society	History and development of courts. Relationship between dispute resolution mechanisms and cultural/social structure/processes in which they are embedded.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	317	Genes, Race and Society	An in-depth examination of the biological and social construction of race in western societies. Special emphasis is placed on examining these constructs from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H & C	Prerequisite(s): AFR 200 or minimum 30 hours; Credit is allowed for only AFR 317 or JUS 317
JUS	320	Community and Social Justice	Discusses and analyzes definitions of community; impact of environment on behavior; promises of community organization for local empowerment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	321	Wealth Distribution & Poverty	Examines wealth and income distribution in the United States and analyzes ideological and political forces producing an increasingly unequal society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	323	Justice&Develop, Welfare State	Provides a comprehensive overview of the development of social welfare and relevant issues pertaining to social justice. Introduces upper-division students to different ideas about the meaning of social welfare in the context of the development of the U.S. welfare state.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student

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JUS	326	Political Reggae,Calyp,Hip Hop	This is a reading and writing intensive course that employs critical thought that explores African Diaspora popular music as a medium of social and political expression. It examines the political content of Reggae, Calypso and Hip Hop and their role in triggering and influencing popular discourse in the Caribbean and the USA. Course material will analyze the interrelationships among the musical forms and their role in fostering Black and Pan African Cultural Identity, Political Consciousness and World Peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & H & G	Prerequisite(s): AFR 200 (or AFS 200); minimum 45 hours; Credit is allowed for only AFR 325 (or AFS 325) or JUS 326
JUS	327	Music & Justice: Revolution	Examines music and its diverse role in society, including its impact on social and political control as well as its relationship to justice. Since the beginning of recorded history, music has played a significant role in the production of formal and informal social control. Societies use music as part of ritual and religious worship, entertainment, expression, communication and aesthetic pleasure as well as a means of political protest. However, music has also been effectively used by states, from liberal democracies to dictatorships, to compel obedience whether through propaganda or torture in inflicting and/or exacerbating pain and suffering. Indeed, current research reveals the powerful effects of music at a cellular level to mobilize people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 327 or JUS 394 (Music, Social Conflict, and Justice) or JUS 494 (Music, Social Conflict, and Justice) OR Visiting University Student
JUS	329	Domestic Violence	Critical inquiry into the legal, historical, theoretical, comparative, and treatment literatures on domestic violence; application of contemporary justice and social change theories to research how society defines and organizes against domestic violence. May include consideration of intimate partner abuse, child abuse and neglect, and gender violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	330	African American Politics	In-depth study of the dynamics of the African American political experience. Examines the historical development of African American politics from the anti-slavery era to the Civil Rights breakthrough of the 1960's through the present political climate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 or minimum 45 hours; Credit is allowed for only AFR 330 or JUS 330 OR Visiting University Student
JUS	332	Politics Energy Policy&Justice	Examines the social and political dimensions that shape energy and environmental policy. Focuses primarily on the U.S. Introduces elements of regional or global policy where they influence or shape domestic politics and policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	334	Science, Tech, & Inequality	Conceptual and theoretical frameworks; provides empirical case studies that contribute to understandings of science and technology as they are used in society. The applications of science and technology in society need to be understood as instrumental to the creation and maintenance of inequality within and between societies. Science and technology does not merely cause or alleviate inequality, but are more profoundly implicated in social relations regarding distribution and access to the benefits of different technologies as well as exposure to risks from science and technology projects in society. The more pervasive and obdurate sources of social distribution are enshrined and entrenched in these scientific and technological systems.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 334 or JUS 334
JUS	335	Organized Crime	Critical inquiry into organized crime and its illegal activities; analysis and application of contemporary theories; analysis of strategies for reducing the prevalence and power of organized crime in the U.S. and other nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
JUS	345	Peoples&Cultures of Caribbean	Traces the socio-political history of the wider Caribbean from the 15th century to the present. Focuses on the following broad areas: the early years of European settlement and colonization; the construction of slavery and plantation society; and the transition from colonization to political independence. Critically examines the origins and building blocks of Caribbean society as well as analyzes the linkages between the region and the rest of the African diaspora.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G & H	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 345 (or AFS 345) or JUS 345

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JUS	347	Immigration Education & Family	Cultural processes related to immigration and their impact on the social construction of the immigrant family and the education of other children. Immigration theories, immigration debates and discourses, the immigration landscape of the 21st century, conceptualizations of the family, and the methodological challenges family researchers face. Topics include issues pertaining to education and the family and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only APA 347 or JUS 347 or APA 394 (Immigration, Education & Family) or JUS 394 (Immigration, Edu. & Family) OR Visiting University Student
JUS	350	Immigration and Justice	Examines immigration policy, history of immigration, refugee issues, labor force participation, gender, family, children, social networks, and transnationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	351	Gender and Hip Hop	Interrogates the history and global proliferation of hip hop as a set of cultural and consumer practices including music, dance, art, fashion, language and entrepreneurialism. Uses an intersectional approach to unpack hip hop's contributions to larger social discourses around race, gender, gender expression, sexuality, sexual identity and sexual expression, and youth culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AFR 351 or AFR 394 (Gender and Hip Hop) or JUS 351 or JUS 394 (Gender and Hip Hop) or WST 351 or WST 394 (Gender and Hip Hop) OR Visiting University Student
JUS	352	Global Politics of Human Rights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
JUS	353	Borders, Prisons and Suburbs	Explores how the relationship between race and space has been important to the development of broad patterns of social inequality in the United States. Through a variety of readings, films and other material, examines how ideas of race and space have been important to the making and maintenance of national boundaries, citizenship, regional histories and spatial typologies such as border, ghetto, suburb and prison.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 24 hours; Credit is allowed for only AFR 352 (or AFS 352) or APA 352 or JUS 353 or TCL 353
JUS	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
JUS	360	Law and Social Control	Resolution of social issues through the application of law as an agent of social control. Nature, sanctions, and limits of law. Categories of law and schools of jurisprudence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	365	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
JUS	370	Cultural Diversity and Justice	Analyzes how cultural diversity challenges and broadens conventional understanding of justice. Examines how cultural beliefs and practices come into conflicts with public law and policy. Assesses the U.S.'s performance on incorporating cultural diversity in its social institutions including education, media, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	371	Sexuality and Social Justice	Theoretical and case-study based examination of how people, either alone, in groups, as members of an organization or participants in a social movement, seek to change the meaning, representation and regulation of sexuality. Analysis and practice of skills, strategies and tactics associated with the pursuit of "sexuality justice" by advocates within social movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 371 or JUS 394 (Sexuality and Social Justice)
JUS	374	Holocaust, Genocide & Human Rights	Explores the psychological, social, historical, and political dimensions of the Holocaust and the phenomenon of genocide. Also examines the more recent international cases of genocide along with a discussion and analysis of the Universal Declaration of Human Rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	375	Justice and the Mass Media	Analysis of the impact of mass media and popular culture on social justice issues, including criminal justice. Critical inquiry into portrayals of gender, race, culture and class in mass media and other forms of popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours

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JUS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
JUS	382	Justice and Pop Culture	Explores the connections between the production, reproduction, and consumption of popular culture and the resultant impact on issues of justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
JUS	385	Justice and Everyday Life	Justice and injustice in everyday life and how small things can become legal issues. Role of language and interaction in social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
JUS	405	Inequality, Economy & Justice	Addresses economic issues and justice implications, including the interplay among economic conditions, race-ethnicity, class, and gender worldwide.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	408	Comparative Develop of Welfare	Embodies a multidisciplinary perspective on welfare issues and exposes students to different ideas about justice beyond the United States. Allows them to better understand how and why states organize and deliver justice in different ways. Exposes students to cross-national variation in how history, culture, politics, and economics have shaped the development and content of different types of welfare states. Engages theoretical perspectives from political sociology and political economy concerning the emergence and future fate of these welfare states. Analyzes comparative analysis of three distinctive types of welfare states; Liberal, Conservative, and Social Democratic Welfare States, with particular emphasis on their varying capacity to combine economic efficiency with social justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	410	Punishment: Logic and Approach	Analyzes forms of punishment, how and why they have changed. Areas include philosophy, history, and social structure of punishment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	420	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
JUS	421	Race/Ethnicity & Politics	Reading and writing intensive course that employs critical thought to look at the competition for political power among different ethnic groups in Africa, the Caribbean and the USA and the implications for political stability, economic development, democratic governance, democratization, nationhood and the empowerment of African and African Diasporan populations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): AFR 200 (or AFS 200) and minimum junior standing OR minimum 9 upper-division hours in any classes with the following prefix: AFH, AFS, AFR, APA, JUS, POS, SGS, SOC, WST; Credit is allowed for only AFR 420 or JUS 421
JUS	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422
JUS	424	Ethics and Alternative Tourism	Cultural processes related to alternative tourism and their impact on both the tourist and local. Travel, tourism, globalization, development, human rights and the commodification of people and places. Topics include issues pertaining to Western tourism, commodification, race/class/gender and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 424 or JUS 494 (Sex, Drugs and Death)
JUS	425	Race, Gender, and Justice	Critically examines major theories, research findings, policies, and controversies concerning race, ethnicity, gender, and crime.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	427	Identity and Justice	Theory of symbolic interaction which provides a vocabulary, observational methodology (i.e., dramaturgy) and a set of grounding concepts that allow students to explore identity in its everyday practices. Explores the transformation and emergence of identities in public discursive spaces and the political impact of identity as it is deployed (invoked) and interpreted (imputed) among interactants in the social world. Establishes the position that identity operates as a central constitutive function in the construction of meaning and, subsequently, our ideas and attitudes about justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 36 hours; Credit is allowed for only JUS 427 or JUS 494 (Identity & Justice)

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JUS	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
JUS	430	Soc Protest/Conflict & Change	Analyzes historical and contemporary protest movements advocating equality based on race, gender, and sexual orientation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
JUS	435	Cinema and Justice	Tracks the conceptualizations of justice that have been and are currently conveyed in film, including but not limited to the relationship between crime and various notions of justice. Other depictions include social issues such as gender, race, or economics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	437	Disability and Justice	Examines the construction of disability as a social, cultural and political phenomenon. Dominant understandings of disability typically use narrow medical and therapeutic explanations and thus disabled individuals often are defined as deviant, stigmatized, incompetent and marginal. Disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, this class examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 437 or JUS 494 (The Social Construction of Disability)
JUS	438	Human Diff:Dilemmas of Justice	General examination of democracy and human differences that expands into in-depth investigations of (1) racial difference and identity politics; (2) gender and sexual difference in democracy; and (3) cultural difference and the multiculturalism debate.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	440	PrisonsPower&Punishment	Examines the history and logics of a "U.S. Penal Democracy," tracing how prisons became the preferred and accepted choice for punishment. Traces how the practices, policies and rationalizations of punishment (physical, psychological and social) have been at the center of U.S. politics beginning in the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 36 hours. Credit is allowed for only JUS 440 or JUS 494 (Prisons, Power and the Punishments of History)
JUS	444	Environment and Justice	Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only FIS 444 or JUS 444
JUS	445	Surveillance and Society	Explore how surveillance technologies alter social life; the complex ways that they interact to produce security, fear, control, and/or vulnerability.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
JUS	460	Feminism and Justice	Explores feminist thought and critiques traditional political theories. Examines issues of racism, sexuality, and the law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	463	Discretionary Justice	Use/abuse, key issues/manifestations of discretion in legal system and other societal institutions. Theoretical/empirical linkages between discretion and discrimination, based on race, ethnicity, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours

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JUS	465	Death Penalty in the U. S.	Focuses on capital punishment in the United States; explores negotiation of law, politics, morality, public policy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	467	Terrorism, War, and Justice	Examines the relationship among terrorism, war, and justice. Analyzes terrorism within the larger study of deviance and social control, comparative politics, hegemony, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	468	Protest, Justice, Law & Media	Examines research on protests, political deviance, trials/law and justice, and critiques some of the media representations of related ideas. Investigates global social movements, political protests and nascent political trials. Analyzes varied justifications for defining action as diversity, deviance or crime and the reasons for using criminal, civil or alternative (positive) sanctions (especially via indigenous peoples). Explores the encompassing meaning of a political trial. Many people throughout the world find everyday life to be a trial, especially those placed on the margins of globalization. Expands the research on media and trials that usually have been examined narrowly by legal institutions in North America and reinforced by hegemony.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 468 or JUS 494 (Protest, Justice and the Media)
JUS	469	Political Deviance and the Law	Examines the controversies created by political and deviant behavior, including a critical view of law as an agent of social control.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	470	Alternative Dispute Resolution	Critical examination of the tenets of alternative dispute resolution movement; exposure to the programs of ADR, including community and court based.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours
JUS	475	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
JUS	477	Youth and Justice	Critical examination of youth-related justice issues, including economic justice, violence against youth, delinquency, and the juvenile justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
JUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
JUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours OR Visiting University Student
JUS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
JUS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
JUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
JUS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Social and Cultural Pedagogy MA student, Justice Studies MS or PHD student
JUS	501	Justice Theory	Theories and philosophies of social, economic, political, and criminal justice. Applies theories to contemporary justice issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	509	Stat Problems/Justice Research	Methodological problems of research design and statistical methods specific to justice studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	521	Qualitative Data Analysis & Eval	Analyzes qualitative data, e.g., field notes, in-depth interview transcripts, document analysis, coding, and retrieval with a microcomputer; qualitative evaluation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student

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JUS	530	Policy, Advocacy & Disability	Graduate seminar focuses on social policy and critical advocacy as it relates to disability culture and rights. Focuses on state, national and international discourses around disability-related policies, rights, social movements and advocacy/activism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only JUS 530 or JUS 598 (Policy, Advocacy and Disability) or JUS 598 (Social Policy and Critical Advocacy)
JUS	542	American Indian Justice	Provides a broad overview of American Indian and Alaskan Native issues of justice and injustice in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	550	Gender, Race,&Economic Justice	Provides a critical social scientific perspective on economic issues particularly as they relate to gender, race, and class equality. Examines issues of economic inequalities as they are distributed along the lines of gender and race. Components converge to identify the social justice ramifications of economic policy and economic conditions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	555	Migration/Immigration &Justice	Explores the causes and consequences of immigration to the United States and the incorporation of immigrants into the American economy and society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	560	Women, Law, and Social Control	Gender issues in the exercise of formal and informal mechanisms of social control, including economic, social, legal factors, both violent and nonviolent.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	565	Crit./Comp. Issues: Disability	Examines the construction of disability as a social, cultural and political phenomenon. Focuses on how disability is defined and represented in society as well as the implications/consequences of such definitions. Hegemonic understandings of disability typically have employed narrow medical and therapeutic explanations. From such deterministic perspectives, the disabled individual often has been defined as deviant, stigmatized, incompetent and marginal. This class rejects the perception of disability as a functional impairment that limits a person's activities. Instead, disability is a construct that finds its meaning and representation within a social and cultural context. Accordingly, examines the ideologies that such representations can conceal in order to crack the hegemonic façade, challenging the ways in which disability is perceived and treated by the dominant society.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 565 or JUS 598 (The Social Construction of Disability)
JUS	575	Race, Gender, and the Law	Explores the law and social sciences literature on race, ethnicity, gender, and the legal order. Critically assesses the major contemporary theoretical and policy debates and controversies in the field from a variety of disciplinary and interdisciplinary lenses, setting these debates in their historical contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	588	Justice and the Mass Media	Analyzes the nature and impact of mass media messages about justice concerns for social order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JUS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	610	Law and the Social Sciences	Analyzes the theoretical grounds underlying diverse studies of law and society; creation and administration of law, and jurisprudence and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	620	Justice Research Methodology	Covers the epistemology of knowledge and method in justice research, history, and philosophy of social science and critical inquiry, as well as perspectives that link these concerns to research strategies. Explores the strengths and weaknesses of introduced methodologies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 500 with C or better
JUS	630	Data Analysis for Justice Rsch	Bivariate and multivariate techniques of data analysis and hypothesis testing for justice-related research and use of information and statistical programs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 509 with C or better
JUS	633	Community Research	Focuses on epistemology, methodology, and the production of knowledge about community and seeks to link theory, methodology, specific research strategies, and social criticism about the conduct of community research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	640	Theoretical Perspect/Justice	Analyzes philosophical perspectives of justice; linkages between social science theory and justice constructs; application of justice to social issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): Justice Studies MS or PHD student; JUS 501 with C or better
JUS	650	Adv Qualitative Data Analysis	Advanced qualitative data collection and analysis techniques, including ethnography, in-depth interviews, field notes, coding, transcribing, content analysis, textual analysis.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Justice Studies MS or PHD student
JUS	651	Theorizing Sexuality&Soc Just	Examines the intellectual development of "sexuality" knowledge across disciplines; analyzes the regulation of sexuality through social policy and cultural norms; case studies of how social movements counter normative definitions of sexuality and work toward their vision of "sexuality justice."	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only JUS 591 (Sexuality and Social Justice) or JUS 651 or JUS 691 (Sexuality and Social Justice)
JUS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
JUS	660	Globalization&Economic Justice	Explores the political economy of globalization from a theoretical as well as practical standpoint. Sources used come from a variety of disciplines--sociology, political science, international relations, geography, and economics--all of which contribute unique theoretical and normative tools for analyzing the effect of global forces on economic justice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Graduate student
JUS	669	Political Trials/Indigenous Ju	Focuses upon research on political trials, deviance, and conceptions of indigenous and contemporary justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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JUS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
JUS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	100	Intro to Health and Wellness	Current concepts in health, exercise, and wellness. Emphasizes personal health, theories, attitudes, beliefs, and behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Credit is allowed for only HEP 100 (EXW 100) or KIN 100 OR Visiting University Student
KIN	101	Introduction to Kinesiology	Introduces the disciplines and professions associated with kinesiology, including an overview of historical and philosophical foundations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
KIN	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	290	Intro Evidence-Based Practice	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the health and health care professions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s) w/ C or better; College of Health Solutions major; ENG 101, 105, or 107; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321; Credit allowed for only KIN 290 or NTR 290 OR Visiting University Student
KIN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
KIN	310	Collegiate Sports	Participation in men's or women's intercollegiate competition. May be repeated for 4 hours 1 per year. Y/E grade.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1		
KIN	334	Functional Anatomy/Kinesiology	Muscles, bones, joints, and nerves and how they produce movement. Emphasizes muscle origins, insertions, actions, and innervations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 201 with C or better; BIO 202 with C or better OR Visiting University Student
KIN	335	Biomechanics	Basic anatomical and mechanical principles applied to human movement. Emphasizes kinematic and kinetic concepts.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; PHY 111 with C or better; MAT 170, 210, 251, 270, 271, or 272 with C or better OR Visiting University Student
KIN	340	Physiology of Exercise	Physiological mechanisms of acute responses and chronic adaptations to exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; BIO 201 with C or better; BIO 202 with C or better; CHM 101, 113, 114, 115, 116, 117, or 118 with C or better OR Visiting University Student
KIN	345	Motor Behavior	Evaluates movement through the perspectives of neural control, development through the lifespan, and the most effective ways to teach and learn motor skills.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better; BIO 201 with C or better OR Visiting University Student
KIN	348	Psych Skills for Optimal Perf	Applies psychological techniques and their use to improve effectiveness and performance in sport and related areas.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 101; PSY 101 OR Visiting University Student
KIN	352	Psychosocial Aspects/Phys Act	Interrelationships between physical activity and psychosocial variables, including socialization, cultural values, aggression, and motivation. Includes the psychological benefits of physical activity and exercise adherence.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C	Prerequisite(s): KIN 101 with B or better; PSY 101 with C or better OR Visiting University Student
KIN	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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KIN	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
KIN	412	Biomechanics/Skeletal System	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discussion of injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 with C or better; Credit is allowed for only KIN 412 or KIN 512 OR Visiting University Student
KIN	413	Qualitative Analy/Sport Biomec	Develops systematic approach for detecting and correcting errors in human performance using anatomical and mechanical principles.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 335 (EPE 335) with C or better
KIN	414	Electromyographic Kinesiology	Muscular contributions to human movement, muscle mechanics, electrophysiological basis, and practical application of electromyography.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 335 with C or better; KIN 340 with C or better OR Visiting University Student
KIN	415	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 330 or KIN 334; Credit is allowed for only KIN 415 or KIN 515 or KIN 494 (Theory of Corrective Exercise) OR Visiting University Student
KIN	418	Experimental Neuromechanics	Students experience different quantitative techniques to analyze human movement from a motor control and biomechanical perspective.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): KIN 290; KIN 335 OR Visiting University Student
KIN	421	Human Motor Control	Focuses on understanding how the human central nervous system controls, regulates, and learns movements.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	422	Motor Control/Spcl Populations	Discusses principles of motor control theories and related practical applications for certain special developmental populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	423	Motor Control and Aging	Functional and behavioral changes to the motor control system as humans age, how specifically it impacts motor control and learning.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 345 with C or better OR Visiting University Student
KIN	424	Neural Aspects Move & Rehab	Provides an in-depth understanding of how the nervous system controls movement. Students gain insight into how the enormous repertoire of human movements (e.g., gait, posture, voluntary hand movements) is controlled by a distributed motor system (e.g., spinal cord, basal ganglia, motor cortex); how pathology to the system alters movements; and how rehabilitative approaches address these pathologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 345; Credit is allowed for only KIN 424 or KIN 494 (Neural Aspects of Movement and Rehabilitation) OR Visiting University Student
KIN	437	Biomechanics and Motor Control	Guides students to critically evaluate how the physical and mechanical properties of organisms and their environment affect biological tissues, structures, and motor control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 181 with C or better; MAT 170 with C or better; PHY 111 with C or better; Credit is allowed for only BIO 537 or KIN 437 or KIN 537 or KIN 494/598 (Comparative Biomechanics and Motor Control)
KIN	440	Exercise Biochemistry	Study of bioenergetics and metabolism of cellular (skeletal muscle, heart, and liver) organelles and proteins during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 440 or 532
KIN	441	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better; Credit is allowed for only KIN 441 or KIN 531 OR Visiting University Student
KIN	442	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 442 or KIN 536 OR Visiting University Student

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KIN	443	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better; Credit is allowed for only KIN 443 or KIN 533 OR Visiting University Student
KIN	444	Metabolic Adaptations/Exercise	Examines physiologic adaptations to exercise training as they relate to metabolism and tissue functions.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Visiting University Student
KIN	446	Pediatric Obesity	Covers a variety of aspects related to pediatric obesity including the causes and consequences in terms of physiologic, genetic, psychosocial, environmental and economic. Also discusses potential interventions such as behavioral, pharmacologic, surgical and public health and policy. Evidenced-based course where research guides class lectures and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340; Credit is allowed for only EXW 412 or KIN 446 or EXW 494 (Pediatric Obesity) or KIN 494 (Pediatric Obesity)
KIN	447	ECG Interpretation	Using ECG data, this course comprehensively investigates cardiac arrhythmias and interactions with therapeutic drugs and exercise.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340 with C or better OR Exercise and Wellness major; EXW 315 with B or better; Credit is allowed for only KIN 447 or KIN 547 OR Visiting University Student
KIN	450	Biopsychosocial Perspectives	Uses a biopsychosocial perspective to examine the interrelationships on physical activity and health (physical and mental).	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 352 (EPE 352) with C or better
KIN	452	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): KIN 352 (EPE 352 or PED 352) with C or better; Credit is allowed for only KIN 452 or 522
KIN	454	Motivational Theory Exe/Health	Assesses motivational theories relevant to the field of exercise and health psychology. Evaluates research and utilizes the findings to create applied public service announcements targeted toward a specific health issue (e.g., exercise, nutrition, smoking) and a specific population. Assesses students on four group public service announcements and "mini exams" for each unit. Taught in class, online and in a hybrid format.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 352 with C or better; Credit is allowed for only KIN 454 or KIN 494 (Motivational Theory in Exercise & Health)
KIN	460	Theory of Strength Training	Research and theories on developing muscular strength; programs for developing muscular strength.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; KIN 340 with C or better OR Visiting University Student
KIN	465	Muscle Physiology	Discusses the cellular and systems physiology of the skeletal and cardiac muscle systems, as well as presents research on the effects of exercise on skeletal muscle function and adaptation. Describes and recognizes the detailed structure, composition and biochemical properties of skeletal muscle. Applies knowledge of ultrastructure, microanatomy and biochemical properties of skeletal muscle to factors influencing its form and function. Describes the factors that affect muscle adaptation. Applies knowledge of muscle gene expression to the heterogeneity of metabolic and molecular responses to skeletal muscle. Compares and contrasts differences among skeletal, smooth and cardiac muscle fiber types. Interprets and analyzes current research findings and applies these concepts to endurance and strength training adaptations. Develops an understanding of many of the molecular signaling pathways regulating muscle adaptation.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 315 or KIN 340 with C or better; Credit is allowed for only KIN 465 or KIN 494 (Muscle Physiology) or KIN 598 (Muscle Physiology) OR Visiting University Student
KIN	466	Cardiovascular Exercise Phys	Examines varying concepts related to cardiovascular exercise physiology. Covers the basics of the cardiovascular system, how the system works both at rest and during exercise, and how it responds to exercise training. Evaluates research and utilizes the findings to enhance learning of course topics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 340; Credit is allowed for only KIN 466 or KIN 494 (Cardiovascular Exercise Physiology) OR Visiting University Student
KIN	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; Corequisite(s): junior or senior standing
KIN	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
KIN	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
KIN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): minimum 25 hours OR Visiting University Student

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KIN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
KIN	512	Biomechanics/the Skeletal Syst	Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discusses injury mechanisms.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 412 or 512
KIN	515	Theory of Corrective Exercise	The philosophic approach of assessing whole body movement. Expands the student's understanding of the basic movement patterns needed to reduce injury and how the body compensates for movement impairments. Students gain practice screening movement to identify imbalances and dysfunction and learn how to apply corrective exercise techniques.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only KIN 415 or KIN 515
KIN	520	Applied Sport Psychology	Psychological theories and techniques applied to a sport to enhance the performance and personal growth of athletes and coaches.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate OR undergraduate postbaccalaureate student; Credit is allowed for only KIN 448 or KIN 520
KIN	522	Exercise Psychology	Contemporary research and theory as related to human behavior and health in an exercise setting.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 452 or 522
KIN	523	Motor Control and Aging	Focuses on the functional and behavioral changes to the motor system as humans age and how specifically it impacts motor control and learning.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	530	Exercise and Sport Physiology	Covers both acute and chronic adaptation to physical activity with emphasis placed on exercise prescribed to enhance performance in sport and occupational fields relying on maximal or near-maximal efforts.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate or undergraduate postbaccalaureate student
KIN	531	Physiology of Women in Sport	Physiological aspects of women engaging in physical activity. Emphasizes factors affecting performance and health throughout life.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 441 or 531
KIN	532	Exercise Biochemistry	Understanding the basic biochemical principles and enzyme pathways involved in energy transduction during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 440 or 532
KIN	533	Exercise Endocrinology	Discusses current research and theory concerning hormonal changes during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 443 or 533
KIN	536	Fuel Metabolism	Discusses current research concerning the metabolism of carbohydrate, fat, and protein during exercise.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student; Credit is allowed for only KIN 442 or 536
KIN	540	Sport Biomechanics	Includes instruction and practical experience in the detailed analysis of sport movements designed to both reduce injury potential and maximize performance.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate or undergraduate postbaccalaureate student
KIN	545	Movement Assessment and Eval	Students perform different laboratory and clinical techniques to analyze human movement for biomechanical applications. Delivered as two components: lecture and laboratory. The lecture component serves to discuss the theory behind quantitative analysis techniques, proper equipment usage, data processing techniques and the connection to biomechanical principles. During the laboratory component students gain hands-on experience with the equipment by performing assigned experiments and clinical assessments. Follows with practice in analyzing, reporting, interpreting and presenting data. Additionally, students make recommendations and assign exercises to correct impaired movement when appropriate.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515

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KIN	547	ECG Interpretation	Comprehensive investigation of the heart rhythm disturbances that occur within the chambers and conducting tissue of the heart. Partitioned into three sections allowing the systematic review of arrhythmias that occur in the atria, AV junction and ventricles of the heart. The material is designed to maximize understanding by analyzing electrocardiogram rhythm strips to reinforce applying the theoretical component of the course. Also uses the application of these theories through laboratory experiences allowing hands-on experience with electrode placement and 12 lead ECG interpretations.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Clinical Exercise Physiology MS or Exercise and Wellness MS student; Credit is allowed for only KIN 447 or KIN 547 or KIN 598 (ECG Interpretation)
KIN	550	Clinical Appl in Biomch	Hands-on experience utilizing clinical techniques and equipment to analyze human movement for biomechanical applications. Uses the student biomechanics laboratory as a simulated clinic environment where volunteers may participate as clients for students to gain experience with clinically relevant biomechanical assessments. Additionally, requires students to showcase successful interpersonal skills to be able to work with a variety of individuals (clients, peers and supervisors) and show an ability to think critically and pay attention to details.	N	LAB	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 515; KIN 540; KIN 545
KIN	552	Appl Research Methods Biomch	Develops research skills and gains further experience working in a biomechanics research environment. Assigns a variety of projects to facilitate the student's skill development for biomechanics research such as utilizing modeling applications with related computer processes, inverse kinematics calculations and motion tracking techniques.	N	LEC	Y	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 500; EXW 501; KIN 540; KIN 545
KIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Undergraduate Postbaccalaureate student
KIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
KIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
KOR	101	First-Year Korean I	Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills, including Han'gul. Lecture, recitation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		
KOR	102	First-Year Korean II	Continuation of KOR 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): KOR 101 with C or better OR Visiting University Student
KOR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	201	Second-Year Korean I	Continual development of communication skills. Increased emphasis on reading and writing, vocabulary building, and review of fundamentals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 102 with C or better OR Visiting University Student
KOR	202	Second-Year Korean II	Continuation of KOR 201.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): KOR 201 with C or better
KOR	250	Korean Culture and Society	Surveys Korean culture and society, covering history, religious traditions, gender, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
KOR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	313	Third-Year Korean I	Continued development of ability to communicate orally and in writing. Exposure to a variety of Korean written styles.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): KOR 202 OR Visiting University Student
KOR	314	Third-Year Korean II	Continuation of KOR 313.	N	REC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Pre-requisites: KOR 313
KOR	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
KOR	347	Korean Film and Literature	Introduces aspects of Korean history, culture, and society through Korean film and literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	
KOR	350	Women of Korea	Examines the changing role and status of women in modern Korea in relation to political and cultural changes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	H	
KOR	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieu. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
KOR	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)
KOR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	401	Advanced Korean I	Offers students the opportunity to acquire advanced levels of vocabulary, reading proficiency and writing ability for an academic or professional purpose. Also helps students prepare for the TOPIK (Test of Proficiency in Korean). Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean. Students can take this course in conjunction with other Korean three-hundred level language courses upon instructor approval.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 314 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes I)
KOR	402	Advanced Korean II	Constitutes the second of two semesters of study of fourth-year Korean. Offers the opportunity to acquire advanced levels of vocabulary, reading proficiency, and writing ability for an academic or professional purpose. Course materials, ranging from literary works, scholarly articles, journalistic pieces, TV news clips, film scripts and other expository writings, encompass a variety of topics relevant to understanding Korean society and culture. Requires students to master a certain number of basic Sino-Korean characters and to use them in their essays. Throughout the course, students build vocabulary and reading proficiency toward the level expected at college in Korea. All discussions are held in Korean.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): KOR 401 with C or better; Credit is allowed for only KOR 401 or KOR 494 (Korean for Professional Purposes II)
KOR	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 491 (Asian Popular Culture) or SLC 494 (Asian Popular Culture) OR Visiting University Student
KOR	420	Emotion Acrs Lang, Ctr & Hst	Presents the main academic approaches to emotions that have been developed in the humanities and social sciences. Explores, among other topics: the different notions and constructions of emotions in various languages, societies and time periods; the cross-linguistic and cross-cultural use of metaphorical expressions of emotions; the social functions of emotions; the use of emotions in the formation of identities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 420 or SLC 420 or HEB 494/HEB 598/KOR 494/KOR 598/SLC 494/SLC 598 (Emotions Across Language, Culture, & History) OR Visiting University Student

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KOR	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student
KOR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
KOR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
KOR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
KOR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
KOR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
KOR	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
KOR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	231	Intro to Apps for Designers	Fundamentals of professional computer operation for designers including basic system usage, introduction of software packages focused on the design of sustainable environments, and utilizing computers to assist in environmental analysis and analytic decision making. Software packages include Microsoft Office, Adobe multimedia and creativity products, Esri ArcGIS geographic information systems (GIS), Autodesk AutoCAD computer aided design/drafting (CAD), and Trimble SketchUp 3D modeling software.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Landscape Architecture BS major; Corequisite(s): LDE 261 OR non-Landscape Architecture major with sophomore standing OR Visiting University Student
LAP	251	Plant Materials Sust Landscape	Plants as landscape architectural elements. Emphasizes plant identification and the uses of particular plants in landscape architecture.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Design Studies minor; ALA 102 OR Environmental Design BS major; EDS 223 OR Landscape Studies minor; ALA 102 OR Corequisite(s): Landscape Architecture BSLA major; LDE 262 OR Visiting University Student
LAP	311	History Landscape Architecture	Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU & H	Prerequisite(s): Landscape Architecture major; ALA 100 or 102; passed degree milestone review OR non-Landscape Architecture major; minimum sophomore standing OR Visiting University Student
LAP	312	20th-Century Landscape Arch	Explores concerns, projects, and movements in landscape architecture of late 20th-century understanding; social, ecological, regional, and historical influences.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	HU	Prerequisite(s): Landscape Architecture majors; ALA 100 or 102; passed the degree milestone review OR non-Landscape Architecture major; minimum junior standing OR Visiting University Student
LAP	332	GIS Application in Environ Dgn	Addresses fundamentals of geographic information systems (GIS), especially as they relate to applications by environmental planners and designers (including architects, landscape architects, urban designers and related professionals). Focuses on using GIS as tools. Explores the techniques and procedures for acquiring, displaying, editing, analyzing and modeling spatial information.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3	CS	Prerequisite(s): Landscape Architecture BSLA major; ALA 235 or LAP 231; minimum junior standing OR Visiting University Student

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LAP	341	Landscape Construction I	Landscape constructions focusing on landform transformations. Topics include landform analysis, grading, and earthwork.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Corequisite(s): LDE 361 OR Visiting University Student
LAP	342	Landscape Construction II	Characteristics of materials and methods used in landscape architectural construction.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; LAP 341 (LTC 343) with C or better; Corequisite(s): LDE 362 OR Visiting University Student
LAP	352	Ecosystems&Sustainable Design	Increases awareness and understanding of the biotic and abiotic systems, processes and factors of our biosphere in order to facilitate sustainable landscape architectural design and applications.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Environmental Design major; LAP 254 OR Landscape Studies minor; LAP 254 OR Design Studies minor; LAP 254 OR Corequisite(s): Landscape Architecture major; LDE 361 OR Visiting University Student
LAP	353	Planting Design Sust Landscape	Functional and aesthetic use of plants in arid-region landscape design. Explores design philosophies through planting design problems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; Corequisite(s): LAP 341 (LTC 343); LDE 361 OR Visiting University Student
LAP	371	Professional Practice	Landscape architecture practice including contracts, project and office management, liability, licensing, and professional development.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): Landscape Architecture BSLA major; Corequisite(s): LDE 362 OR Visiting University Student
LAP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	413	Landscape ArchTheory/Criticism	Critically analyzes landscape architecture theories and projects to evaluate validity of design and contribution to society.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3	L	Prereq(s): Lndscp Arch maj; ENG 101,105, 107 w/C; LDE 362 w/C; Coreq(s): LDE 461 OR Envirmtl Dsgn maj or Lndscp Studies min; ENG 101,105,107 w/C OR Dsgn Studies minr; ENG 101,105,107 w/C; LAP 311 (LPH310); LAP 312 (LPH311) OR Visiting University Student
LAP	443	Landscape Construction III	Landscape construction focusing on low-technology, biotechnical, regional, and experimental techniques or systems.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	The Design School	3		Prerequisite(s): Landscape Architecture BSLA major; LAP 342 (LTC 344) with C or better; Corequisite(s): LDE 462 OR Visiting University Student
LAP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): Landscape Architecture BSLA major; Pre- or corequisite(s): LDE 361
LAP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-6	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
LAP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-6		Prerequisite(s): Barrett Honors student
LAP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	The Design School	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LAP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		Prerequisite(s): Landscape Architecture BSLA major or Landscape Studies minor; minimum junior standing
LAP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	585	International Field Studies	Organized field study in specified international locations.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or LAP 585 or PUP 485 or PUP 585

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LAP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LAS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	205	Deep Roots: Latin America	Introduces the diversity of Latin-American traditions through its cultural production. The approach is interdisciplinary (art, architecture, literature, film, theater, business and anthropology). Studies the history and culture of Latin America and its concept of identity and nation through a variety of genres. Focuses on aspects that reveal the complexity of Latin America and in turn provides insights into Latin American culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
LAS	206	Locating Lat America/Methods	Methodologies course designed to provide exposure to academic fields and research approaches that intersect in Latin American studies	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	324	Lat Am Food: Pol,Econ,Clt,Soc	Uses food as a critical lens for studying Latin American culture and history and looks at how the evolution of human development, and especially the food that we eat, is influenced by social, political and economic context. Studies the production and commodification of food in Latin America, and its globalization. Also covers how Latin American cuisine sheds light on the formation of cultural identity and perceptions of nationalism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 305 (Food) or HST 324 or LAS 324 OR Visiting University Student
LAS	330	From the Inside/Lat Am Journey	Journeys through a wide variety of genres and critical scholarship in Spanish. Provides a broad exposure to different types of reading and writing. Because the Latin American Studies program is flexible, students must be able to engage with many different types of texts across disciplines. Covers Latin American cultural history from pre-Colombian to the post-modern by exploring different formats and genres around major central themes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): SPA 313 and 314 with C or better OR SPA 315 and 316 with C or better OR SPA 325 with C or better OR Visiting University Student
LAS	340	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341

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LAS	350	Construction of a Nation:Chile	Examines Chilean history, politics and cultural production through its historical development and explores a multiplicity of cultural issues. Develops knowledge and appreciation of cultural and visual production of Chile and Latin America as well as acquired skills for critically analyzing texts in their applicability to modern-day society. Considers the variety of cultural and artistic productions (novel, poetry, short story, film, music, pop culture, presidential speeches) as sources of social commentary in which observations of national identities are constructed.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; Credit is allowed for only LAS 350, ENG 494 (Construction/Nation:Chile in the 20th/21st Cen) or SPA 494 (Construction/Nation:Chile in the 20th/21st Cen)
LAS	351	Cityscapes: Urban Mexican Lit	Examines major developments in contemporary Mexican literature. Begins at mid-20th century as the novel turns away from the rural novel of the Revolution, toward a more urban setting. Mexico City serves as a cultural and political center, and the novels mark social and political changes across different literary currents.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	355	Contemporary Mexican Cinema	Examines major themes and auteurs in contemporary film as their work intersects with larger cultural phenomena, expanding students' cultural knowledge as well as critical communication skills.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	375	Colonial Latin America	Ancient civilization, exploration and conquerors, and colonial institutions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 375 or LAS 375
LAS	376	Modern Latin America	In-depth examination of the development of independent Latin American republics since 1821.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 376 or LAS 376 OR Visiting University Student
LAS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	404	Conquest:Colonial Latin Amer	How did Hernan Cortés and Francisco Pizarro defeat the Aztec and Inca Empires? Despite numeric inferiority, limited provisions, and little knowledge about the Americas, Cortés and Pizarro defeated advanced civilizations that had experienced warriors and millions of inhabitants. Possible explanations include the conquistador's valor, advanced weaponry, superior military strategy, Indian allies, and biological attacks. In their encounters with native peoples of the Americas, Europeans were not always conquerors. Álvaro Núñez Cabeza de Vaca and Lope de Aguirre failed both in their attempt to conquer a large Indian civilization and in their effort to find mineral wealth. A few Europeans such as Bartolomé de Las Casas spoke out against the abuses committed against the Indians during the conquest. Explores these issues from the perspective of both Europeans and native peoples and looks at the long-term impact for Latin America and its peoples.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 404 or LAS 404
LAS	419	20th Century Chicano/a History	Historical development of the Chicano community in the 20th century.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 419 or LAS 419
LAS	428	People/Culture:Am West to 1848	Provides an integrated understanding of change over time within and between the native, Mexican, Anglo, Asian and African American communities of the region by looking into the major formative historical forces affecting these populations individually and collectively.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 428 or ETH 428 or LAS 428 or MAS 598 (Chicano Cultures in Southwest) OR Visiting University Student
LAS	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
LAS	441	Latin America: World Economy	Globalization did not begin in the late twentieth century, but rather global trade has linked Latin America with the rest of the world for over five hundred years. The region has been an active and important participant in the world economy since Columbus's first voyage in 1492. This course explores the social, cultural, economic, and environmental impact of such participation on both Latin America and the rest of the world. It is organized both chronologically and thematically. We will study both colonial and post-colonial trade. The commodities studied include sugar, rubber, bananas, and cocaine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L & G & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only HST 441 or JHR 441 or LAS 441 OR Visiting University Student
LAS	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
LAS	450	Latina/os: Social Inequality	Advanced interdisciplinary understanding of the issues facing Chicano, Mexican American and Latino communities in relation to K-16 schooling in the southwestern United States. Examines various schools of thought that have shaped social discourse and policies, develops a critical perspective on the social and political issues affecting education, and identifies issues--both historical and contemporary--affecting Chicanos in public education.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	C	Prerequisite(s): minimum 45 hours; Credit is allowed for only AMS 450 or ETH 450 or LAS 450 or AMS 429 (Latino/a School & Social Inequity)
LAS	471	Treaties/Cultural Production	Emphasizes sociocultural values associated with national, transborder and transatlantic identities providing a panoramic view of treaties, agreements, constitutions and cultural production by Americans and Spaniards from 1812 to 2012 with particular focus on the themes of nations, borders, citizenship and identity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
LAS	480	New Media/Theatre:Lat Am/Spain	Overview of the transatlantic cultural interrelationships between Latin American and Spanish theatre and performance in the 20th and 21st centuries. Explores topics such as cyber-theatre, Internet theatre and multimedia theatre.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
LAS	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
LAS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-12		
LAS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
LAS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-6		Prerequisite(s): Barrett Honors student
LAS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
LAS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-3		
LAT	101	Elementary Latin	Basic Latin grammar with an emphasis on developing reading skills. For beginning students only.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
LAT	102	Elementary Latin	Continuation of LAT 101.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: LAT 101
LAT	140	Grk&Lat Roots Biosctfc Trmnlg	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
LAT	143	Roman Civilization	Introduces ancient Roman civilization from the earliest times (ca. 1200 BCE) through the fall of the Western Empire (CE 476) and the reign of the Byzantine Emperor Justinian (6th c. CE). Examines ancient Roman society, history, art, architecture, literature, mythology and legends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only LAT 143 or LAT 194 (Roman Civilization) or SLC 143 or SLC 194 (Roman Civilization)
LAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	201	Intermediate Latin I	Final semester of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisite(s): LAT 102 OR Visiting University Student
LAT	202	Intermediate Latin II	Beginning reading of Latin authors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	HU	Pre-requisites: LAT 201
LAT	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)
LAT	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
LAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	301	Roman Authors	Intermediate Latin reading class that introduces Roman prose authors such as Livy, Cicero and Pliny and explores the variety of genres within Latin prose, such as historical accounts, personal letters and political oratory.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better; Credit is allowed for only LAT 301 or LAT 394 (Introduction to Latin Authors)
LAT	322	Medieval Latin	Surveys Late Antique and medieval Latin authors and texts, both prose and poetry. Some review of grammar.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): LAT 201 with C or better
LAT	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
LAT	356	Rome from Village to Empire	Provides an in-depth exploration of Republican Roman literature and explores how these primary sources shaped and were shaped by ancient Rome's history and culture during its formative Republican period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 356 or LAT 394 (Rome Before the Empire) or SLC 356 or SLC 394 (Rome Before the Empire) OR Visiting University Student
LAT	357	Rome's First Emperor	Provides an in-depth exploration of Roman literature during the Augustan period, and explores how these primary sources shaped and were shaped by ancient Rome's history, literature and culture during its formative Republican period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 357 or LAT 394 (Augustus and the Creation of the Roman Empire) or SLC 357 or SLC 394 (Augustus and the Creation of the Roman Empire) OR Visiting University Student

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LAT	358	Saving the Roman Empire	In his autobiographical epitaph, the Res Gestae, Augustus, founder of the Roman Empire, claimed to have restored Rome to her former glory. His moral, social and political reforms solidified Roman control of the world and the imperial family's hold on ruling her. Through the next five hundred years, as the power of the empire waned and waxed, Augustus's successors turned time and again to reforming the empire and restoring her to her former glory - to saving the Roman Empire. In doing so they had to deal with problems both external and internal; sometimes their ideas worked, often they did not. Ultimately they failed, and Rome and the western empire fell in CE 476. Examines the rise, decline and fall of the Roman Empire from the perspective of internal and external problems the Empire faced, and asks which reforms worked, which did not work, and why. What could have been done differently? Should anything have been done differently, or was the western Roman Empire always doomed?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 294/HST 294/LAT 294/SLC 294 (Saving the Roman Empire) or LAT 358 or LAT 394/SLC 394 (Saving the Roman Empire) or SLC 358 OR Visiting University Student
LAT	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
LAT	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
LAT	363	Ancient Magic and Witchcraft	Examines magical spells, curses, amulets and other materials from ancient Greece and Rome. Students read anthropological discussions of magic worldwide to understand how ancient magic operated, what its function was within Greco-Roman society, and how it developed over the centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 363 or LAT 363 or SLC 363 or GRK 394/LAT 394/REL 394/SLC 394 (Magic and Witchcraft in Antiquity) OR Visiting University Student
LAT	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
LAT	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
LAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	421	Roman Literature	Readings in the Latin masterpieces. Authors read change each year in accordance with needs of the class. May be repeated for credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): LAT 202 OR Visiting University Student
LAT	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
LAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
LAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
LAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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LAT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	210	Intro to American Legal System	Introduces the American legal system and an overview of laws that impact business in the United States. Initially examines the questions: What is law? What is the source, nature, and scope of laws; and how is law shaped by our culture and political institutions? How is the American legal system structured and operated? The majority of substantive content examines the role of law in business.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum sophomore standing OR Visiting University Student
LAW	310	The Global Legal Community	Introduces the building blocks of the developing "global legal community," global governance institutions, both public and private, international law and transnational legal regimes. Examines how dynamic area of law is influenced by, and influences the conduct of the international and domestic relations.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: Junior or Senior standing; Credit is allowed for only LAW 310 or 394 (The Global Legal Community)
LAW	315	American Business Law	Explores the foundations of American business law. Topics covered include: the structure and processes of the U.S. legal system, a comparison of transactional law and business litigation concepts and processes, and the role of regulation in the free market. Students read law cases and other legal texts such as legislation, professional and academic legal writing.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): minimum 45 hours
LAW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	480	Business Law	Surveys business law across the spectrum from Main Street to Wall Street. Begins with a hypothetical business established by an entrepreneur in her garage, the evolution of the formation and operation of this business as a sole proprietorship, and a transition of the business to a partnership, LLC and corporation. Follows this venture through the typical legal requirements of picking a name, seeking a trademark, defining ownership, appointing officers and directors, hiring staff, navigating the fiduciary duties owed to owners of the business, protecting intellectual property, raising capital, government regulations, and ultimately the structure of a successful exit for the owners by "going public" or sale of the company. Topics included are taxation, creditors rights, technology transfer, contracts, contemporary issues and current events. Capstone course is designed to assess students' recognition of the intersection of law and business, develop critical thinking skills by use of the case method, encourage speaking and class participation and emphasize writing skills.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Business (Law) BA major; LAW 210; LES 305 or any 300- or 400-level LAW course; minimum junior standing OR Visiting University Student
LAW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	515	Contracts	Explores common law legal method and the structure of Article 2 of the U.C.C. in the context of issues of contract formation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	516	Criminal Law	Substantive law of crimes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		
LAW	517	Torts	Legal protections of personality, property, and relational interests against physical, economic, and emotional harms.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	518	Civil Procedure	Explores the structure of a lawsuit and techniques of alternative dispute resolution. Specific topics include commencement of suit, joinder of parties, discovery, pretrial motions, subject matter and personal jurisdiction, res judicata, collateral estoppel, and choice of law under the Erie doctrine.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-5		
LAW	519	Legal Method and Writing	Examines methods used to analyze legal problems. Reviews precedent statutory construction and basic res judicata problems. Use of basic legal writing formats.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	522	Constitutional Law	Role of courts in the federal system, distribution of powers between state and federal governments, and the role of procedure in litigation of constitutional questions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		
LAW	523	Property	Indicia of ownership, found property, estates in land, landlord tenant, nonpossessory interests in property, nuisance, land use planning, and transfers of interests in property.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	524	Legal Advocacy	Continuation of LAW 519.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2		

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LAW	530	Fundamentals of Contract Law	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Master of Legal Studies major; Credit is allowed for only LAW 530 or LAW 598, Fundamentals of Contract Law
LAW	581	US Law & Legal Analysis	Introduces non-JD students to the U.S. legal system and to the types of legal reasoning used by U.S. lawyers and judges. Provides the necessary instruction to use legal reasoning in work, including reading and understanding cases and statutes and applying existing law to the issue presented. Extensive written legal analysis exercises.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Prerequisite(s): Laws (Global Legal Studies) or Legal Studies or Master of Sports Law and Business student
LAW	582	Patent Drafting	Prepares students to draft patent applications on behalf of clients. Additionally, students learn the techniques and language necessary to reply to Offices Actions issued by the United States Patent and Trademark Office (USPTO). Provides significant drafting experience, requiring three separate writing submissions and revisions based on instructor feedback throughout the course. Students create work product examples that can be shared with potential employers and/or prospective clients.	N	LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student
LAW	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	585	Comprehensive Patent Practice	Prepares students for the patent prosecution process, as administered by the United States Patent and Trademark Office (USPTO). Uses a "cradle to grave" approach, beginning with the earliest steps taken when preparing to draft a patent application for a client and ending with post-decision options and activities available to those awarded with an issued patent or denied an issued patent.	N	LEL	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-5		Prerequisite(s): College of Law student
LAW	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	596	Professional Legal Writing	Teaches non-JD students how to organize a legal research project by analyzing the facts and identifying the issues involved, determining the research tools needed to correctly investigate the legal problem, and systematically using these tools to strengthen and support the desired legal argument.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: Laws (USLaw&Global Legal Pract) or Legal Studies students
LAW	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	601	Antitrust Law	Legislation and its implementation to prevent monopoly and business practices in restraint of trade, including restrictive agreements involving price-fixing, trade association activities, and resale price maintenance.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisites: College of Law student
LAW	602	Civil Procedure II	Focuses on the Rules of Civil Procedure and how lawyers use the Rules in litigating civil cases from initiation through the pre-trial stages.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		
LAW	603	Conflict of Laws	Problems arising when the operative facts of a case are connected with more than one state or nation. Choice of law, bases of jurisdiction, effect of foreign judgments, and underlying federal and constitutional issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LAW	604	Criminal Procedure	Nature of the criminal procedural system with special focus on constitutional protections for the accused.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisites: College of Law student
LAW	605	Evidence	Principles and practice governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge, and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student
LAW	606	Federal Income Taxation	Federal income tax in relation to concepts of income, property arrangement, business activity, and current tax problems, with focus on the process of tax legislation and administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisites: College of Law student

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LAW	607	Nanotechnology	Provides an overview of the legal and policy issues relating to nanotechnology, including risk management, national and international regulations, intellectual property, privacy issues, and liability issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	608	Taxation of Business Entities	Key concepts and issues in the taxation of business entities, including C corporations, S corporations, LL.C.s and partnerships. Considers the tax issues that arise when forming a business entity, how to treat income earned by the entity and distributions from the entity to its owners, and consequences of dissolving or selling business entities. Coursework includes review of specific code provisions, administrative materials and important cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 606; Credit is allowed for only LAW 608 or LAW 691 (Tax Business Entities)
LAW	609	Administrative Law	A large portion of federal law comes from administrative agencies such as the Environmental Protection Agency, the National Labor Relations Board and the Department of Defense. Examines the institutional role and legitimacy of these federal administrative agencies. Topics include the source of administrative authority; the rationale for delegation of authority to administrative agencies; constitutional constraints on agency power; the different forms of agency rulemaking; agency adjudication of facts and law; the scope and purpose of judicial review of agency action; and the degree to which administrative agencies exercise executive, legislative and judicial powers.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 609 or LAW 600 (Administrative Law)
LAW	610	Advanced Criminal Procedure	Topics in criminal procedure, with emphasis on legal constraints on grand jury investigations, police practices, pretrial release, preliminary hearings, prosecutorial discretion, and plea bargaining.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	611	Estate and Gift Tax	Tax laws relating to transfer of wealth both at death and during lifetime, including federal estate tax, gift tax, and income taxation of estates and trusts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student; LAW 606
LAW	612	Family Law	Legal and nonlegal problems that an individual may encounter because of a situation as a family member.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	613	Federal Courts	Federal judicial system; relationship of federal and state law; jurisdiction of federal courts and their relation to state courts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	614	International Contracts	Explores the laws applicable to international contractual relations, focusing heavily on the United Nations Convention on Contracts for the International Sale of Goods. One of several offerings in the field of International Business Transactions, touches on choice of law rules and a comparison of selected UCC with CISG provisions; a comparison of the contract law of selected foreign nations with the UCC; and the law of contracts in the United States. The casebook is heavily oriented toward a problem method of study.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	615	Public International Law	Role of law in international disputes. Considers drafting and interpretation of treaties and multilateral conventions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	616	Jurisprudence	Introduces legal philosophy, with readings on the nature of law and legal reasoning, the relationship between law and morality and equality and social justice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	617	Genetics and the Law	Provides background on genetics and recent genetic advances; addresses the legal consequences and issues associated with such advances.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law major or MS in Biomedical Diagnostics major. Credit is allowed for only BMD 617 or LAW 617
LAW	618	Decedent's Estates	Substantive concepts involved in transmitting wealth, including interstate succession, wills and will substitutes, the modern trust as a family protective device, creation of future interests in a planned estate, social restrictions of a nontax nature, and methods of devoting property to charitable purposes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	619	Energy Law & Policy	Examines laws relating to the ownership, consumption and conservation of energy resources, including coal, petroleum, natural gas, sunlight and wind. Explores and analyzes laws that allocate interests in energy resources and that regulate energy production and delivery strategies so as to promote economic efficiency and to mitigate adverse impacts on the natural environment.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for LAW 619 or LAW 691 (Energy Law & Policy)
LAW	620	Civil Rights Legislation	Coverage of the rights and remedies provided by federal civil rights legislation, principally, the key provisions of the Reconstruction Era Civil Rights Acts, portions of the employment discrimination legislation, and voting rights legislation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		

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LAW	621	Sales	Advanced issues involving the formation and interpretation of sales and lease contracts. Focuses primarily on Articles 2 and 2A of the Uniform Commercial Code.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	622	Secured Transactions	Secured transactions under Article 9 of the Uniform Commercial Code and other relevant sections. Overview of the creation, perfection, and priority effects of security interests. Financing of business enterprise and consumer credit.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	623	Fourteenth Amendment	Divided into three unequal parts, first explores the antebellum antecedents that are relevant to understanding the Fourteenth Amendment. In the second part, studies the early interpretations of the Fourteenth Amendment, from about 1873 to about 1955. In the third, longest part of the course, explores modern interpretations of the Fourteenth Amendment, and particularly the application of "equal protection" to race and sex discrimination; the application of "substantive due process" and fundamental rights adjudication to sexual intimacy, abortion rights and same-sex marriage; and the debate over the incorporation of the bill of rights against the states.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 623 or LAW 691 (14th Amendment)
LAW	624	Community Property	Property rights of husband and wife; the Arizona community property system; homestead.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-2		Pre-requisite: College of Law student
LAW	625	Individual Rights in Con Law	Fundamental protection for person, property, political, and social rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Prerequisite(s): College of Law student
LAW	626	Writing for Law Practice	Helps students attain an advanced level of writing proficiency by exposing them to a broad range of legal documents.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: Juris Doctor Candidate; Credit is allowed for only LAW 626 or 665
LAW	627	Corporate Taxation	Problems in taxability of the corporation, corporate distributions, and corporate reorganizations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 606 with C or better
LAW	628	First Amendment	Offers a comprehensive and in-depth examination of the rights of freedom of speech and the press secured by the First Amendment of the United States Constitution.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed only for LAW 628 or LAW 791 (First Amendment)
LAW	629	Employment Law	Employment law topics including testing, privacy, OSHA, FLSA, benefits, worker's compensation, rights to compensation, workplace emotional injuries, termination, and sexual harassment.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	630	Employment Discrimination	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	631	Environmental Law	Litigation, administrative law, and legislation relating to problems of environmental quality. Topics covered may include air and water pollution, toxic substances, pesticides, and radiation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	632	Federal Indian Law I	Inquiry into legal problems special to American Indians and tribes.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	633	Law, Litigation, and Science	Fills a gap in the education of most lawyers, namely, how to effectively think about and use empirical evidence.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	634	Election Law	Explores the law governing politics and elections in the United States. Examines a variety of topics, including: the Constitution and its protection of the right to vote; reapportionment; the Voting Rights Act; gerrymandering; the constitutional rights of political parties; campaign finance regulation; and election administration (e.g., the use of electronic voting equipment, provisional and early voting). Also considers the relationship between these topics and partisanship.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 634 or LAW 691 (Election Law)
LAW	635	Juvenile Law	Special problems in the juvenile system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	636	Land Use Regulation	Legal problems in the regulation and control of land development by state and local governments. Administration of zoning, subdivision, and other planning controls; issues of fairness and procedure in the utilization of such controls.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	637	The Litigation Experience	Offers the opportunity to serve as trial lawyers in a simulated case. Using a "learning by doing" format, students take a hypothetical civil or criminal lawsuit from the pleading stage through discovery, pretrial motion practice, ADR and trial.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; Pre- or corequisite(s): LAW 605
LAW	638	Professional Responsibility	Emphasizes the Model Rules and Model Code that govern the professional responsibility of lawyers and their interpretation and application.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student

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LAW	639	Natural Resource Law	Examines the constitutional basis for federal land management and the different kinds of public lands management schemes (e.g., parks, forests, wildlife refuges), emphasizing acquisition of right to, and regulation of, the different uses of public lands and resources (e.g., mining, grazing, timber, wildlife habitat, recreation).	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	640	Securities Regulation	Selected problems arising under the major statutes concerned with regulating the securities market.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; LAW 654
LAW	642	White Collar Crime	Examines the ways in which white collar crime is prosecuted, principally in the federal system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	643	Water Law	Acquisition of water rights; water use controls; interstate conflicts.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	644	Trademark Law	In-depth examination of substantive trademark and unfair competition law with focus on both policy and practical considerations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 644 or LAW 691 (Trademark and Unfair Competition Law)
LAW	645	Patent Law	In-depth examination of substantive patent law as it applies to the commercialization and enforcement of patent rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	646	Copyright Law	Legal rights in original forms of human expression.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3		Pre-requisite: College of Law student
LAW	647	Mass Tort Litigation	Examines unique procedural and substantive issues that arise in mass tort litigation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	649	Scientific Evidence	Examines the use of scientists and scientific tests or studies in criminal and civil litigation.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	650	Health Law	Introduces health law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	651	Public Health Law	Addresses the relationship between the state and the population's health.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	652	Bioethics and the Law	Covers a range of issues relating primarily to human reproduction and life and death decisions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	653	Bankruptcy	Covers basic bankruptcy law and practices.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	654	Business Organizations	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies, and corporations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	3-4		Pre-requisite: College of Law student
LAW	655	Chapter 11	Covers the law and practice of reorganizing business entities under Chapter 11 of the United States Bankruptcy Code.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisite: College of Law student
LAW	656	Value Real Est/Close-Held Bus	Focuses on the valuation of interests in real property and closely-held businesses.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	657	Private Property Rights	Explores the conflict between property rights and the right of the government to acquire private property for public use.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	658	Arizona Constitutional Law	Examines the basic provisions of the Arizona Constitution and the judicial decisions interpreting those provisions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student
LAW	660	Advanced Estate Planning	Covers advanced estate planning and estate administration issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	662	ADR and Employment Law	The use of alternative dispute resolution has been most extensive in the area of employment law. Mediation and arbitration are widely used not only in the collective bargaining setting, but also in virtually every aspect of the employment relationship. Offers a comprehensive review of the subject with special emphasis on the extensive body of law that has developed in regulating employer-imposed arbitration. Discussion of mediation includes use of simulations to enable the students to understand how mediation can effectively resolve employment disputes. Opportunities to observe real mediations of employment disputes. Experienced attorneys discuss the "real world" use of employment ADR from a plaintiff's and a defendant's perspective.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	664	Intellectual Property	Surveys the laws conventionally grouped as intellectual property, with a focus on patents, copyrights, and trademarks. Explores the policy rationales for each body of law. Particularly relevant for two types of students: (a) those who are unsure they want to specialize in IP and want a general introduction, and (b) those who do not have room in the schedules to take all of the upper-level offerings here at ASU. Not appropriate for students who have already taken the upper-level courses in copyright, trademark, and patents; students who have taken these offerings may be withdrawn.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		

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LAW	666	Corporate Governance	Explores current issues in the corporate governance of publicly traded business corporations under both state and federal law. Also addresses the ethical dilemmas with respect to governance issues that lawyers face when advising corporate clients.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; LAW 654; Credit is allowed for only LAW 666 or LAW 691 (Corp Governance)
LAW	667	FDA Regulation	Examines the regulation of drugs, medical devices, and biologics (e.g. vaccines) by the Food and Drug Administration.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): degree- or nondegree-seeking graduate
LAW	668	Trade Secrets	Considers the law of trade secrets, focusing on the principles set forth in the Uniform Trade Secrets Act, the Restatement of Torts, the Restatement (Third) of Unfair Competition, and the Defend Trade Secrets Act. The second portion of the class focuses on the law of restrictive covenants, with an emphasis on Arizona case law and principles. Students learn principles of drafting effective restrictive covenants, non-disclosure and confidentiality agreements, as well as an overview of litigation strategies and techniques.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 668 or LAW 691 (Trade Secrets and Restrictive Covenants)
LAW	669	Bar Exam Prep	This two-credit course prepares students to take (and pass) the bar exam. The principal focuses of this course are: (1) writing and analysis for bar exam essays, (2) the MBE (multiple choice section of the bar exam), and (3) the MPT (Multi-state Performance Test) as they pertain to the Arizona bar exam. Although this course primarily focuses on the Arizona bar exam, the skills and strategies learned are applicable for any state's bar exam.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 669 or LAW 791 (Bar Prep)
LAW	670	Pro Sport Team Ops/Legal Issue	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 670 or LAW 691 (Business Operations for Team Sports) or SLB 519
LAW	671	Sports Venue Construction	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 671 or SLB 520
LAW	672	MLB's Impact on Law/Society	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 672 or SLB 523
LAW	673	Risk Management for Venues	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 673 or SLB 521
LAW	674	NCAA Compliance, Infractions	Provides a real-world view of a Division I Power 5 Conference Compliance Office and the manner in which such an office directs its institution's efforts to maintain compliance with National Collegiate Athletic Association and member conference legislation governing intercollegiate athletics.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 674 or LAW 791 (Infractions/Compliance - Intercollegiate Athletics) or SLB 522 or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
LAW	675	Professional Sports Law	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
LAW	676	Amateur Sports Law	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)

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LAW	677	Law of Sports Branding	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 677 or SLB 524
LAW	681	Construction Law	The construction of an actual project serves as the "laboratory" for the course. Many of the problems presented in class each week are based on "real time" events occurring on that project and the class visits the actual construction site during one of the classes. Focuses on practical construction law issues taught by an experienced practicing lawyer. Topics include: types of construction contracts; the basic relationships among the owners, architects/engineers, general contractors, subcontractors and material suppliers on a project; express and implied warranties; the role of the schedule and claims related to scheduling; change orders and concealed site condition claims; the Economic Loss Doctrine; mechanics' liens, stop notices and other payment remedies; proving damages; and the trial of a construction case and the use of expert witnesses. Expects extensive student participation during class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 681 or LAW 691 (Construction Law)
LAW	682	Persuasive Speech	This performance-based course focuses on persuasive communication skills. Borrowing proficiencies typically developed for the theatre and applying them in a legal context, students gain increased confidence in communicating and advocating in the courtroom or ADR setting by developing such skills as: pacing, use of gestures, voice projection, voice modulation, and body positioning. Students are on their feet speaking to an audience (the class) each day of class.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Juris Doctor of Law student; Credit is allowed for only LAW 682 or LAW 791 (Persuasive Speech)
LAW	685	Separation of Powers	Studies the separation of powers in our federal government by examining the impact of key historical events on constitutional law. Topics include the election of 1800, the Civil War, the Great Depression and World War II, presidential impeachments, and the war on terror.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 685 or LAW 691 (Separation of Powers)
LAW	686	Victims in Criminal Procedure	Considers the emerging field of crime victims' rights and the tensions victims' rights create with traditional prosecution and defense interests.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 686 or LAW 791 (Victims in Criminal Proceed)
LAW	687	Civil Pretrial Practice	Identifies the skills needed for civil pretrial practice and to appreciate what is involved in developing and applying these skills. In addition to discussion of the rules and their application, class focuses on custom and practice with the goal of preparing students for the practice of law in Arizona. There is insufficient time in this class, or frankly any class, to develop the skills to a point where students can feel comfortable that they have sufficient expertise to competently apply these skills. However, by participating in class activities that involve implementing these skills in the context of a specific case, students should leave with sufficient understanding of these skills that they can move quickly into and through the learning process that comes with practice experience.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 687 or LAW 691 (Civil Pretrial Practice)
LAW	688	Jury Selection	Provides a firm foundation for selecting juries in both civil and criminal cases.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 688 or LAW 791 (Jury Selection)
LAW	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	701	Arbitration	Examines the Federal Arbitration Act and the Uniform Arbitration Act as it has been adopted in Arizona.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	702	Alternative Dispute Resolution	Broad exposure to methods of settling disputes in our society such as mediation, arbitration/conciliation, and negotiation, including examination of the current litigation model.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student

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LAW	703	Law, Science, and Technology	Legal mechanisms used in dealing with various issues raised by contemporary science and technology. Explores current legal responses to science and technology.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	704	Federal Indian Law II	Surveys the federal legal doctrines surrounding Indian ownership and exploration of resources.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	705	Media Law	Examines First Amendment principles and statutory and regulatory requirements with respect to the conventional print and broadcast media, as well as recent technologies such as cable.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	706	Immigration Law	Explores political, economic, social, and legal issues concerning immigration. Specific topics covered include citizenship and naturalization, denaturalization, deportation, and refugee rights and asylum.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	707	Elder Law	Looks at legal and policy questions related to aging individuals and an older society.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	709	International Human Rights	International rules and procedures governing the protection of human rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	713	Tribal Law and Government	Analyzes particular problems in tribal law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	714	Biotechnology	Examines the legal, regulatory, scientific, policy and ethical aspects of biotechnology, focusing on genetically engineered plants, animals, foods, drugs, vaccines and other products. Covers issues such as regulation, labeling, liability issues, intellectual property issues, antitrust, the role of the public in biotechnology decisions, international regulation, international trade, bioprospecting/biopiracy, xenotransplantation, animal cloning, synthetic biology, and bioterrorism.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 714 or LAW 691 (Biotechnology)
LAW	715	Sports Law	Unique legal problems relating to professional sports, including their relationship to antitrust laws, the nature of player contracts, and associated tax problems.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	716	Contract Drafting	Provides the opportunity to learn the basic principles of contract drafting, interpretation and negotiation, including drafting contracts that: (1) effectuate the clients' needs; (2) anticipate, and hopefully avoid, potential legal disputes; and (3) are written in plain language. Students represent a particular client throughout the course, and are required to work independently and collaboratively to draft a series of written contracts on behalf of the client. Students also learn about the role of transactional lawyers, ethical considerations, and effective client communications.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Juris Doctor of Law student; LAW 515; Credit is allowed for only LAW 716 or LAW 691 (Contract Drafting)
LAW	717	Reproduction and the Law	When it comes to the creation of human life, yesterday's science fiction has become today's reality. Stories about baby sellers, egg freezing, runaway surrogate mothers, genetic enhancement and ootomoms have exposed the lack of meaningful legal regulation of assisted reproductive technologies and have spurred calls for reform. But the extent to which the State should regulate who can reproduce and under what circumstances raises a host of difficult questions. This course searches for answers to those questions by considering the role the Constitution, tort, contract, property and criminal law have traditionally played in advancing the State's interest in reproduction and discussing how those doctrines should adapt to new technologies and family configurations. Topics covered include abortion, gamete donation, In Vitro Fertilization, surrogacy, genetic screening and enhancement, eugenics, medical ethics, and alternative family formation.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 717 or LAW 791 (Reproduction and the Law)
LAW	718	Econ Dev in Indian Country	Focuses on the unique legal, economic, and political issues confronting tribal governments in developing diversified reservation economies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: Law major; Credit is allowed for only LAW 718 or PUP 718
LAW	719	Intl Indigenous Rights	Examines the developments in recognizing indigenous rights in people's systems of international law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	720	Indian Gaming Law	Surveys the law surrounding the Indian gaming industry.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	721	Education and the Law	Current legal problems affecting institutions of higher education, faculty, students, and governing boards.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	723	Cultural Resources Law	Focuses on the protection of Native American cultural resources and religions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	724	Privacy	Traces the development of privacy law with special attention to contemporary challenges.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		

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LAW	725	Critical Race Theory	Focuses on the idea of "race" as a social/political construct and examines the impact of American law on the construction of race. Provide historical and legal background necessary to understand the significance of race within American law and policy. Evaluate a number of legal frameworks that address issues of race and ethnicity in various contexts (e.g. segregation laws, civil rights law, federal Indian law, international human rights law). Assesses various jurisprudential accounts evaluating the ethical and moral underpinnings of the law. Critical race theory is known as a jurisprudential framework that is often critical of standard liberal approaches. Evaluates the critiques of liberalism and the scholarship of both liberal and critical theorists.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	726	Indian Legal Research	Teaches students how to research Federal Indian law and tribal law issues. In addition to providing instruction about how to use particular research tools and sources, this course teaches students how to analyze research problems and how and why to use particular types of sources in their legal analysis.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 726 or LAW 691 (Indian Legal Research)
LAW	727	Int'l Legal Research	Teaches students how to research international and foreign law. As a course project, students prepare a bibliography on an international law topic of their choice.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 727 or LAW 691 (Research & International Law)
LAW	728	The State Attorneys General	The legal jurisdiction of attorneys general varies significantly from state to state. Course represents the instructor's best judgment as to how to teach in a way that gets to the realities of the operations of attorneys general.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 728 or LAW 691 (The State Attorneys General)
LAW	730	Appellate Advocacy	Covers the conventions of appellate practice while further developing analytical, drafting and oral communication skills. Tasks students both with drafting an appellate brief and with presenting a formal appellate oral argument.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Juris Doctor, JD student; Credit is allowed for only LAW 730 or LAW 691 (Appellate Advocacy)
LAW	731	High-Tech Licensing	Dedicated to learning the law, skills and strategies for licensing intellectual property rights relating to technology. Familiarizes students with licensing parties' objectives, intellectual property rights to be licensed, and writing contracts to achieve the client's goals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 731 or LAW 791 (High Tech Licensing)
LAW	732	Patent Prep and Prosecution	Dedicated to learning the mechanics and strategies for preparing, filing and prosecuting patent applications. Familiarize students with guiding an invention from conception to patent, both domestically and abroad. Considers strategies of patent drafting to provide broad patent scope and enforceable patent claims. Knowledge of intellectual property or patent law recommended prior to taking this course.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Credit is allowed for only LAW 732 or LAW 691 (Patent Preparation)
LAW	733	Negotiation	Explores alternative models of negotiated dispute resolution, as well as the roles of lawyer and client in the negotiation process. Extensive use of simulation exercises.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	734	Products Liability	Traces the development of products liability law; analyzes the major issues currently confronting the courts in this area.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		Pre-requisite: College of Law student
LAW	735	Teaching Assistant	Legal writing teaching assistants assist a writing professor with various tasks throughout the semester.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		
LAW	736	Adv Legal Research Seminar	Focuses on a rigorous review of basic print and electronic resources and strategies for conducting legal research, federal/state.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	737	Cults & Alternative Religions	Provides opportunity to study laws and policies governing cults. While the definition of a "cult" will be a topic of initial study in the seminar, it may be conceived of loosely as a group with a charismatic leader whose members are persuaded to relinquish their self-identities and material possessions in furtherance of the group's goals. In addition to analyzing the definition of a cult, the first part of the seminar discusses the various types of cults, studying particular cults, and learning about cultic activities. The remainder covers domestic and foreign legal and policy issues generated by cults, including the legal rights of cultic organizations, anti-cult organizations, cult members, and cult members' families. Covers conventional religions that are conceptually similar to cults, to the degree that religious movements fall outside the mainstream.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		
LAW	738	Trial Advocacy	Confronts issues of trial advocacy through simulation of a variety of aspects of trial practice in a mock court setting.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 605

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LAW	745	The Supreme Court	Intensive examination of selected current decisions of the U.S. Supreme Court.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-3		
LAW	751	Death Penalty	Surveys the major constitutional and operational issues relating to the death penalty in the United States.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 751 or LAW 691 (Death Penalty)
LAW	768	Intl Business Transactions	Introduction to U.S., foreign, and international law regulating cross-border business transactions and to the structure of cross-border business deals.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Pre-requisites: LAW 515 and 654
LAW	770	Law Journal	Academic credit for successful completion of editorial work by a member of the staff of Arizona State Law Journal.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	771	Jurimetrics Journal	Academic credit for successful completion of editorial work by a member of the staff of the Jurimetrics Journal of Law, Science, and Technology.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	772	Defender Clinic	Placement in the Public Defender Clinic and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	773	Civil Litigation Clinic	Student attorneys in the Civil Litigation Clinic are certified by the Arizona Supreme Court to represent people who do not have adequate resources to hire an attorney in cases such as consumer fraud, employment discrimination and wage claims, benefits eligibility for people with disabilities, and tenant's rights. Student attorneys are involved in all aspects of civil and administrative practice including interviewing and counseling clients, fact investigation, drafting pleadings, motions and appellate briefs, conducting discovery such as taking depositions and propounding interrogatories, and representing clients in trials, arbitrations and mediation. Student attorneys may also present oral argument in appellate courts.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student
LAW	774	Prosecution Clinic	Placement with various prosecutor offices in the Phoenix area and related classroom component.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; LAW 605
LAW	775	Mediation Clinic	Study of the mediation process and experience as mediators in cases pending before the justice courts and administrative agencies.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	776	Indian Legal Clinic	Provides law students the opportunity to participate in cases dealing with native peoples and Indian issues.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		
LAW	777	Innovation Advancement Clinic	Allows students to gain real-world experience in legal areas such as patentability of inventions, patent drafting, and technology valuation.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	778	Immigration Clinic	The Immigration Clinic collaborates with local nonprofits, governmental agencies and community advocates to identify foster children in need of immigration services. The clinic also provides legal advice and referral at events organized by community agencies, nonprofits and elected officials.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Pre-requisite: College of Law student
LAW	779	Patent Law Clinic	Trains students to perform the legal skills necessary to practice transactional patent and trademark law.	N	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student; Credit is allowed for only LAW 779 or LAW 791 (Patent Litigation Clinic)
LAW	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	781	Independent Study	With the approval of a faculty member, a student may research a legal subject of special interest and prepare a paper suitable for publication.	Y	IND	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Pre-requisite: College of Law student
LAW	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Pre-requisite: College of Law student
LAW	785	Externship	Supervised, practical lawyering in an external placement proposed by the student or established by a sponsoring agency and approved by the Sandra Day O'Connor College of Law. In addition, an associated academic component is established by the student with a member of the faculty.	Y	PRA	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		

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LAW	786	Post-Conviction Clinic	Investigates claims of wrongful conviction and manifest injustice from prisoners convicted of crimes in Arizona. Post-conviction work is a specialized practice area that delves into both fundamental and nuanced aspects of criminal law and criminal procedure—one that is becoming increasingly vital as over 400 prisoners nationwide have been exonerated either in full or in part by DNA testing, and over 1,500 people have been exonerated by other means. Arizona is home to more than 40,000 prisoners and more than 5,000 on community supervision. Arizona incarcerates more people per capita than any other state in the west and ranks sixth in the country. The clinic works in conjunction with the Arizona Justice Project and some of the case profiles.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-6		Prerequisite(s): College of Law student; Pre- or corequisite(s): LAW 516; LAW 518; LAW 605; LAW 638; Credit is allowed for only LAW 786 or LAW 791 (Post Conviction Clinic)
LAW	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
LAW	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-15		Prerequisite(s): College of Law student
LAW	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		
LAW	797	Visiting Student Program	-	N	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	0-1		Prerequisite(s): College of Law student
LDE	261	Landscape Arch Design Fund III	Applies design fundamentals with an emphasis on landscape architectural issues.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture BSLA major; passed milestone; ALA 122 with C or better; Corequisite(s): ALA 235 or LAP 231 OR Visiting University Student
LDE	262	Landscape Arch Design Fund IV	Applies design fundamentals to landscape architectural design with emphasis given to human factors.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	The Design School	4		Prerequisite(s): Landscape Architecture major; LDE 261 with C or better
LDE	361	Landscape Architecture I	Site planning: analysis of natural and cultural features; site systems and implications for plan making and design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 262 with C or better; Corequisite(s): LAP 352; LDE 363; LTC 343 OR Visiting University Student
LDE	362	Landscape Architecture II	Site design: site-specific design of configured space by the creative development of form.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture BSLA major; LDE 361 with C or better; Corequisite(s): LAP 352 OR Visiting University Student
LDE	461	Landscape Architecture III	Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 362 with C or better; Corequisite(s): LPH 411 OR Visiting University Student
LDE	462	Landscape Arch IV	Advanced landscape architecture: integrative capstone studio with multifaceted design problems.	N	STO	N	OPT	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Landscape Architecture major; LDE 461 with C or better; Corequisite(s): LTC 446
LDE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LDE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LDE	521	Adv Landscape Arch Studio I	Explores landscape architecture and design with emphasis on the urban landscape and the significance ecology plays in the design process. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Master of Landscape Architecture student; Credit is allowed for only LDE 521 or LDE 590 (Advanced Landscape Architecture Studio I) or LDE 590 (Applied Landscape Architecture)
LDE	522	Adv Landscape Arch Studio II	Explores landscape architecture and design with emphasis on urban landscapes and human health. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 521 with C or better; Credit is allowed for only LDE 522 or LDE 590 (Advanced Landscape Architecture Studio II) or LDE 590 (Advanced Landscape Studio II)

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LDE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	621	Adv Landscape Arch Studio III	Structured around the Design School's "traveling studio" model and provides an opportunity for graduate-level students to refine their talents while also contributing to a better future. Challenges students to work in a multidisciplinary environment to identify new design concepts that improve society and the natural environment. For approximately one week during the semester, students travel to an off-campus location (either in the U.S. or abroad) to examine a local condition there for which new design solutions are needed. Students return to ASU and continue working on the project for the semester. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 522 with C or better; Credit is allowed for only LDE 621 or LDE 690 (Advanced Landscape Architecture Studio III)
LDE	622	Adv Landscape Arch Studio IV	Capstone course. Students complete a design project that demonstrates mastery of landscape architecture skills and knowledge. Requires some independent direction. The instructor determines deadlines and expectations for deliverables. Requires cooperation and collaboration between students. Design performance is the themed topic and focus. Students develop a complex design project that addresses a significant professional issue. The project explores and demonstrates how advanced design resolves that issue in a performative manner using evidence-based practices and performance-based metrics. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): LDE 621 with C or better; Credit is allowed for only LDE 622 or LDE 593 (Advanced Landscape Architectural Studio IV)
LDE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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LDE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LDE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	305	Business Law&Ethics for Mgrs	Legal theories, ethical issues, and regulatory climate affecting business policies and decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey student OR non-business student; minimum 2.50 GPA; minimum 56 hours OR non-degree student; minimum 2.50 GPA OR graduate student OR Visiting University Student
LES	380	Consumer Perspective Bus Law	Role of law as it affects society. Uses case studies to present principles that govern business and consumers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): minimum 2.00 GPA ; minimum 56 hours, OR non-degree student with minimum 2.0 GPA, OR graduate student OR Visiting University Student
LES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Pre-requisites: Minimum 2.00 GPA; Minimum 56 hours OR Non-degree seeking student
LES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
LES	582	Ethical Issues for Managers	Studies ethical decisions; the role of business in society.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5-3		Prerequisite(s): W. P. Carey MBA student
LES	586	Fund Ethical Issues Managers	Studies ethical decisions, the role of business in society. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
LIA	101	Student Success in The College	Introduces students to resources that help them succeed in The College of Liberal Arts and Sciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1		Credit is allowed for only LIA 101 or LIA 194 (Introduction to Liberal Arts and Sciences)
LIA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-12		
LIA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Dean, The College of Liberal Arts and Sciences	1-4		
LIN	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	501	Approaches to Research	Theories, methods and/or methodologies as well as qualitative and/or quantitative approaches to the specific discipline. Also serves as an introduction to the profession.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 501 or LIN 501
LIN	510	Linguistics	Overview of linguistics, its subfields, and some of its applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BLE 537 or LIN 510

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
LIN	511	Phonetics and Phonology	Current trends in phonological theory and its basis in acoustic and articulatory phonetics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	513	Semantics	Current approaches to linguistic meaning with particular attention to English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	514	Syntax	Analyzes syntactic structures using a generative theoretical model with a focus on English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	515	American English	Development of the English language in America, including regional and social varieties, and its relationship to other immigrant and native languages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	516	Pragmatics/Discourse Analysis	Studies language use in context and language structures in spoken and written texts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	517	History of English Language	Surveys the development of the English language, with an emphasis on major linguistic transformations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 413 or ENG 517 or LIN 517
LIN	520	Second-Lang Acquisition Theory	Theories of second-language acquisition, including the linguistic, cognitive, and sociocultural aspects.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	521	Mthds Teaching Engl as Sec Lang	Methods of teaching English as a second language, language teaching trends, practical applications, and the teaching of different skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	522	Grammar for TESL	Surveys major grammatical structures in English and how they can be taught to ESL speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	523	Language Testing and Assessmnt	Introduces the theory and practice of language test construction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	524	Curriculum Design/Material Dev	Practical guide to curriculum and materials development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	525	Teaching L2 Writing	Provides a critical introduction to the field of second language writing as well as issues and strategies in the teaching of second language writing in a wide variety of contexts. After exploring various instructional contexts as well as the characteristics of different types of students and their texts, considers various instructional practices and strategies, focusing on course and assignment designs, reading-writing connection, teacher and peer feedback, grammar instruction, classroom assessment, plagiarism and text borrowing strategies, and negotiating language differences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only LIN 525, 591 (Teaching 2nd Language Writing) or ENG 525
LIN	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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LIN	597	MTESOL Capstone	Provides MTESOL students with a culminating experience in which they bring together the knowledge learned in prior courses in the program in a way that is meaningful and relevant to their professional goals. Focuses on projects that the students carry out to demonstrate their ability to apply scholarly and professional knowledge in TESOL practice. Provides opportunities to engage in some professional activities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): Teaching English to Speakers of Other Languages MTESOL student; Credit is allowed for only ENG 597 or LIN 597
LIN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	610	Advanced Studies Linguistics	Different topics such as morphology, semantics, typology, history of linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	614	Advanced Studies in Syntax	Focuses on morphosyntactic feature checking, movement, phrase structure, and their crosslinguistic differences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	615	Adv Studies Sociolinguistics	Language in its social setting, e.g., social variation among native speakers, sociolinguistics aspects of second-language acquisition, and language policy.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	616	Adv Studies Discourse Analysis	Advanced analysis of spoken and written discourse emphasizing different methodological and theoretical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	617	Adv Stdy Historical Linguistic	Overview of theories on language change, the history of languages, and of methods in historical linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	620	Adv Stdy Second-Lang Acquistn	Selected topics in second-language acquisition, such as phonetics and phonology, morphology, syntax, and discourse.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	625	Adv Studies in L2 Writing	Provides opportunities to explore advanced research topics as well as current issues and controversies in the field of second language writing--an interdisciplinary field of inquiry simultaneously situated in applied linguistics, rhetoric and composition, and teachers of English to Speakers of Other Languages.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only ENG or LIN 625
LIN	655	Adv Disciplinary Discourses	Advanced investigation of professional and disciplinary issues related to linguistics and applied linguistics.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of English	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LIN	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of English	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		

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LPH	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-3		
LPH	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LPH	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	322	Fundamentals of Ecology Lab	Investigational field course on fundamental concepts in ecology.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 320 or BIO 320 with C or better if completed OR Visiting University Student
LSC	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
LSC	347	Fundamentals of Genetics	Science of genetics, gene flow, and genetic engineering in humans and other organisms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 or 188 with C or better; BIO 182 or 187 with C or better; CHM 116 with C or better OR Visiting University Student
LSC	348	Fundamentals of Genetics Lab	Investigational activities using modern molecular techniques to analyze various genetic phenomena.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 347 with C or better if completed OR Visiting University Student
LSC	359	Animal Physiology Laboratory	Investigative lab experience using animals (including humans) and models.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): LSC 358 or BIO 360 with C or better if completed
LSC	362	The Human Environment	Evolution of humans' physiological, ecological, and behavioral interaction with their environment.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better OR Visiting University Student
LSC	363	Genes, Race, Gender & Society	Examines biological events and theories on race and gender and their interface with societal views.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): BIO 340 or LSC 347 with C or better; ENG 101, 105, or 107 with C or better OR Visiting University Student
LSC	365	The Human Organism	Analyzes human anatomy, physiology, and behavior in an ecological and evolutionary context with the methods of comparative biology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4	SG	
LSC	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
LSC	380	Non-Human Forensic DNA Evid	Nonhuman biological materials are so pervasive in the environment that they often contaminate victims, perpetrators and crime scenes by means of direct deposit or secondary transfer. As the reliability, sensitivity and specificity of animal, plant and microbial DNA assays improve with the advent of new technologies, the potential probative value of DNA information from nonhuman biomaterials also increases, especially for establishing or refuting alibis, determining the chronology of a criminal event and for crime scene reconstruction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): LSC 347 with C or better if completed; Credit is allowed for only FOR 380 or LSC 380 OR Visiting University Student
LSC	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
LSC	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student

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LSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	425	Analytical Chemistry-Life Sci	Presents an analysis of chemicals, including the theoretical and practical considerations regarding the separation, detection and quantitative determination of chemicals. Illustrates the application of different analytical procedures using some of the common chemicals of concern in the forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Credit is allowed for only FOR 425 or LSC 425 OR Visiting University Student
LSC	426	Analytical Chemistry Lab	Students learn basic principles of analytical chemistry and explore a wide range of common techniques and methods with applications to forensic science and life sciences. Places specific focus on techniques common in modern analytical laboratories, including gas chromatography, mass spectrometry, FTIR and NMR spectroscopic techniques. Other topics include interpretation of analytical data and evaluation of error and uncertainty in measurements.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	2		Prerequisite(s): CHM 234 with C or better; CHM 238 with C or better; Corequisite(s): FOR 425 or LSC 425; Credit is allowed for only FOR 426 or LSC 426 OR Visiting University Student
LSC	430	Environmental/Human Toxicology	Lecture/fieldwork course investigating toxic substances in the environment and their effect on the health of organisms, including humans.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	4		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; CHM 116 with C or better
LSC	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347 with C or better; BIO 353 with C or better; CHM 231 or 234 with C or better; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student
LSC	434	Marine Ecology	Examines ecological processes in oceans, seas, and estuaries that emphasizes species- and community-level phenomena.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; LSC 320 or BIO 320 with C or better; Credit is allowed for only BIO 438 or BIO 494 (Marine Biology) or LSC 434 OR Visiting University Student
LSC	447	Molecular Genetics Laboratory	Investigative lab involving DNA isolation, PCR, gel electrophoresis, enzyme digestion and ligation, transformation, and hybridization analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 447 or LSC 447
LSC	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
LSC	480	Adv Topics Hum For DNA Typing	Examines the science of current forensic DNA typing methods by focusing on the technology behind STR, Y-STR and mtDNA typing, real-time PCR, serology tests, capillary electrophoresis, expert systems and statistics.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): LSC 347 with C or better; Credit is allowed for only FOR 480 or LSC 480 OR Visiting University Student
LSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
LSC	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
LSC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student
LSC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
LSC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	IND	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better

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LSC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
LSC	519	Applied Learning Lab	Workshop-style course where students develop and peer review graduate-level project proposals. Topics may include integrative writing skills for an interdisciplinary thesis, presentation skills and topics tailored to the appropriate lay or technical audience, writing for a wide range of journals.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	547	Wet Laboratory Experience	Balances the need for bench work and in silico experience for students interested in pursuing a career with learning important statistical and computational tools to analyze biological data. Under the direct supervision of the PI and/or Laboratory Manager, students receive instruction and perform all experiments as specified in the performance objectives for the course.	N	LAB	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	555	Integrative Biology I	Provides a comprehensive understanding of the human genome, recent developments, next generation sequencing techniques including the preparation of DNA samples as well as principles of the new generation sequencing assay formats. Describes, critically evaluates and applies theoretical perspectives within genetic/genomic studies, develops and uses computational and mathematical tools and of the invaluable lines of inquiry these biomedical investigations may portend.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	556	Integrative Biology II	Provides a survey of fundamental issues in organismal biology. Covers biological diversity, relationships between form and function, processes of growth and development in individuals and populations, biomes and organism-environment relationships, populations and ecosystem function. Weaves components of previous course work throughout this course where possible.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	562	Applied Math Tech in Biology	Population dynamics, molecular interactions, population genetics, and other biological applications motivate the discrete and continuous mathematics. Studies mathematical techniques and applications representative of a range of applied mathematics topics. Incorporates computer software to help with visualization and numerical solutions of some of the problems.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	565	Lab Leadership, Policy & Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
LSC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LAB	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LAB	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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LSE	303	Human Dev Learner Capabilities	Surveys major themes and recent findings in the area of human development across the lifespan, with emphasis on the physical, cognitive, social and emotional domains. Examines the impact of ethnic, gender and cultural factors on development. Applies theories of human development to various educational environments and learning activities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	305	Conceptualizing Learning	Explores a variety of learning theories. Covers the role of the educator, the role of the student, and how tools and systems can help facilitate teaching and learning opportunities. Students design learning experiences for a specific need or opportunity using current research-based learning theories.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
LSE	401	Designing LrnEnv for Inclusion	Analyzes current education systems for their ability to meet the needs of diverse populations. Designs sustainable solutions to promote inclusivity in learning environments. Applies current research-based learning theories through a design process. Students advocate for education that changes communities and lives by developing educational solutions that address social concerns.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	SB	Prerequisite(s): minimum 45 hours
LSE	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	540	Theoretical Views Lrng in LS	Theoretical perspectives that inform learning scientists. Examines affordances and limitations of theories for designing productive learning environments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EDP 540 or LSE 540
LSE	542	Research Methods Learning Sci	Develops a strong methodological toolkit for building, testing and advancing learning theory through innovations that achieve meaningful impact. The field of the learning sciences is interdisciplinary, drawing on multiple theoretical perspectives and research paradigms to build understandings of the nature and conditions of learning, cognition and development.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	570	Case Exemplars Learning Systms	Examines in-depth cases of learning systems in order to examine different ways of explaining learning, knowing and teaching and attendant strategies for generating data about these systems.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	571	History of Learning Sciences	Examines the history of the interdisciplinary field of the learning sciences in relation to the various disciplinary traditions from which it derives.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		

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LSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		
LSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
LSE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		

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LSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
LSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
LST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	370	Dimensions of Liberal Studies	Draws on the humanities and social sciences to engage diverse ideas and perspectives, develop resilient and productive habits of mind, and investigate the different dimensions of human meaning-making.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L or HU	Prerequisite(s): Liberal Studies BA major; ENG 102, 105, or 108 with C or better; minimum sophomore standing OR Visiting University Student
LST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	470	Liberal Studies Seminar	Applies creativity, reflection and diverse modes of inquiry from the humanities and social sciences to at least one topic/theme.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Liberal Studies BA major; ENG 102, 105, or 108 with C or better; LST 370 (BIS 370) with C or better; minimum senior standing OR Visiting University Student
LST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
LST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		
LST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
LST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
LST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
LST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
LTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
LTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAE	201	Mech. Particles/Rigid Bodies I	Force vectors and force system resultants, equilibrium of particles and rigid bodies, friction, centroid and moments of inertia of an area. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Credit is allowed for only MAE 201 or MAE 212 OR Visiting University Student
MAE	202	Mech.Particles/Rigid Bodies II	Kinematics and kinetics of particles. Work, energy, and momentum principles for particles. Planar kinematics and kinetics of rigid bodies. Conservation of energy and momentum for rigid bodies. Equations of motion for particles and rigid bodies. Vibrations. Required for aerospace engineering and mechanical engineering.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Aerospace or Mech Engr BSE major; MAE 201 OR non-Aerospace or non-Mech Engr major; CEE 210, CNE 210, or MAE 201; Pre- or coreq(s): MAT 274 or 275; Credit is allowed for only MAE 202 or 212 OR Visiting University Student
MAE	213	Mechanics of Materials	Equilibrium, strain-displacement relations, and stress-strain-temperature relations. Applications to force transmission and deformations in axial, torsional, and bending of bars. Combined loadings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 201 with C or better; MAT 274 or 275 with C or better; PHY 122 with C or better OR Visiting University Student
MAE	214	Computer-Aided Engineering I	Introduces geometry and construction techniques in CAD, technical drawing conventions, generating drawings from CAD models.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Mechanical & Aerospace Engineering major; Pre- or corequisite(s): MAE 201 or 212 with C or better if completed OR Visiting University Student

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MAE	215	Intro to Programming in MATLAB	Introduces basic topics and concepts of computer programming in MATLAB.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Aerospace or Mechanical Engineering BSE major or Biomedical Engineering BSE major; MAT 265 or 270 with C or better OR Visiting University Student
MAE	241	Intro to Thermodynamics	Concepts of equilibrium, properties, states, systems, energy and entropy; 1st and 2nd thermodynamic laws, analysis of open and closed systems, power and refrigeration cycles.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Aerospace or Mech Engr BSE major; CHM 114 or 116; MAT 267 or 272; PHY 121 OR non-Aerospace or non-Mech Engr major: MAT 267 or 272; PHY 121; Credit is allowed for only MAE 240 or MAE 241 OR Visiting University Student
MAE	242	Intro to Fluid Mechanics	Introductory survey course covering fundamental concepts relating to engineering fluids. Fluid statics. Integral methods. Differential methods. Dimensional analysis and similarity. Incompressible internal and external flow. Potential flow. Required for Aerospace Engineering and Mechanical Engineering majors.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereqs w/C: MAT 267, 272; MAT 274, 275; MAE maj: MAE 201 OR non-MAE maj: CEE 210, CNE 210, MAE 201; Pre- or coreqs w/min C: MAE maj: MAE 202, 212 OR non-MAE maj: CEE 212, MAE 202, MAE 212; Credit allowed for MAE 240 or 242 OR Visiting University Student
MAE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MAE	301	Applied Experimental Statistic	Introduces key concepts in probability and statistics with engineering applications. Emphasizes modeling variation in observations, characterizing its distribution, and making inferences with regard to quality assurance and control. Develops critical skills such as fitting multivariate models, experimental design, and hypothesis testing, utilizing data from engineering projects, simulations, and laboratory experiences.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s): Aerospace or Mech Engr major; With C or better: CSE 100, CSE 110 or MAE 215; MAE 384; MAT 242, 342 or 343; MAT 274 or 275; MAT 267 or 272; Credit allowed for MAE 301 or MAE 394 (Applied Experimental Statistics) OR Visiting University Student
MAE	318	System Dynamics and Control I	Dynamics of physical systems, models of mechanical, electrical and electromechanical systems, Laplace transform, transfer functions, time response and frequency response, poles and zeros, block diagrams, stability, introduction to feedback control: closed-loop response, PID compensation, steady-state characteristics, root-locus design and analysis of systems, frequency-domain design concepts, Bode-plots and analysis of systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s) with C or better: EEE 202; MAE 202 or 212; MAE 384; MAT 267 or 272; PHY 131; PHY 132; Aerospace or Mechanical Engineering BSE major; Pre- or corequisite(s): MAE 301 with C or better if completed OR Visiting University Student
MAE	341	Mechanism Analysis and Design	Positions, velocities, and accelerations of machine parts; cams, gears, flexible connectors, and rolling contact; introduces synthesis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 212 with C or better, or both MAE 201 and 202 with C or better
MAE	384	Adv Math Methods for Engineers	Methods for numerical solutions to engineering problems. Nonlinear equations, quadrature, ordinary differential equations. Analytical and numerical solutions to partial differential equations.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	CS	Prereq(s): Engr mjr; CSE 100, 110, or MAE 215 w/C or better; MAT 242, 342, or 343 w/C or better; MAT 274 or 275 w/C or better; Pre- or coreq(s): MAT 267 or 272 w/C or better if completed; Credit for only CEE 384 or MAE 384 OR Visiting University Student
MAE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	400	Engineering Profession	Impact of mechanical and aerospace engineering in a global and societal context; effects of and on globalization, environment, sustainability, economy, politics; engineering ethics and business practices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Aerospace Engineering or Mechanical Engineering BSE majors; ENG 101, 105, or 107 with C or better; MEE 322, MAE 322, AEE 325, or MAE 325 with C or better OR Visiting University Student
MAE	404	Finite Elements in Engineering	Formulation and application of the finite element method through integration of theory, code development and application to problems in heat transport and solid mechanics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; CEE 213 or MAE 213 with C or better; CEE 384 or MAE 384 with C or better

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MAE	417	System Dynamics and Control II	Fundamentals of feedback control using linear transfer function system models. Analysis in time and frequency domains. Design in the s-plane (root locus) and in the frequency domain (loop shaping). State-space representation and state-feedback control, multivariable control with observers, discrete systems and z-transform, nonlinear systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE or Aerospace Engineering BSE major; MAE 318 with C or better OR Visiting University Student
MAE	436	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 with C or better; Credit is allowed for only MAE 436 or MAE 536 OR Visiting University Student
MAE	455	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prereq(s) w/ C or better: Fult Engrg undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student
MAE	460	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering Undergrad student; AEE 360 or MEE 340 w/ C or better; Credit allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dyn) or MAE 560 or MAE 598 (Applied Computational Fluid Dyn) OR Visiting University Student
MAE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		
MAE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MAE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MAE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MAE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate student
MAE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-3		
MAE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MAE	502	Partial Diff Equations Engr	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; credit is allowed for only MSE 502 or MAE 502
MAE	503	Finite Elements in Engineering	Ideas and methodology of finite element analysis. Applications to solid mechanics, heat transfer, fluid mechanics and vibrations. Knowledge of free-body diagrams and vector calculus operations is recommended.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 404 or MAE 503 or MAE 598 (Finite Elements in Engineering)
MAE	504	Exper Mthds Thermal/Fluid Proc	Theory of analog and digital signal analysis as applied to fluid and thermal measurements; optical diagnostics and micro sensors for measuring fluid velocity, pressure and temperature in unsteady flows; particle image velocimetry and thermal anemometry. Applies experimental in a weekly laboratory. Students should have completed an intermediate-level course in fluid dynamics, familiarity with Matlab or some programming language, prior exposure to Fourier series and Fourier transforms, as well as probability and statistics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	4		Prerequisite(s): Ira A. Fulton graduate student; Pre- or corequisite(s): MAE 571

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MAE	505	Perturbation Methods	Nonlinear oscillations, strained coordinates, renormalization, multiple scales, boundary layers, matched asymptotic expansions, turning point problems, and WKBJ method.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering students; Credit is allowed for only APM 575 or MAE 505
MAE	506	Adv Sys Model, Dynamic, Contrl	Lumped-parameter modeling of physical systems with examples. State variable representations and dynamic response. Introduces modern control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501; Credit is allowed for only EGR 556 or EGR 598 (System Control & Optimization) or MAE 506
MAE	507	Adv Modern Control & EST	System analysis, control, estimation and optimization. Stability, optimality, robustness, adaptation and safety considerations. Continuous-time, discrete-time and hybrid systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; MAE 506 with C or better
MAE	508	Digital Control:Design/Implmnt	Analysis and design of control systems in which the digital computer plays a major role. Review of continuous control and introduction to the key effects of sampling. Elements of discrete system analysis; z-transform; sampled-data systems; sampling theorem and combined discrete and continuous system and the phenomenon of aliasing. Deterministic design methods for digital control systems (root-locus, frequency response, pole placement and estimators). Multivariable, optimal control and Kalman filtering, followed by nonlinear control and system identification. Emphasizes digital control implementation topics and a case study on robot control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only MAE 508 or MAE 598 (Digital Control: Design and Implementation)
MAE	509	LMI Methods	The recent introduction of Linear Matrix Inequality (LMI) methods in control has dramatically expanded the types and complexity of the systems we can control. For example, consider the problems: gain scheduling for missile attitude control (a switched system); control of robots over noisy communication channels (a sampled-data systems); remote control of spacecraft attitude (a delayed system); behavioral therapy (a system with binary inputs); or self-driving vehicles (a case of decentralized control). None of these systems can be studied using classical root-locus or PID control methods. Rather, advances in these fields have been made possible through the increased power and flexibility created by the LMI (optimization-based) approach to control. Background knowledge in controls and linear algebra is recommended to be successful in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MAE 509 or MAE 598 (LMI Methods in Optimal and Robust Control)
MAE	510	Dynamics and Vibrations	Lagrange's and Hamilton's equations, rigid body dynamics, gyroscopic motion, and small oscillation theory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering students
MAE	512	Random Vibrations	Reviews probability theory, random processes, stationarity, power spectrum, white noise process, random response of single and multiple DOF systems, and Markov processes simulation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2-3		Pre-requisite: Graduate Engineering major
MAE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MAE	514	Vibration Analysis	Free and forced response of single and multiple degree of freedom systems, continuous systems; applications in mechanical and aerospace systems numerical methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 415 or MAE 514
MAE	515	Structural Dynamics	Free vibration and forced response of discrete multidegree of freedom and continuous systems, cyclosymmetric structures, introduction to rotordynamics, component mode synthesis, vibration of structures with moving mass/pipes with flow.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 514 with C or better
MAE	518	Fund of Microelectronics Pack	Multidisciplinary foundation course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Fulton Engineering Graduate students; Credit is allowed for only CHE 518, EEE 518, MSE 475, MSE 518 or MAE 518
MAE	519	Mechanics of Micro/Nano System	Basic processes used for fabricating micro and nanoscale structures used in MEMS. Analyzes the processes and micro/nanoscale structures from a mechanics perspective. Covers the fundamentals of microfabrication, scaling of forces, thermal stresses and strains in thin beams, thermal oxidation and dynamics of MEMS. Optional topics include mechanics of thin films and nanostructured materials.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 519 or MAE 598 (Mechanics of Micro/Nano Systems)

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MAE	520	Stress Analysis	Introduces tensors: kinematics, stress analysis, and constitutive assumptions leading to elastic and plastic behavior. Strain energy and energy methods; applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only CEE 521 or MAE 520
MAE	521	Structural Optimization	Linear and nonlinear programming. Problem formulation. Design sensitivity analysis. FEM-based optimal design of structural and mechanical systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; CEE 526 or MAE 527 with C or better; MAE 501 with C or better; Credit is allowed for only CEE 533 or EEE 589 or MAE 521
MAE	522	Plasticity	Discusses theory of plastic (and inelastic) deformation in solids, e.g., metals and polymers, with emphasis on the fundamental foundations of the field derived from empirical observations and thermodynamic principles, all within a small strain framework. Assumes some knowledge of undergraduate-level thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 520 or 529; Credit is allowed for only MAE 522 or MAE 598 (Plasticity)
MAE	523	Fracture Mechanics	Linear elastic fracture mechanics. Nonlinear problems. Fatigue fracture. Experimental methods in fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 598 (Continuum Mechanics) with C or better
MAE	524	Theory of Elasticity	Elastic behavior in two and three dimensions. Airy stress functions and displacement potentials. Elements of fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; MAE 520 or MAE 598 (Continuum Mechanics)
MAE	526	Design of Aerospace Structures	Provides a fundamental understanding of the design of aerospace structures. Topics include flight vehicle loads, metallic and composite materials, manufacturing methods, buckling and crippling of aerospace structures, fatigue, damage tolerance, finite element structural analysis, and design of joint and fittings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 426 (or MAE 426) or MAE 526 or MAE 598 (Design of Aerospace Structures)
MAE	527	Finite Elements for Engineers	Direct stiffness, method of weighted residuals, weak formulation, and variational techniques in the solution of engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; APM 505 or MAE 501 with C or better; Credit is allowed for only CEE 526 or MAE 527
MAE	528	Advanced Computational Mechani	Teaches methods for treating material and geometric nonlinearities by finite elements for transient and static simulations. Topics to be included are total and updated Lagrangian formulations, linearization and solution methods, stability analysis, nonlinear material models such as hyperelastic and plasticity, and recent research topics such as extended finite element methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): CEE 526 or MAE 527 or MAE 598 (Finite Elements in Engineering); MAE 529; Credit is allowed for only MAE 528 or MAE 598 (Advanced Computational Mechanics)
MAE	529	Continuum Mechanics	Tensors, Eulerian/Lagrangian strains, compatibility equations, Cauchy/nominal stresses, balance laws, Reynolds transport theorem, laws of thermodynamics for a continuum; equations of state, restrictions on constitutive laws, Newtonian fluids, inviscid flows, viscoelasticity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; MAE 501 with C or better
MAE	530	Dynamic Behavior of Materials	Focuses on material response under fast mechanical loading, with emphasis on plastic and elastic behavior as a function of pressure, temperature and strain rate, with and without effects of inertia. Starts with a treatment of elastic wave propagation, followed by a study of effects of strain rate and temperature on plastic behavior of metals, including a review of mechanisms and constitutive equations. Then, addresses the theory of shock waves including analysis of shocks using conservation principles as well as thermodynamics, followed by a discussion of dynamic failure. Finally, reviews experimental techniques for dynamic experiments, including drivers and diagnostics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; MAE 520 or 529; Credit is allowed for only MAE 530 or MAE 598 (Dynamic Behavior of Materials)
MAE	533	Transport Processes I	Unified treatment of momentum, heat, and mass transfer from molecular theory, and continuum points of view. Continuum equations of microscopic and macroscopic systems and multicomponent and multiphase systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major. Credit is allowed for only BME 533 or CHE 533 or MAE 533
MAE	536	Combustion	Combustion of gaseous and condensed-phase fuels. Thermodynamics, mass transfer and chemical kinetics of combustion. Explosion and ignition theories. Structure, propagation and stability of flames. Pollutant formation. Applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 436 or MAE 536
MAE	540	Advanced Product Design Method	Surveys research in engineering design process, artifact and design, knowledge, formal and informal logic, heuristic and numerical searches, theory of structure and complexity.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical or Aerospace Engineering graduate student
MAE	541	CAD Tools for Engineers	Elements of computer techniques required to develop CAD software. Data structures, including lists, trees, and graphs. Computer graphics, including 2- and 3-D algorithms and user interface techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student

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MAE	542	Design Geometry and Kinematics	Selected topics in geometry related to current potential applications in CAD/CAM, design theory, kinematics, and robotics. Euclidean isometrics, transformations; 4-D geometry; screw theory and its applications to robotics and assemblies. Differential geometry; curvature and torsional properties of curves and surfaces.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Mechanical and Aerospace Engineering graduate student; Credit is allowed for only MAE 542 or 598 (Design Geometry & Kinematics)
MAE	544	Mech Design/Failure Prevention	Modes of mechanical failure; applies principles of elasticity and plasticity in multiaxial state of stress to design synthesis; failure theories; fatigue; creep; impact.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	545	Modern Manufacturing Methods	Investigates the capabilities and equipment of both conventional manufacturing processes and modern manufacturing processes. Emphasizes the fundamental, development and application of casting, forming and sintering processes for conventional manufacturing processes. Emphasizes the emerging topics related to additive manufacturing, field-assisted manufacturing and nanomanufacturing for modern manufacturing processes. Also introduces engineering materials, structure of materials, property of materials and material characterizations in the manufacturing processes. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Develops an understanding of manufacturing process evolution and the capabilities of modern manufacturing processes and equipment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 545 or MAE 598 (Modern Manufacturing Methods) or MFG 545
MAE	546	Advanced CAE Simulation	Solution of advanced engineering problems with analysis software for structural, dynamic, nonlinear, contact and kinematic problems; selection of modeling parameters; reliability tests on software.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Engineering Graduate student; Credit is allowed for only MAE 406 or 546
MAE	547	Modeling and Control of Robots	Homogeneous transformations, workspace, forward and inverse kinematics, differential kinematics, statics and dynamics, motion planning, motion and force control.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Pre- or corequisite(s): APM 505 or MAE 501
MAE	548	Prob Methods for Eng Des/Analy	Fundamental probabilistic theory, engineering statistics, data analysis, reliability methods, Monte Carlo simulation with different sampling technique, mechanical and structural analysis under uncertainties, focusing on the application for mechanical, aerospace and civil engineering structures and materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 548 or MAE 598 (Probabilistic Methods for Eng Analysis and Design)
MAE	557	Mechanics Composite Materials	Analysis, design, and applications of laminated and chopped fiber reinforced composites. Micro- and macromechanical analysis of elastic constants, failure, and environmental degradation. Design project.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 520 or MAE 529
MAE	560	Applied Comput Fluid Dynamics	Numerical techniques for solving incompressible and compressible flow equations using industrial solvers. Computer-aided analysis of thermofluid systems. Applications to fluid system engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 460 or MAE 494 (Applied Computational Fluid Dynamics) or MAE 560 or MAE 598 (Applied Computational Fluid Dynamics)
MAE	561	Computational Fluid Dynamics	Finite-difference and finite-volume techniques for solving the subsonic, transonic, and supersonic flow equations. Method of characteristics. Numerical grid-generation techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering students; Credit is allowed for only AEE 471 or MAE 471, 561
MAE	562	Advanced CFD - Interfaces	Numerical methods for interfaces in low Mach number flows including level set methods, volume of fluid methods, Lagrangian interface tracking, ghost fluid methods, and immersed boundary methods. Includes coding of the covered numerical techniques and application to different physical interfaces, e.g., liquid/gas phase interfaces, premixed flames and flows in complex geometries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 561; Corequisite(s): MAE 502, 529, or 571; Credit is allowed for only MAE 562 or MAE 598 (Advanced Computational Fluid Dynamics)
MAE	563	Aircraft Propulsion	Fundamentals of gas-turbine engines. Analysis and design of components. Alternative aircraft propulsion systems. Recommend a background in thermodynamics and high-speed aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only AEE 463 or MAE 463 or MAE 563 or MAE 598 (Aircraft Propulsion) or MAE 598 (Propulsion)
MAE	564	Advanced Aerodynamics	Advanced topics in aerodynamics with application to design. Slender body theory. Thin airfoil theory. Transonic and supersonic effects. Sweep theory. Wave drag. Post-stall (vortex) flows. Supersonic and hypersonic flows.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Aerospace Engineering major

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MAE	565	Rocket Propulsion	Rocket flight performance, nozzle design, combustion of liquid and solid propellants, component design, advanced propulsion systems, interplanetary missions, testing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical or Aerospace Engineering graduate student; Credit is allowed for only AEE 465 (or MAE 465) or MAE 565 or EGR 598 (Rocket Propulsion) or MAE 598 (Rocket Propulsion)
MAE	566	Rotary-Wing Aerodynamics	Introduces helicopter and propeller analysis techniques. Momentum and blade-element, helicopter trim. Hover and forward flight. Ground effect, autorotation and compressibility effects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE 466 or 566
MAE	570	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics; property relationships, power and refrigeration cycles, and reactive systems. A basic knowledge of thermodynamics is required to be successful in this course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MAE 482 or MAE 570 or MEE 482
MAE	571	Fluid Mechanics	Basic kinematic, dynamic, and thermodynamic equations of the fluid continuum and their application to basic fluid models.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre- or corequisite(s): MAE 502
MAE	573	Advanced Fluid Mechanics	Mechanics of fluids flows where either the effects of inertia or viscosity are significant. Exact and approximate solutions of the Navier-Stokes equations, laminar flow and flow at low and high Reynolds numbers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 571 with C or better
MAE	574	Multiphase Flow	Models for multiphase flows including dispersed and continuous phase flow models, particle-fluid and particle-particle interactions, droplet collision and coalescence, atomization, and numerical and experimental methods for analyzing multiphase flows.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): MAE 502; MAE 529; MAE 571; Credit is allowed for only MAE 574 or MAE 598 (Multiphase Flow)
MAE	575	Turbulence	Graduate-level introduction to turbulent flows covering the essential physical basis of turbulence, the statistical description of turbulent flows, dynamics of energy transfer and dissipation in such flows, inner- and outer-variable scaling of turbulent flows, and modern computational modeling and simulation of turbulence and turbulent flows. Requires undergraduate background in fluid mechanics and strong graduate-level mathematics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student
MAE	576	Energy Efficiency	Provides a broad background in energy efficiency analysis and technologies. Applies fundamental concepts from thermodynamics, heat transfer and fluid mechanics to real-world applications including heating, ventilating, air conditioning (HVAC), refrigeration, compressed air systems, steam systems, combined heat and power (CHP). Complements other courses on conventional and renewable power generation by focusing on reducing energy consumption, thus making it easier to meet our energy needs from sustainable sources. To be successful in this course, students should have knowledge of thermodynamics principles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 494 (Energy Management) or MAE 494 (Energy Efficiency) or MAE 576 or MAE 598 (Energy Management)
MAE	577	Advanced Turbulence	Reynolds equations and their closure. Modeling of simple and complex turbulent flows, calculations of internal and external flows, and application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering graduate student; MAE 575 with C or better
MAE	578	Geophys & Environ Fluid Dynam	Dynamics of large-scale flows under the influence of stratification and earth rotation. Thermally and mechanically driven flows in turbulent boundary layer. Waves and instability of geophysical flows. Global-scale circulation. Applications to environmental prediction.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student
MAE	579	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441
MAE	581	Advanced Thermodynamics	Basic concepts and laws of classical equilibrium thermodynamics; applications to engineering systems; introduction and applications of statistical mechanics and kinetic theory; Boltzmann integro-differential equation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student

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MAE	582	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems, and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering major; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)
MAE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Fulton Engineering graduate student
MAE	585	Solar Thermal Engineering	Solar energy availability, flat-plate and concentrating solar thermal collectors, solar heating and cooling, concentrating solar power (CSP).	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Graduate Engineering student; credit is allowed for only MAE 585 or 598 (Solar Thermal Engineering)
MAE	586	Advanced Heat Transfer	Basic concepts and governing equations. Analysis of laminar and turbulent heat transfer for internal and external flows. Natural and mixed convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	587	Radiation Heat Transfer	Advanced concepts and solution methodologies for radiation heat transfer, including exchange of thermal radiation between surfaces, radiation in absorbing, emitting, and scattering media and radiation combined with conduction and convection.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): graduate Engineering student
MAE	588	Nanoscale Heat Transfer	Explores the fundamental micro and nanoscale origins of thermal transport. Uses energy transport formalism to explain the breakdown of macroscopic transport laws (e.g., Fourier's law) at the micro and nanoscale. Defines and explores the key carriers of heat: phonons, photons, electrons and molecules. Derives the energy states of these carriers and combines this knowledge with statistical thermodynamics to determine the population distribution of these carriers. Combining these distributions with scattering processes enables fundamental laws to be derived within the context of their microscopic/nanoscale underpinnings. Some of these phenomena include, Fourier's law, Ohm's law, thermopower, Wiedemann-Franz law, Dulong-Petit law, equation of radiative transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed only for MAE 588 or MAE 598 (Nanoscale Heat Transfer)
MAE	589	Heat Transfer	Basic concepts; physical and mathematical models for heat and mass transfer. Applications to conductive, convective, radiative, and combined mode heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MAE 494 topic (Heat and Mass Transfer) or 589
MAE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): graduate MAE major
MAE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisites: Mechanical or Aerospace Master's degree student
MAE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Pre-requisite(s): Mechanical or Aerospace Engineering graduate student
MAE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		Prerequisite(s): graduate Engineering student

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MAE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-12		Prerequisite(s): Aerospace Engineering or Mechanical Engineering or Robotics and Autonomous Systems (Mechanical and Aerospace Engineering) MS student
MAE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MAE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-15		Prerequisite(s): Mechanical or Aerospace Doctoral student
MAS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	1-4		
MAS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	501	Mthd Interdisciplinary Inquiry	Critical survey of current models of inquiry, tools, processes, and methods in different fields.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Pre-requisites: Interdisciplinary Studies Masters student
MAS	502	Perspectives in Interdisc Stud	Introduces interdisciplinarity through explorations of epistemological and rhetorical practices that bridge traditional disciplines.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	505	Theory Change, Culture & Mind	Introduces graduate-level interdisciplinary study of key thinkers, movements, theories, and paradigms in 20th-century thought.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	510	Science & Religion: Cosmolog	Examines science and religion, stressing modern scientific findings and philosophical and historical debates and dialogues.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 430 or MAS 510
MAS	513	Sociology of Everyday Life	Examines institutional ethnography, a way of exploring the particular and generalized social relations that shape people's everyday experiences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	514	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the nineteenth and twentieth centuries. Course dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAS 514 or MAS 598 (Studies in Critical Theory) or MAS 598 (Continental Philosophy and Religion)
MAS	550	Issues in Death and Dying	From Plato to Maimonides to Heidegger to Kubler-Ross, scholars, clinicians, and spiritual writers have recognized that attitudes about death and dying contribute to understandings of human existence. Recalling the ancient Socratic, biblical, and other spiritual traditions of the cura animarum (care for and cure of the soul) and joining contemporary post/secular conversations relevant to integration of body-mind-spirit, this course introduces basic concepts and practices of care ethics and spirituality. Focuses on relations among existential (ontological), therapeutic (psychosomatic), and spiritual (religious) dimensions of care. Theoretically, the course is inter-faith in approach, holistic in scope, and specialized in content. Practically, students examine real-life issues in care ethics and spirituality from multiple perspectives.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-9		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAS	573	Art and Politics	Explores issues and relationships between the arts and politics through historical examples, significant artists and works, key thinkers, and theoretical approaches. Considers topics such as: the arts and ideology, art and the politics of representation, propaganda, censorship, state-supported art, human rights, revolution and war, cultural change, and political aesthetics. Emphasizes interdisciplinary arts and period study, including the arts and The Russian Revolution, the art in the Weimar Republic and Nazi Germany, and, generally, the arts, art and social movements (e.g., U.S. Civil Rights era, Eastern Europe's solidarity movement and Velvet Revolutions), as well as the arts and politics in selected contemporary contexts (e.g., China, the Middle East).	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAS	585	Capstone Course	Assists students in preparing their capstone project, which represents the culmination of their study for the MA in Interdisciplinary Studies.	N	RSC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3-4		Pre-requisites: Interdisciplinary Studies Masters student
MAS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Pre-requisites: Interdisciplinary Studies Masters student
MAS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Pre-requisites: Interdisciplinary Studies Masters student
MAS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	110	Enhanced Freshman Mathematics	Individually paced, computer-mediated course designed to prepare students for college-level mathematics. Students work on various modules in an online adaptive learning technology platform created to help students progress through the course material based on individual needs in preparation for enrollment in the next level math course required by the student's major (pre-MAT 117 "Track 1" or pre-MAT 142 "Track 2"). Upon completion of this course, students should see improvement of basic math skills, an increase in the confidence in mathematical abilities, and advancement in ability to relate math to real-life applications. Credit for this course does not count towards university graduation requirements	N	LEL	N	ELG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-3		Prerequisite(s): Mathematics Placement Test below 32% for majors that require MAT 142 OR Mathematics Placement Test 32-39.9% for majors that require MAT 117 or higher (consult your major map)
MAT	117	College Algebra	Linear functions, quadratic functions, general polynomial functions, rational functions, systems of linear equations, logarithmic and exponential functions.	N	LEL	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade or ALEKS score of 0-60 or higher OR Visiting University Student
MAT	119	Finite Mathematics	Topics from linear algebra, linear programming, combinatorics, probability, and mathematics of finance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 170, 210, or 270 with C or better or ALEKS score of 61 or higher OR Visiting University Student

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MAT	142	College Mathematics	Applies basic college-level mathematics to real-life problems. Topics include numerical reasoning, sets, counting techniques, probability, basic statistics and finance. Appropriate for students whose major does not require MAT 117 or 170.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 110 with Y grade or ALEKS score of 0-60 or higher OR Visiting University Student
MAT	170	Precalculus	Intensive preparation for calculus. Topics include functions (including trigonometric), vectors and complex numbers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	171	Precalculus: STEM	Robust treatment of advanced algebraic skills and trigonometry that are vital in calculus. Algebra topics include functions, compositions, inverses, transformations, complex numbers, roots of polynomial functions, rational functions, exponential and logarithmic functions and their properties. Trigonometry is approached via the unit circle as well as the right triangle. Topics include the trigonometric functions, their graphs and identities, inverse trigonometry, the laws of sine and cosine, vectors and the dot product with an application toward work, and polar coordinates and roots of complex numbers (deMoivre's theorem).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 117 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 170 or MAT 171 OR Visiting University Student
MAT	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
MAT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0-5		
MAT	207	Algebra and Geometry in the HS	Provides a conceptually rigorous treatment of the central ideas of algebra and geometry in high school. Explores and develops familiar mathematical content from a very different perspective. Focuses squarely on creating meaning for concepts and on building coherence of meaning across concepts and various representations of them. As such, course activities and assessments (class/lab activities, homework assignments, and exams) reflect these expectations, focusing on both doing high school mathematics with meaning and on expressing and communicating that meaning accurately and coherently in verbal and written form. Prior to enrolling in this course, students should have experience with algebra/geometry to at least the high school level.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Corequisite(s): MTE 210 OR Visiting University Student
MAT	208	Discrete Math for Secondary Ed	Potential secondary teachers of mathematics should master the Math Standards proposed by the National Council of Teachers of Mathematics for college-intending students. Focuses on those aspects of these standards that apply to discrete mathematics with particular emphasis on: mathematical problem solving, mathematics as communication, mathematical reasoning, and discrete mathematics. Taking a broader view, introduces mathematics as a discipline that uses known methods to discover and verify new conclusions through the study of discrete mathematics.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MAT	210	Brief Calculus	Differential and integral calculus of elementary functions with applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 117, 119, 170, or 171 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student
MAT	211	Math for Business Analysis	Topics in business analysis, including: Lagrange multipliers, linear programming, linear algebra, intermediate probability, random variables, discrete distributions, and continuous distributions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better OR Visiting University Student
MAT	242	Elementary Linear Algebra	Introduces matrices, systems of linear equations, determinants, vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	2		Prerequisite(s): MAT 210, MAT 251, MAT 265 or MAT 270 with C or better; minimum sophomore standing OR Visiting University Student
MAT	243	Discrete Math Structures	Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; minimum sophomore standing OR Visiting University Student
MAT	251	Calculus for Life Sciences	Differential and integral calculus of elementary functions. Introduces differential and difference equations. Emphasizes applications to the life sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251 OR Visiting University Student

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MAT	265	Calculus for Engineers I	Limits and continuity, differential calculus of functions of one variable, introduction to integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	266	Calculus for Engineers II	Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	267	Calculus for Engineers III	Vector-valued functions of several variables, partial derivatives, multiple integration.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 267 or 272 OR Visiting University Student
MAT	270	Calculus w/Analytic Geometry I	Real numbers, limits and continuity, and differential and integral calculus of functions of 1 variable.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 170 or 171 with C or better or ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270 OR Visiting University Student
MAT	271	Calculus w/Analytic Geomtry II	Methods of integration; applies calculus, elements of analytic geometry, improper integrals, sequences and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or MAT 271 OR Visiting University Student
MAT	272	Calc w/Analytic Geometry III	Vector-valued functions of several variables, multiple integration, and introduction to vector analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	4	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 267 or MAT 272 OR Visiting University Student
MAT	274	Elem Differential Equations	Introduces ordinary differential equations, adapted to the needs of students in engineering and the sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or MAT 271 with C or better; Credit is allowed for only MAT 274 or 275
MAT	275	Modern Differential Equations	Introduces differential equations, theoretical and practical solution techniques. Applications. Problem solving using MATLAB.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	MA	Prerequisite(s): MAT 266 or 271 with a C or better; Credit is allowed for only MAT 274 or 275 OR Visiting University Student
MAT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MAT	300	Mathematical Structures	Logic and set theory, induction, functions, order and equivalence relations, cardinality. Emphasizes writing proofs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
MAT	310	Introduction to Geometry	Congruence, area, parallelism, similarity and volume, and Euclidean and non-Euclidean geometry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	342	Linear Algebra	Linear equations, matrices, determinants, vector spaces, bases, linear transformations and similarity, inner product spaces, eigenvectors, orthonormal bases, diagonalization, and principal axes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student
MAT	343	Applied Linear Algebra	Solving linear systems, matrices, determinants, vector spaces, bases, linear transformations, eigenvectors, norms, inner products, decompositions, applications. Problem solving using MATLAB.4	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 266 or 271 with C or better; Credit is allowed for only MAT 342 or MAT 343 OR Visiting University Student
MAT	350	Tech/Apps of Applied Math	Mathematical techniques and applications representative of the range of applied mathematics used in operations research, biology, economics, finance, and sociology. In depth exploration of these techniques in detail by focusing on selected applications.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 274 or 275; Pre- or corequisite(s): MAT 342 or 343; Corequisite(s): STP 280 or 420
MAT	353	Mathematics and Cancer	Addresses some of the mathematical questions regarding the dynamics of cancer growth and treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; MAT 275 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 353 or MAT 394 (Mathematics and Cancer) OR Visiting University Student
MAT	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student

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MAT	370	Intermediate Calculus	Theory behind basic 1-variable calculus: continuity, derivative, Riemann integral, sequences, and series.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better, MAT 300 with C or better, Credit is allowed for only MAT 370 or MAT 371 with C or better OR Visiting University Student
MAT	371	Advanced Calculus I	Real numbers, completeness, sequences/series, continuity, uniform theorems, derivative, Riemann integral, pointwise/uniform convergence, Taylor's theorem. Credit is allowed for only MAT 371 or 370 toward a mathematics degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better, MAT 300 with C or better OR Visiting University Student
MAT	372	Advanced Calculus II	Open, closed, compact sets in R^n continuity, differentiation, partial differentiation, integration in R^n Inverse/implicit function theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better; Pre- or corequisite(s): MAT 342 or 343 with C or better; Credit is allowed for only MAT 372 or 460
MAT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	410	Intro to General Topology	Point set topology, topological spaces, metric spaces, continuity, compactness, connectedness and product spaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	411	History and Philosophy of Math	Examines nature of mathematics from origins to present, revealed by its history and philosophy. Strong background in mathematics not required.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	HU & H	
MAT	412	Differential Geometry	Rigorous treatment to the concepts and methods of differential geometry via the classical theory of curves and surfaces in Euclidean space, the Gauss-Bonnet theorem, and additional topics as time and interest permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 with C or better; MAT 371 with C or better; Credit is allowed for only MAT 412 or MAT 494 (Introduction to Differential Geometry)
MAT	415	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Pólya theory and combinatorial structures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 415 or MAT 512 OR Visiting University Student
MAT	416	Graph Theory	Trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 242, 342, or 343 with C or better; Credit is allowed for only MAT 416 or MAT 513
MAT	419	Intro to Linear Optimization	Simplex method, duality, and network flows. Applications to game theory, geometry, combinatorics, graph theory, and posets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): ACO 101, ACO 102, CSE 100, CSE 110, or CSE 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better
MAT	420	Scientific Computing	Surveys and applies programming languages, libraries, and scientific visualization tools. Programming assignments emphasize software development skills. Completion of advanced calculus recommended prior to this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 205 with C or better; MAT 274 or 275 with C or better; MAT 342 or 343 with C or better OR Visiting University Student
MAT	421	Applied Computational Methods	Numerical methods for quadrature, differential equations, roots of nonlinear equations, interpolation, approximation, linear equations, floating-point arithmetic, and roundoff error.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 272 or 267 with C or better
MAT	423	Numerical Analysis I	Solution of systems of linear and nonlinear equations, optimization, eigenvalues, round-off error, and floating point arithmetic. Fluency in computer programming is required for enrollment in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 342 or 343 with C or better OR Visiting University Student
MAT	425	Numerical Analysis II	Analysis of and algorithms for numerical interpolation, integration, and differentiation. Numerical solution of ordinary and partial differential equations, introductory level. Applications. Fluency in computer programming is required for success in this course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 371 recommended
MAT	429	Optimization	A variety of optimization models and their applications to management, economics, engineering, and science. Topics include linear programming, integer programming, nonlinear programming, and stochastic programming. Stresses formulation and modeling as well as numerous applications and solving algorithms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 343 with C or better; MAT 350 or 419 with C or better
MAT	440	Group Theory	Covers basic group theory. Students learn about the concept of a "group," related structures, their underlying theory and examples of how they arise in mathematics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343 OR Visiting University Student
MAT	441	Ring Theory	Covers basic ring theory. Students learn about the concept of a "ring," related structures, their underlying theory, and examples of how they arise in mathematics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300; MAT 342 or 343
MAT	442	Advanced Linear Algebra	Fundamentals of linear algebra, dual spaces, invariant subspaces, canonical forms, bilinear and quadratic forms, and multilinear algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better OR Visiting University Student

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MAT	443	Intro to Abstract Algebra	Introduces concepts of abstract algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better; Credit is allowed for only MAT 443 or MAT 444
MAT	444	Intermediate Abstract Algebra	Basic theory of groups, rings, and fields, including an introduction to Galois theory. Appropriate as preparation for MAT 543.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 440, 441, or 442 with C or better
MAT	445	Theory of Numbers	Prime numbers, unique factorization theorem, congruences, Diophantine equations, primitive roots, and quadratic reciprocity theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 300 with C or better; MAT 342 or 343 with C or better
MAT	447	Cryptography I	Block ciphers, stream ciphers, congruence arithmetic, information theory, public key cryptosystems, key exchange, electronic signatures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): CSE 100, 110, or 205 with C or better; MAT 242, 342, or 343 with C or better; MAT 300 with C or better OR Visiting University Student
MAT	448	Cryptography II	Mathematical underpinnings of contemporary cryptosystems, electronic signatures, key exchange, primality testing and factorization algorithms.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 447. Credit is allowed for only MAT 448 or MAT 494. Cryptography II
MAT	450	Mathematical Models in Biology	Introduces mathematical models in biological systems. Applications range from the cellular level to systems level and may include applications from areas such as physiology, ecology, epidemiology, population biology, computational and systems biology.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 274 or 275 with C or better
MAT	451	Mathematical Modeling	Detailed study of one or more mathematical models that occur in the physical or biological sciences.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 274 or 275 with C or better; MAT 242 or 342 or 343 with C or better OR Visiting University Student
MAT	452	Intro Chaos/Nonlinear Dynamics	Properties of nonlinear dynamical systems; dependence on initial conditions; strange attractors; period doubling; bifurcations; symbolic dynamics; Smale-Birkhoff theorem; and applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 274 or 275 with C or better; MAT 242, 342, or 343 with C or better; MAT 371 is recommended OR Visiting University Student
MAT	460	Vector Calculus	Vectors, curvilinear coordinates, Jacobians, implicit function theorem, line and surface integrals, Green's, Stokes', and divergence theorems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better; MAT 371 is recommended; Credit is allowed for only MAT 372 or 460
MAT	461	Applied Complex Analysis	Analytic functions, complex integration, Taylor and Laurent series, residue theorem, conformal mapping, and harmonic functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better
MAT	462	Applied Partial Diff Equations	Second-order partial differential equations, emphasizing Laplace, wave, and diffusion equations. Solutions by the methods of characteristics, separation of variables, and integral transforms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 274 or 275 with C or better; MAT 242, 342 or 343 with C or better OR Visiting University Student
MAT	472	Intermediate Real Analysis I	Introduces analysis in metric spaces with emphasis on the real line.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 371 with C or better OR Visiting University Student
MAT	473	Intermediate Real Analysis II	Analysis in R^n : implicit function theorem, introduction to manifolds, Lebesgue integration, change of variables formula, convergence theorems for integrals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 472 with C or better
MAT	475	Differential Equations	Linear and nonlinear ordinary differential equations, asymptotic behavior of solutions, stability, existence and uniqueness, limit sets, Poincar-Bendixson theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274 or 275 with C or better; MAT 371 with C or better OR Visiting University Student
MAT	476	Partial Differential Equations	First-order quasilinear, method of characteristics, second-order linear (hyperbolic, parabolic, elliptic), Green's functions, integral representations, eigenfunction expansions, maximum principles, harmonic functions, and additional topics as time permits.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 242, 342, or 343 with C or better; MAT 274, 275, or 475 with C or better; MAT 371 with C or better
MAT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): minimum 45 hours
MAT	485	History of Mathematics	Topics from the history of the origin and development of mathematical ideas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite(s): MAT 267 or 272 with C or better OR Visiting University Student
MAT	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
MAT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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MAT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MAT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MAT	495	Undergraduate Research	Supervised research in mathematical sciences.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MAT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		Prerequisite(s): minimum 45 hours
MAT	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	501	Geomtry/Topolgy of Manifolds I	Brief review of general topology, cell complexes, topological manifolds, fundamental groups, covering spaces, homology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MAT 501 or MAT 598 (Geometry and Topology of Manifolds)
MAT	502	Geomtry/Toplgy of Manifolds II	Differentiable manifolds, vector and tensor fields, differential forms, flows, Lie groups, homogeneous spaces, de Rham cohomology, Riemannian metrics and curvature.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 501; Credit is allowed for only MAT 502 or MAT 598 (Geometry Topology of Manifolds II)
MAT	512	Introduction to Combinatorics	Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Polya theory and combinatorial structures. Same topics as MAT 415; mastery at much higher level required. Students with MAT 415 (even as undergraduates) may not enroll.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student; Credit is allowed for only MAT 415 or 512
MAT	513	Graph Theory	Rigorous introduction to graph theory. High-level mastery in topics such as trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MAT 416 or 513
MAT	514	Enumerative Combinatorics I	First semester of a systematic development of enumerative combinatorics, including elementary counting techniques, sieve methods, and partially ordered sets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	515	Enumerative Combinatorics II	Second semester of a systematic development of enumerative combinatorics, including lattices, exponential structures, symmetric functions, and selected special topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	516	Graph Theory I	First semester of a systematic development of graph theory, including matchings, connectivity, arboricity, planarity, coloring, network flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	517	Graph Theory II	Second semester of a systematic development of graph theory, including dense and sparse graphs, Ramsey theory, hamiltonicity, random graphs, minors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	541	"p"-Adic Numbers	Introduces "p"-Adic numbers and analysis. Topics include valuations, completions of number fields, extensions of the field of "p"-adic numbers and "p"-adic analysis. Students should have previously taken courses in analysis and algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	542	Elliptic Curves	Geometry and arithmetic of elliptic curves, points of finite order, the group of rational points, curves over finite fields, complex multiplication. Students should have previously taken a senior-level course in abstract algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	543	Abstract Algebra I	Groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	544	Abstract Algebra II	Continuation of groups, modules, rings and fields, Galois theory, homological algebra, and the representation theory	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 543
MAT	545	Abstract Algebra III	Covers modules, Galois theory, and preparation for advanced study in algebraic parts of mathematics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	547	Algebraic Number Theory	Algebraic properties of number fields and their completions. Topics include rings of integers, ramification, finiteness of the class group, and Dirichlet's unit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 544
MAT	570	Real Analysis I	Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	571	Real Analysis II	Continuation of Lebesgue integration, selected function spaces, differentiation, abstract measure theory, and elements of functional analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 570
MAT	572	Complex Analysis I	Analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAT	573	Complex Analysis II	Continuation of analytic functions, series and product representations, entire and meromorphic functions, normal families, Riemann mapping theorem, harmonic functions, and Riemann surfaces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 572
MAT	578	Functional Analysis I	Locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	579	Functional Analysis II	Continuation of locally convex, normed, and Hilbert spaces. Linear operators, spectral theory, and application to classical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Pre-requisite: MAT 578
MAT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MAT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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MAT	117S	College Algebra Stretch	For students who have an in-progress (Z) grade for MAT 117. The grade earned in MAT 117S replaces the Z grade for MAT 117. Course content is the same as MAT 117, which is intended to develop skills in linear functions, quadratic functions, general polynomial functions, rational functions, exponential functions and logarithmic functions. Also studies systems of linear equations. Emphasizes problem-solving techniques, specifically by means of discussing concepts in each of these topics.	N	LEL	N	NOG	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	0		Prerequisite(s): MAT 117 with grade of Z OR Visiting University Student
MBB	343	Genetic Engineering & Society	Introduces genetic engineering, with emphasis on applications (transgenic plants and animals, cloning, vaccines, therapeutics, and diagnostics).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only BIO 343 or MBB 343
MBB	347	MolecularGenetics:GenesProtein	Emphasizes molecular and cell biology and gene technology, both at the basic and applied research levels, in the growing areas of biotechnology and the molecular biosciences; focuses on molecular processes that allow genetic information to be expressed and regulated and by introducing applications to real-world situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 181 and 182 both with C or better or BIO 282 with C or better; CHM 116 with C or better; Credit is allowed for only BIO 340 or BIO 342 or MBB 347 OR Visiting University Student
MBB	350	Applied Genetics	Introduces molecular genetics with emphasis on application of genetics to solve biological questions and to engineer organisms for biotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BIO 340 or MBB 247 or MBB 347 with C or better; Credit is allowed for only MBB 350 or PLB 350 OR Visiting University Student
MBB	355	Intro to Computation Molec Bio	Introduces the mathematical skills used in molecular biology, genomics, and bioinformatics.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	CS	Prerequisite(s): MAT 119, 210, 243, 251, 265, or 270 or STP 220, 226, or 231 with C or better; Credit is allowed for only BIO 355 or CPI 480 or MAT 355 or MBB 355 OR Visiting University Student
MBB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	440	Functional Genomics	Covers emerging fields of genomics and proteomics. Discusses key technologies and their applications to the study of genomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
MBB	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student
MBB	446	Molecular Biology/Genetics Lab	Molecular genetic techniques; plasmid construction, purification, and characterization; PCR; mutagenesis; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student
MBB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): Molecular Biosciences and Biotechnology BS major; minimum 2.75 GPA
MBB	490	Capstone: Issues Biotechnology	Integrates science and biotechnology industry issues dealing with intellectual property, regulatory issues, business practices, and commercialization. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MBB 343 with C or better
MBB	491	Capstone: Issues in Mol Biosci	Integrates molecular science and societal issues dealing with ethics, regulatory issues, and societal needs that pertain to molecular biosciences. Both MBB 490 and MBB 491 for L General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): BIO 340 or MBB 347 with C or better; ENG 101, 105, or 107 with C or better
MBB	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MBB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MBB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MBB	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): minimum junior standing OR Visiting University Student

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MBB	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): Junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MBB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): Molecular Biosciences and Biotechnology BS major; minimum 3.0 GPA
MBB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MCB	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	501	Seminar:Molecular/Cell Biology	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	539	Computing for Research	Works mainly with command-line programs, focusing on sequence-based analysis. An interactive flipped course, with required hands-on aspects both in class debugging and troubleshooting and for out-of-class assignments where students work on problem solving and implementation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 539 or EVO 539 or MCB 539 or BIO 498 (Comp for Research) or BIO 598 (Comp for Research) or EVO 598 (Comp for Research) or MCB 598 (Comp for Research)
MCB	540	Functional Genomics	Functional relevance of genomic sequences; DNA arrays, proteomics, analysis of genomic information for metabolic physiology of organisms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 440 or MBB 440 or MCB 540
MCB	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB or NEU 555
MCB	556	Adv Molecular/Cell Biol II	Continuation of MCB 555.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	701	Seminar:Molecular/Cellular Bio	Presentation of current research by noted researchers in the field.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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MCB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCE	447	Diversity in Multicultural Set	Diversity and the changing role of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MCE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
MCO	101	Everyday Grammar	Helps students master the elements of English grammar.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): non-Journalism and Mass Communication majors or non-Sports Journalism majors; Credit is allowed for only JMC 101 or JMC 194 (Grammar for Journalists) or MCO 101 or MCO 194 (Everyday Grammar) OR Visiting University Student
MCO	102	Fundamentals of Coding	Provides a basic understanding of how the Internet works, knowledge of how to create and upload Web pages, and a basic introduction to programming with JavaScript. Assumes no previous knowledge of any of the topics, although requires basic knowledge of how to use a Web browser and navigate the Web.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Credit is allowed for only JMC 102 or JMC 194 (Coding for Journalists) or MCO 102 or MCO 194 (Fundamentals of Coding) OR Visiting University Student
MCO	120	Media and Society	Covers the role of newspapers, magazines, radio, television and motion pictures in American society.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): non-Journalism and Mass Communication major or non-Sports Journalism major; Credit is allowed for only JMC 110 or MCO 120 OR Visiting University Student
MCO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	240	Media Issues Amer Pop Culture	Examines the production and consumption of popular culture as disseminated by the mass media with emphasis on the societal implications.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		
MCO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	302	Media Research Methods	Surveys research methods used in the social sciences, with a focus on mass communication.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	307	The Digital Audience	Introduces students to the foundations of digital strategy, including audience research, social media campaigns, SEO, analytics, audience targeting, goal setting and more. Through hands-on exercises with real brands, students learn how audiences differ across industries and platforms, approaches for engaging users, and how organizations use audience data to create growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	335	Social Media	Surveys the social media landscape: what are social media platforms, who uses them, and how are they transforming the way we inhabit the world? Explores and critically analyzes the social, cultural, legal, ethical, economic and technological dimensions of social media environments from Facebook to Foursquare, Twitter to Flickr and beyond.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Students may not earn credit for both MCO 335 and MCO 435 OR Visiting University Student

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MCO	366	Media Ethics and Diversity	Explores contemporary news media ethical problems in a seminar setting. Uses journalism and mass communication ethical perspectives to obtain keys to unlock contemporary dilemmas surrounding the news media.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 366 or JMC 367 or MCO 366 or MCO 494 (Media Ethics and Diversity) OR Visiting University Student
MCO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		
MCO	403	Media Law	Provides a grounding in the laws and regulations that govern various aspects of the media with a focus on First Amendment guarantees and privileges and the extent to which those have been limited by courts and lawmakers. Topics include freedom of expression, libel, privacy and obscenity.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 402 or MCO 403 or MCO 503 OR Visiting University Student
MCO	418	History of Mass Communication	American journalism from its English and colonial origins to the present day. Development and influence of newspapers, magazines, radio, television, and news gathering agencies.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB & H	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	420	Strategic Sports Communication	Covers the wide-ranging field of strategic sports communication. Prepares students for an entry-level position in the strategic sports communication field.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Communication or Sports Journalism or Business (Sports and Media Studies) major; minimum 45 hours OR Visiting University Student
MCO	425	Digital Media Literacy I	Helps students begin to navigate the 21st-century media, starting by becoming active users of media, not just passive consumers. The Internet-fueled democratization of media creation has enabled anyone to be a publisher, and given audiences' almost infinite choices, with both great and questionable effects. In a world of information abundance, it can be difficult to discern fact from opinion and truth from fiction. We need to know how to wade through this barrage of information with a critical eye, to be better informed, and ultimately become creators of media ourselves.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 425 or MCO 494 (Digital Media Literacy) OR Visiting University Student
MCO	426	Digital Media Literacy II	Discusses digital media consumption to some degree, but focuses more on media creation and the many issues we need to understand for best practices. Students learn the importance of understanding the tools and techniques of media creation, and how media are used to persuade, the ethical and legal issues in creating media, policy issues that can (or will) affect media creation, and an assortment of media-creation techniques.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 426 or MCO 494 (Digital Media Literacy II) OR Visiting University Student
MCO	427	Misinformation and Society	Develops strategies and tactics to recognize misinformation, and inoculates students--and helps them join the battle--against it. Misinformation in our context is false information purposefully created to deceive and cause harm. It runs rampant in today's digital information ecosystem, and is becoming more and more sophisticated and difficult to spot. Bad actors are using powerful tools and techniques to infect our information supply, sowing confusion and discord. While there are laudable efforts to staunch the flow of misinformation, media users need help in deciding what information to trust. Examines the evolution of misinformation and the range of content types that fall under its umbrella. Explores tools, techniques and tactics that individuals can employ to identify misinformation, and gives them a head start on making informed decisions on what, and whom, they can trust.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA
MCO	428	DigMed & Freedom Expr 21st Cnt	Covers the extraordinary nature of media in this century. Examines how the media and communications tools of the past 100+ years--telephones, print publications and broadcasting outlets--gave way to the Internet, a radically centralized network of networks that is rapidly re-centralizing. Also explores how the ability to exercise freedom of expression became radically easier in the early days of the Internet, but how that freedom, among others, may be in jeopardy--and, if so, what can be done about that, as individuals and members of communities.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 428 or MCO 494 (Media and Free Expression in the 21st Century) or MCO 598 (Media and Free Expression in the 21st Century)
MCO	430	International Mass Communicatn	Comparative study of communication and media systems. Information gathering and dissemination under different political and cultural systems.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	G	Prerequisite(s): minimum cumulative 2.00 GPA

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MCO	431	Media Entrepreneurship	Familiarizes students with media entrepreneurship and innovation in a quickly changing digital media environment. Students study the principles of entrepreneurship and innovation, assess their own tolerance for risk, evaluate opportunity and market conditions, and learn about various revenue models for entrepreneurial enterprises.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only MCO 431 or MCO 494 (Media Entrepreneurship) or MCO 556 OR Visiting University Student
MCO	433	Soc Media Camp,Engmt & Rsrch	Learn how to attract, engage and grow audiences on social media platforms through both organic and paid social media campaigns, and research social media behavior and performance. Includes evaluating organizations' existing social media audiences, identifying opportunities for audience growth, creating content and campaigns for specific social platforms, measuring the impact of social media content, and developing an organizational strategy for managing social media across an enterprise.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Journalism and Mass Comm undergraduate major or minor or Interdisciplinary Studies BIS major; MCO 307 w/ C or better; minimum 2.00 GPA; Credit is allowed for only MCO 433, MCO 436, MCO 437 or MCO 563 OR Visiting University Student
MCO	434	Search Engine Rsrch & Strategy	Learn how to research, attract and grow audiences through the strategic use of search engine optimization and search engine marketing. Includes search trend research, keyword research, user behavior, SEO (search engine optimization), tagging and coding for on-page SEO, SEM (search engine marketing), competitive analysis, domain authority and pay-per-click advertising.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 434 or MCO 436 or MCO 437 or MCO 562 OR Visiting University Student
MCO	436	Audience Research and Behavior	Prepares students to undertake or manage research on customers, employees, readers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data, so the course introduces new techniques and tools for developing audience insights, as well as traditional qualitative and quantitative research methods.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 433 or MCO 434 or MCO 436 or MCO 564 OR Visiting University Student
MCO	437	Aud Acquisition & Engagement	Students learn how to attract and grow audiences on established and emerging digital platforms. Students discover tactics and strategies for targeting, obtaining and engaging audiences by leveraging social media, search marketing and SEO, digital content, ecommerce, digital advertising and others.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit allowed for only MCO 433 or MCO 434 or MCO 437 or MCO 562 or MCO 563 OR Visiting University Student
MCO	438	Digital Audience Analysis	Students discover how to access, manipulate and translate audience data. Students learn how to mine data from Web sites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. By working with real audience data, students receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School undergraduate major or minor, or Interdisciplinary Studies BIS major; MCO 307 with C or better; minimum 2.00 GPA; Credit is allowed for only MCO 438 or MCO 565 OR Visiting University Student
MCO	439	Digital Audience Growth	Capstone challenges students to synthesize their digital audience knowledge and skills acquired in the previous courses through an applied project. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s) with C or better: Digital Audience BS major or minor; MCO 307; (MCO 433 and 434) or (MCO 436 and 437); MCO 438; minimum 2.00 GPA; Credit is allowed for only MCO 439 or MCO 566 OR Visiting University Student
MCO	450	Visual Communication	Theory and tradition of communication through the visual media with emphasis on the continuity of traditions common to modern visual media.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	HU	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	456	Political Communication	Explores the intersection of media and politics and examines how the political system works and how journalists cover politics, political campaigns and elections. Students gain knowledge of opinion polling, debates, campaign finance, the party system, political communication, issues coverage, fact checking, crowd sourcing and more.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	460	Race, Gender, and Media	Readings seminar designed to give students a probing examination of the interface between AHANA Americans and the mass media in the United States.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	C	Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only AFR 460 or MCO 460 OR Visiting University Student

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MCO	465	Sports and Media	Designed for aspiring journalists and media users, explores why great sports journalism is essential to our society. Establishes the goals, dreams, and expectations for sports journalism and introduces ethical philosophy and popular ethical models and decision-making tools. Students then apply these tools to sports journalism.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	470	ExploringBusinessOfJournalism	Exposes students to broad media management problems. Focuses on how essential the bottom-line and quality journalism are to the entire journalistic and mass communication enterprise; helps students think about how to balance those two concerns.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): minimum 2.00 GPA; Credit is allowed for only JMC 473 or JMC 474 or MCO 470 or MCO 494 (Exploring the Business of Journalism) OR Visiting University Student
MCO	473	Sex, Love, Romance-Mass Media	The role of the mass media in constructing and/or reinforcing unrealistic mythic and stereotypic images of sex, love, and romance.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3	SB	Prerequisite(s): minimum cumulative 2.00 GPA
MCO	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6		Prerequisite(s): Barrett Honors student
MCO	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MCO	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): minimum 2.00 GPA OR Visiting University Student
MCO	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-7		
MCO	502	Journalism Skills	Basic journalism skills for print, digital and broadcast. Significant hands-on practice writing and reporting stories on deadline as well as an immersion in the principles and practices of good journalism.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	8		Prerequisite(s): Cronkite School masters or PhD student
MCO	503	Media Law	Examines the philosophical and legal aspects of press freedom with an emphasis on the First Amendment from 1791 to present.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School master's student; Credit is allowed for only JMC 402 or MCO 403 or MCO 503
MCO	504	Journalism Skills Lab	Leadership is essential for the future of journalism; it is also essential for your career success. Through readings, personal reflection, discussion, guest speakers and hands-on class activities, explores what makes a good leader, how to cultivate good leadership as individuals and a cohort, and how to identify and seize leadership opportunities at the Cronkite School and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Master of Mass Communication student or Sports Journalism MA student; Credit is allowed for only MCO 504 or MCO 598 (Journalism Skills Lab)
MCO	505	Depth Reporting	Covers in-depth and investigative reporting and writing techniques. Students produce long-form, deeply sourced articles and produce multimedia with the goal of publication.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	510	Data Journalism	Students use data to tell stories, employing computer spreadsheets, database software, mapping programs and statistical techniques and learn how these tools can be used across a wide variety of beats and stories. Students negotiate with government officials for public records and use the internet and other online sources to find information and sources for stories.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	512	Humphrey Seminar	Identifies, examines and exports role models of leadership in the field of global communications. Explores leadership issues in journalism, strategic communications and management under different cultural and political systems.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; minimum 2.50 GPA; Credit is allowed for only JMC 406 or JMC 494 (Humphrey Seminar) or MCO 512 or MCO 598 (Humphrey Seminar)
MCO	515	Advanced Online Media	Builds on and expands basic multimedia knowledge. Students leave with heightened Web-language literacy and visual sophistication; fluency with multiple digital tools that create, publish and distribute content; and the requisite storytelling skills to produce works of a professional level on diverse online and mobile platforms. Draws on Adobe Creative Cloud software and other current tools.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 460 or MCO 515

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MCO	517	Public Relations Campaigns	Enables students to synthesize and apply the theories, principles and techniques of public relations. This body of knowledge includes research, planning techniques, types of budgets, organizational systems, management styles, campaign components, types of campaigns, technology, ethics, diverse channels of communication and target audiences. The student develops an in-depth understanding of a client's needs; conducts primary and secondary research; works with a client in a team-based approach to prepare a comprehensive campaign proposal to address the client's problem or issue; designs and develops media products for client; formally presents the proposal to the client and the class and analyzes, discusses then responds to public relations case studies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA or Master of Mass Communication student; Credit is allowed for only MCO 517 or MCO 598 (Public Relations Campaigns)
MCO	519	Strat Comm Leadership & Ethic	Communications and the ability to tell an organization's story to a variety of audiences and stakeholders is a key part of corporate strategy. Provides a broad understanding of ethical communications practices in agency and corporate settings, and includes instruction in reputation management, corporate communications, brand management, and stakeholder engagement in a digital context. Especially useful for future communications professionals and those who will work with them such as journalists and business leaders.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite master's student; Credit is allowed for only JMC 419 or MCO 519
MCO	521	News Producing	Principles of broadcast news producing, delivered via a combined lecture/lab experience. Students complete assignments based on editorial judgment, technical skills and industry awareness and develop strategies for total newsroom management. In the process, students build confidence in producing news content and newscasts under deadline pressure and are prepared for a variety of producer-related roles in professional newsroom environments.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; Credit is allowed for only MCO 521 or MCO 598 (News Producing)
MCO	525	21st-Century Media Org&Entrpre	Focuses on the future of journalism, the future of journalism business organizations and entrepreneurship, new media experiences, online solutions to popular media problems, financial realities of the media, and media innovation.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	526	Advanced Issues Sports & Media	Through critical analyses of major contemporary issues in sports and media, provides tools and information needed to more fully engage in and become fluent with the main conversations about the business, technology and the future of sports journalism.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA major
MCO	529	Ethics Diversity Sports Journ	Explores the connection among sports media, journalism and society in an ethical and issue-oriented context. Students gain an understanding of the issues and ethics of the sports journalism profession while becoming better and more informed consumers of sports media. At the end of the course students have a better understanding of the importance of sports in our society and how that is reflected in coverage by local and national media outlets.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA student
MCO	530	Hist,Phil&Ethics of Journalism	Explores contemporary news media issues in a seminar setting. Critically analyzes historical and contemporary dilemmas in journalism ethics using a case study approach.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student
MCO	531	Advanced Broadcast Reporting	Teaches news and information practices of networks and local television stations. Students report, write and edit broadcast packages with an emphasis on video.	N	LEL	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student
MCO	533	Adv Span-Lang Brdcst Rprt	Students produce bilingual television packages on a wide range of issues of interest to Latino audiences. Students also report and produce an occasional Spanish-language newscast. Opportunity to develop and master advanced reporting, interviewing, visual storytelling and writing skills in English and Spanish needed to obtain an entry-level position in a small/medium market local television newsroom.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only MCO 533 or MCO 598 (Advanced Bilingual Broadcast Reporting)
MCO	534	AdvancedSpanish-LangReporting	Students get experience reporting and writing stories on topics related to Latinos in the U.S. Requires ability to write and report in Spanish, although students do not have to be proficient.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 434 or JMC 494 (Advanced Bilingual Reporting) or MCO 534 or MCO 598 (Advanced Bilingual Reporting)

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MCO	535	Latino and Transnational Issue	Focuses on some of the most pressing and controversial issues of the day that are taking place in the Southwest borderlands. Successful students move on to the Borderlands Initiative depth reporting project in the spring semester that includes an international reporting experience.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	536	Public Relations Research	Teaches the importance and practice of research in a public relations context. Students conduct research using qualitative and quantitative methods and analyze data to understand implications within a specific communications context. They also critically evaluate published academic and professional research.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication student; Credit is allowed for only MCO 536 or MCO 598 (PR Research)
MCO	540	Sports Reporting	Hands-on experience reporting, writing, script writing and video producing sports stories. Students report, write and produce professional-level, clear, well-reported, accurate stories and video packages about athletes and sports stories newsworthy in the Valley and beyond.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Sports Journalism MA student; MCO 502
MCO	541	Narrative Writing & Reporting	Students learn the elements of narrative journalism--structure and narrative arc, the use of character, description, dialogue and quotes, context and background, and pacing--and apply them to a long-form story they report and write during the semester.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School masters student; MCO 502 with C or better; Credit is allowed for only JMC 441 or JMC 494 (Narrative Writing) or MCO 541 or MCO 598 (Narrative Writing)
MCO	544	Accountability in Journalism	Seminar about accountability journalism in the digital age: its history, mission, values, techniques, ethics and future. Students research and analyze notable recent examples of accountability journalism and produce accountability story ideas about water quality and supply in Arizona.	N	SEM	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): Cronkite School masters or PhD student; Credit is allowed for only JMC 444 or JMC 494 (Accountability Journalism) or MCO 544 or MCO 598 (Accountability Journalism)
MCO	545	Techniques Investigative Rpt	Student teams work under the direction of a veteran investigative journalist, learning how to do research and reporting on projects to expose wrongdoing, focusing on public records, databases, in-depth interviews and how to conceptualize, organize and tell these stories on multiple platforms.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): MCO 502 with C or better; Credit is allowed for only MCO 502 or MCO 545
MCO	546	News 21 Seminar	Prepares students for the Carnegie-Knight News21 investigative journalism summer fellowship. Immerses students in the selected topic for the annual investigation, conducting deep research, generating data and public records, interviewing experts, developing sources and producing initial reports and multimedia elements. Considers students who perform well in the seminar for paid summer fellowships during which they travel the country to complete their reporting and produce the annual project on an issue of national import.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication on-campus master's student; MCO 502 with C or better; Credit is allowed for only JMC 446 or JMC 494 (News 21) or MCO 546 or MCO 598 (News 21 Seminar)
MCO	548	Non-Narr Video Storytelling	Teach students how to create video pieces that effectively communicate a story, information or concept to your audience in non-narrative form that is engaging, interesting and intelligent. Focuses on the various forms of non-narrative storytelling to gain experience creating both longer and shorter pieces with DSLR cameras, advanced editing and graphics that are appropriate to the intended platform. Students learn how to shoot video and stills with a DSLR camera and when to use each in video creation, while advancing skills as a video editor and graphic designer. Students broaden their creativity and range as a video producer in the areas of journalism and mass communication.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Comm or Sports Journalism MA stdnt; MCO 502 w/ C or better; Credit for only JMC 448 or JMC 494 (DSLR Vid Storytelling or Non-Narr Vid Storytelling) or MCO 548 or MCO 598 (DSLR Vid Storytelling or Non-Narr Vid Storytelling)
MCO	550	Issues in Coverage of Bus&Econ	Teaches the basics of business and economics reporting, one of the fastest-growing areas of journalism. Students learn what skills are needed to cover business and economic stories as well as how private companies operate and the factors that drive the economy. They also learn about opportunities in the field and hear from leaders in business journalism.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School of Journalism and Mass Communication master's or PhD student
MCO	551	Better Business Reporting	Provides training and practice in reporting and writing stories related to business and the economy. Students learn tools and techniques to enhance their coverage of various kinds of business stories, from profiles to financial reports. They learn best practices for pitching stories, cultivating sources, conducting effective interviews, structuring stories, using appropriate narrative elements and translating complex information for a general audience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better

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MCO	552	Data in Business Journalism	Students learn how to find powerful business and economic data from U.S. sources such as the Census Bureau, the Bureau of Labor Statistics, the Securities and Exchange Commission and the Federal Reserve. Examines international data sources of the United Nations, the World Bank, the European Union and the statistics offices of various countries. Covers basic mathematical and statistical formulas for working with business data, how to find stories in data using tools such as Microsoft Excel and Google Fusion Tables and how to create basic data visualizations that are useful for understanding business and economic trends.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Business Journalism MS student; MCO 550 with C or better
MCO	553	Reporting on Business and Econ	Trains students in the basics of reporting about business and the economy. They learn to tell the stories behind companies, people and money, while improving their competency in using numbers in stories. Students have the opportunity to have stories appear in print, online or broadcast.	N	LEL	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 OR Business Journalism MS student
MCO	555	Digital Media Entrepreneurship	Students identify a marketable idea and transform it into a product and/or company. In the process, they learn about key concepts of entrepreneurship and practice skills that they can employ as entrepreneurs themselves. Students are exposed to a range of national and regional entrepreneurs and emerge with a deeper understanding of entrepreneurship's importance within the media and communications landscape.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; Credit is allowed for only JMC 455 or JMC 494 (Digital Media Entrepreneurship) or MCO 555 or MCO 598 (Digital Media Entrepreneurship)
MCO	556	Media Entrepreneurship	Familiarizes students with media entrepreneurship and innovation in a quickly changing digital media environment. Students study the principles of entrepreneurship and innovation, assess their own tolerance for risk, evaluate opportunity and market conditions, and learn about various revenue models for entrepreneurial enterprises.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student; Credit is allowed for only MCO 431 or MCO 494 (Media Entrepreneurship) or MCO 556
MCO	557	Advanced Radio Reporting	Students report and produce long-form radio stories in commercial and public radio formats. They develop planning, writing, voicing and detailed editing skills in a variety of radio broadcast formats, including general news and business as well as hard news and feature reporting.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student; MCO 502 with C or better; Credit is allowed for only JMC 457 or JMC 494 (Advanced Radio Reporting) or MCO 557 or MCO 598 (Advanced Radio Reporting)
MCO	560	Arizona Media Law	Case study approach to first amendment issues, media access, libel, confidentiality, and invasion of privacy as applied to media organizations in Arizona.	N	LEC	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	561	Defining the Digital Audience	Who are the people who make up digital audiences? How do digital audiences behave? And why is it important to research, identify and monitor digital audiences and their engagement with your organization? Covers the very essence of the digital audience, exploring how community, consumer, social psychology and theory converge on digital platforms and social networks. Through case-study analyses, teaches how audiences differ across industries and platforms, the elements that engage or dissuade users, and how organizations use audience data to manipulate growth strategies.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	562	Srch Engine Strat Dig Aud Acq	How to attract and grow audiences through strategic use of search engine marketing. Includes user search behavior, SEO (search engine optimization), tagging and coding for on-page SEO, SEM (search engine marketing), keyword research, competitive analysis, domain authority and pay-per-click advertising.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Dig Aud Strat MS; Dig Aud cert, Investigative Journ MA, Journ & Mass Comm PhD, Global Mgt (Dig Aud Strat) MGM, Mass Comm MMC or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 434 or MCO 437 or MCO 562
MCO	563	Social Media Campaign & Engage	How to attract, engage and grow audiences on social media platforms through both organic and paid social media campaigns. Includes evaluating an organization's existing social media audience, identifying opportunities for audience growth across social media platforms, designing and generating content for specific platforms, measuring the impact of social media content, and developing an organizational strategy for managing social media across an enterprise.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student or Global Management (Digital Audience Strategy) MGM student; MCO 561 with B or better; Credit is allowed for only MCO 433 or MCO 437 or MCO 563

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MCO	564	Digital Aud Research&Behavior	Provides skills to undertake research on digital audiences, customers, viewers, influencers and others with whom an organization seeks to communicate or build relationships. Digital data have profoundly reshaped how organizations mine and interpret audience data. Digital audience research as a subset of social research. Overviews both traditional and newer research methods for developing audience insights.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Cronkite School graduate student or Global Management (Digital Audience Strategy) MGM student; MCO 561 with B or better; Credit is allowed for only MCO 436 or MCO 564
MCO	565	Digital Audience Analytics	Provides skills to access, manipulate and translate audience data. How to mine data from websites, social networks, apps, email campaigns and video platforms, and how to use analysis tools and techniques to translate metrics into valuable, actionable insights that drive engagement strategies and business decisions. Works with real audience data to receive hands-on analysis and reporting experience.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prereq(s): Bus Journ MS, Digtl Aud Strategy MS; Digtl Aud cert, Investigative Journ MA, Journ&Mass Comm PhD, Mstr Global Mgt (Digtl Aud Strategy), Mstr Mass Comm or Sports Journ MA stdnt; MCO 561 w/B or better; Credit allowed for only MCO 438 or MCO 565
MCO	566	Digital Audience Management	Challenges students to synthesize their digital audience knowledge and skills acquired in previous courses through a culminating experience. Working with a real client and live, ever-changing data, students work to increase and engage the client's digital audience, executing a growth campaign from audience identification, targeting and strategy development to implementation, engagement and measurement.	N	LEC	N	GNA	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Prerequisite(s): Digital Audience Strategy MS student; MCO 561 with B or better; MCO 562 with C or better; MCO 563 with C or better; MCO 564 with C or better; MCO 565 with C or better; minimum 3.00 GPA; Credit is allowed for only MCO 439 or MCO 566
MCO	570	Master Mass Comm Capstone	In this culminating program, students get an immersive experience in reporting and producing news across platforms. Students may choose the Cronkite News Phoenix Bureau, with opportunities to report on public affairs, borderland and Latino issues or business and the economy or work as digital producers. Students also may choose Cronkite News -- Broadcast, where students report and produce a half-hour weeknight newscast. Other options are sports bureaus in LA or Phoenix, the Cronkite News Washington Bureau, the New Media Innovation and Entrepreneurship Lab, the Public Relations Lab, the Public Insight Network and the Carnegie-Knight News21 investigative multimedia reporting program. Students work four full days a week under the supervision of a faculty member in a newsroom setting.	Y	LEL	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3-9		Prerequisite(s): Master of Mass Communication or Sports Journalism MA student
MCO	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): Investigative Journalism MA, Sports Journalism MA, Master of Mass Communication, Business Journalism MS, Digital Audience Strategy MS, Journalism and Mass Communication PhD, or Digital Audiences certificate student
MCO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-4		Prerequisite(s): Cronkite School of Journalism and Mass Communication graduate student
MCO	710	Research Methodology Mass Comm	Identifies research problems in mass communication and provides an overview of questionnaire construction as well as attention to survey, historical, content analysis, experimental and legal research methods.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism Mass Communication PHD students
MCO	711	Critical,Hist,Legal Research	Critical, legal and historical methods necessary to conduct qualitative mass communication research.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PhD student

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MCO	712	Freedom of Expression Theory	Examines philosophical and legal aspects of press freedom; emphasizes First Amendment theory evolution from 1791 to present.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisite: Journalism Mass Communication PhD student
MCO	720	Mass Communication Theory	Analyzes various theoretic models of mass communication with emphasis on the applications of these theories to professional communication.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PhD student
MCO	722	Philosophy of Mass Comm	Mass media as social institutions, particularly interaction with government and public; emphasizes criticism and normative statements. Seminar. Prerequisite: Journalism and Mass Communication PhD student.	N	SEM	N	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	3		Pre-requisites: Journalism and Mass Communication PhD student
MCO	755	Research Apprenticeship	Students and faculty work on a research project with the expected outcome of a scholarly publication.	N	RSC	Y	OPT	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Pre-requisite: Journalism and Mass Communication PhD student
MCO	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MCO	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Walter Cronkite School of Journalism and Mass Communication	Walter Cronkite School of Journalism and Mass Comm	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MDC	211	Intro to Digital Sound	Examines how technology is used as listeners, creators, critics, remixer, and a wide variety of other roles to participate in and gain a deeper understanding of music and its role in our lives.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for MDC 211 or MUE 294 Open Minds, Digital Ears
MDC	311	Comp Perf Hybrid Ens	Provides opportunities to perform music in a variety of digital and hybrid contexts using both physical and digital instruments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MDC 311 or MUE 394 (Performing in Digital and Hybrid Music Groups)
MDC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	411	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MDC 311; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MDC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MDC	511	Advanced Interactive Sound	Explores the development of interactive music systems. Covers a variety of sound synthesis methods with particular emphasis as to how they can be used in real-time sound creation. Covers techniques for sensing such as computer vision, sound analysis, tangible interfaces and 3D sensing.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only AME 411 or AME 511 or MDC 411 or MDC 511 or AME/MDC 494 (Advanced Interactive Sound) or AME/MDC 598 (Advanced Interactive Sound)
MDC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MDL	410	Laboratory Leadership	Clinical lab leadership and management. Applies the principles of personnel management and supervision, allocation of resources, and staff communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite: Admission to Medical Laboratory Science program

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MDL	420	Advanced Clinical Urinalysis	Theory and applications of principles in urinalysis with emphasis on the etiology, pathophysiology, and clinical manifestations of renal and other metabolic defects as reflected by the analysis of urine and other body fluids.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	2		Pre-requisites: BIO 182: Admission to Medical Laboratory Science program
MDL	421	Urinalysis Body Fluid Adv Prac	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of urine and body fluids, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 420 with C or better
MDL	430	Advanced Hematology	Theory and application of principles in hematology, with emphasis on techniques to evaluate blood dyscrasias and analyze body fluids. Etiology, pathophysiology, clinical manifestations, and treatment of blood dyscrasias/hemostatic defects.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182: Admission to Medical Laboratory Science program
MDL	431	Hematology Adv Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of blood samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	1		
MDL	440	Advanced Immunohematology	Theoretical and practical application of clinical immunology and immunohematology. Emphasizes serological techniques that aid disease diagnosis and blood donor selection.	N	LEL	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisites: BIO 182; MIC 205; Admission to Medical Laboratory Science program
MDL	441	Immunohematology Immuno Pract	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis.	N	PRA	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Medical Laboratory Sciences BAS major; MDL 440 with C or better
MDL	450	Advanced Clinical Microbiology	Theoretical and practical application of clinical microbiology. Emphasizes identification of pathogenic organisms, molecular techniques, mycology, virology, and parasitology.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	451	Clinical Micro Practicum	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 450 with C or better
MDL	460	Advanced Clinical Chemistry	Theoretical and practical applications of clinical chemistry with particular emphasis on correlation of test results to disease status, statistical analysis, pre-analytical testing, critical values, calibration, and trending and tracking of quality control results.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MDL 410; MDL 420; MDL 421; MDL 430; MDL 431; MDL 440; MDL 441 OR Visiting University Student
MDL	461	Clinical Chem Practicum	Correlation and application of theory in a supervised clinical laboratory. Processing, analysis, and evaluation of samples, emphasizing manual and automated techniques of specimen analysis routinely used clinical chemistry testing.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): MDL 460 with C or better
MED	100	Intro to Medical Studies	Presents basic concepts related to sciences, social sciences, humanities, statistics and other topics related to medical and health studies. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		
MED	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	300	Hist Contemp Issues in Health	History of medicine in the modern world and its relationship to contemporary issues in medicine with emphasis on the broader context of ways in which technology, personalized medicine, genomics, ethical issues and shared decision making between patients and providers have evolved.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours OR Visiting University Student
MED	320	Appl Medical/HealthCare Ethics	Integrates the theory and practice of ethics within health-related disciplines and the application of bioethics by health science professionals, including health disparities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	HU	Prerequisite(s): minimum 30 hours OR Visiting University Student
MED	325	Elem Hospice & Palliative Care	Introduces hospice and palliative care through direct experience communicating and working with persons on hospice and the nurses, physicians, social workers and chaplains who provide care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 30 hours
MED	375	Alzheimer's & Other Dementias	Covers Alzheimer's disease and related dementias through discussions with health care professionals and direct experience working with persons with Alzheimer's disease and their caregivers.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only MED 375 or MED 394 (Intro Dementia & Alzheimer's Disease) OR Visiting University Student
MED	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		

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MED	417	Impact of Violence on Health	Approaches violence from a public health perspective, using the Centers for Disease Control, National Center for Injury Prevention and Control, as a benchmark. Applies an interprofessional approach to violence, to include medicine, nursing, law, law enforcement, social work, psychology, economics and education, among others. Discusses principles of epidemiology, underlying etiologies and sequelae and evidence-based strategies for prevention throughout the course.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
MED	445	Prev & Mgmt of Chronic Disease	The United States spends more on health care than any other developed country in the world, yet our health care outcomes are not superior. We face an epidemic of chronic diseases which are the leading causes of mortality and disability in the U.S., despite being highly preventable. Examines chronic disease in the U.S. and provides an overview of prevention and management with a focus on population health and social determinants of health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
MED	450	Leadership and Professionalism	Leadership, leadership theory and inter-professionalism in practice. Applies didactic content to case studies and activities designed to promote critical thinking and effective teamwork. Solidifies concepts through the use of assignments, exams and discussions.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 401 or MED 450 OR Visiting University Student
MED	475	Palliat Care: Managing Illness	Includes reading, discussion and study on palliative care including national trends, international models, ethics, mental health issues, business and workforce issues, boundaries between patients and caregivers, the intersection between humanities and palliative care, and the future of the field. Honors contracts are available.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only MED 475 or MED 494 (Advances in Palliative Care) or MED 494 (Palliative Care Managing Complex Serious Illness) OR Visiting University Student
MED	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 3.00 GPA
MED	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
MED	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	PRA	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
MED	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
MED	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
MEE	322	Structural Mechanics	Three-dimensional stress and strain analysis, generalized Hooke's Law, failure theories for ductile and brittle materials, combined loading, stress concentrations, energy methods, mechanical vibrations and structural dynamics, fatigue.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE major; MAE 213 with C or better; MAE 384 with C or better; MAT 267 or 272 with C or better; Credit is allowed for only AEE 325 or MEE 322 OR Visiting University Student
MEE	323	Computer-Aided Engineering II	Introduces finite-element analysis, pre- and postprocessing, solving problems with FEA.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2		Prerequisite(s) with C or better: Aerospace Engineering BSE major: AEE 325 (or MAE 325 or 394 - Aerospace Structures and Materials); MAE 214 or Mechanical Engineering BSE major: MAE 214; MEE 322 (or MAE 322) OR Visiting University Student
MEE	324	Structural Mechanics Lab	Lab companion where students perform supervised experiments to analyze stress and strain for materials loaded in bending, torsion, combined and torsion, tensile tests of materials until failure, stress concentrations, and structural dynamics. Required for mechanical engineering	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Pre- or corequisite(s): MEE 322 with C or better if completed OR Visiting University Student
MEE	340	Heat Transfer	Conduction, convection, radiation and phase change heat transfer processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Aerospace or Mechanical Engineering BSE major; MAE 241 with C or better; MAE 242 with C or better; MAE 384 with C or better OR Visiting University Student

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MEE	342	Principles Mechanical Design	The design process; conceptual and embodiment design of mechanical elements; form synthesis; material selection, failure modes, manufacturability tolerances, common mechanisms and machine elements.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Mechanical Engineering BSE major; MAE 202 w/ C or better; MEE 322 w/ C or better; MSE 250 w/ C or better; Pre- or corequisite(s): MEE 323 w/ C or better if completed; MEE 340 w/ C or better if completed OR Visiting University Student
MEE	351	Manufacturing Processes	Production technique and equipment. Casting and molding, forming, machining, joining and assembly, computer-integrated manufacturing, rapid prototyping, and electronics manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 213 with C or better; MSE 250 with C or better OR Visiting University Student
MEE	434	Internal Combustion Engines	Performance characteristics, combustion, carburetion and fuel-injection, and the cooling and control of internal combustion engines. Computer modeling.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 340 or MEE 482 with C or better; Credit is allowed for only MEE 434 or MAE 598 (Internal Combustion Engines) OR Visiting University Student
MEE	440	Renewable Energy-Mech Systems	Renewable energy systems are energy conversion systems that rely on naturally replenishing flows of energy. Considers the foundational principles behind many renewable energy systems and application of these principles to practical systems. Emphasizes covering the following energy systems, some only at an introductory level and some with significant depth: solar, wind, geothermal, biomass, hydropower, energy storage, electric power generation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; MEE 340 with C or better; Credit is allowed for only MEE 440 or MAE 582 or MAE 494 (Renewable Energy Engineering) or MAE 598 (Renewable Energy Engineering)
MEE	441	Wind Energy	Wind energy systems convert kinetic energy in the wind into electrical energy. Focuses on flow machines, including for example, aerodynamics and fluid dynamics. Begins with wind resource assessment utilizing atmospheric boundary layer science and then proceeds to computational fluid dynamics to understand the tools of modern wind resource assessment. Includes applications of the Navier-Stokes equations and some basics from turbulence theory. Resource assessment also includes modern remote sensing techniques such as lidar, radar and in situ instrumentation. Also includes discussions from current events and policy. Requires a background in applied experimental statistics, thermodynamics or aerodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Engineering BSE major; AEE 360 or MEE 340 with C or better; MAE 301 with C or better; Credit is allowed for only MAE 494 (Wind Energy) or MAE 579 or MAE 598 (Wind Energy) or MEE 441 OR Visiting University Student
MEE	445	Energy Systems Design I	Applies mechanical engineering principles and techniques to modeling, analysis and synthesis of energy systems and components. Design and optimization. Capstone design project. First part of an energy systems design course focusing on the design of compact heat exchangers and fluid flow systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1		Prerequisite(s) with C or better: Mechanical Engr (Energy & Environment) BSE major; MAE 301; MAE 400; MEE 340; MEE 342; Pre- or corequisite(s): MEE 482 with C or better if completed; Credit is allowed for only MEE 445 or MEE 494 (Energy Systems Design I)
MEE	446	Energy Systems Design II	Applies mechanical engineering principles and techniques to modeling, analysis, and synthesis of energy systems and components. Design optimization. Design project.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	2		Prerequisite(s): Mechanical Engineering (Energy and Environment) BSE major; MAE 400 with C or better; MEE 342 with C or better; MEE 445 with C or better; MEE 482 with C or better; Credit is allowed for only MEE 446 or MEE 494 (Energy Systems Design II)
MEE	472	Intermediate Fluid Mechanics	Second course covering fundamental concepts relating to engineering fluids. Flow meters, airfoil and wing aerodynamics; pipe flow; normal and oblique shock waves. Nozzles. Open Channel Flow. Turbomachinery flows including performance curves and maps, scaling and affinity laws. Elective for Aerospace Engineering and Mechanical Engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; senior standing; MAE 242 with C or better; MAE 384 with C or better
MEE	482	Intermediate Thermodynamics	Applied thermodynamics; gas mixtures, psychrometrics, property relationships, power and refrigeration cycles, and reactive systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MAE 240 or 241 with C or better; Credit is allowed for only MAE 382 or MAE 570 or MAE 598 (Thermodynamics) or MEE 482 OR Visiting University Student

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MEE	488	Mech Engineering Design I	Conceptual and embodiment design; modeling; rapid prototyping. Team project. MEE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s) with C or better: Mech Engr major, MAE 301; MAE 318; MAE 384; MEE 323; MEE 340; MEE 342; Pre- or corequisite(s): MAE 400 with C or better if completed
MEE	489	Mech Engineering Design II	Detail design; fabrication and testing. Team project. MAE 488 and 489 must be taken in consecutive semesters.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MEE 488 with C or better
MEE	491	Experimental Mechanical Engr	Experimental and analytical studies of phenomena and performance of fluid flow, heat transfer, thermodynamics, refrigeration, and mechanical power systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	3	L	Prerequisite(s): Mechanical or Aerospace Engr major; ENG 101, 105, or 107 w/ C or better; MAE 301 w/ C or better; MAE 318 w/ C or better; MEE 340 w/ C or better; Pre- or corequisite(s): MEE 342 w/ C or better if completed OR Visiting University Student
MEE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Mechanical and Aerospace Engineering Program	1-4		
MET	212	Appl Engr Mechanics:Dynamics	Masses; motion kinematics; dynamics of machinery.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 211 (or CON 221 or MAE 212); MAT 266 (or MAT 271)
MET	213	Applied Mechanics of Materials	Stress, strain, stress-strain relations. Axial, shear, bending, torsional and combined loads and deflections.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 211 or CEE 210, or MAE 212
MET	214	Appl Mechanics/Materials Lab	Measurements of loads and deformations relating stress and strain in axial, shear, bending, torsional, and combined loading configurations.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisites: MET 213, MAE 213, MSE 211, CON 223, CEE 213 OR be co-enrolled in MET 213
MET	230	Intro to Engineering Materials	Introduces materials and their properties, emphasizing basic concepts and structures and how these properties relate to manufacturing and design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	2		
MET	300	Applied Material Science	Principles of materials science emphasizing concepts relevant to design, manufacturing, and use. Covers metals, polymers, ceramics, and composites.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR MSE 250 OR Applied Science (Manufacturing Technology & Management) major; MET 230
MET	309	Nondestructive Test/Qual Assur	Part and material inspection using metrology and nondestructive inspection tools and techniques. Theory and application with use of pertinent standards.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	321	Intro to Automotive Engr	Engineering principles and the design of ground vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 212. Pre- or corequisite(s): MET 213, 340
MET	331	Machine Design I	Applies mechanics to design of machine elements and structures. Stress analysis, failure modes, tolerances, cylindrical fits, and shaft design.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 213 (or CON 223 or MAE 213)
MET	344	Casting and Forming Processes	Analyzes various forming processes to determine load requirements necessary for a particular metal-forming operation. Information used to select equipment and design tooling. Metal casting processes and design of castings. Introduces powder metallurgy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	345	Advanced Manufacturing Process	Material removal processes emphasizing advanced turning, milling, and machinability studies using cutting tools. CNC programming for machining and turning centers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EGR 218 OR EGR 294 (Engineering Materials & Manufacturing) OR MET 231 OR Applied Science (Manufacturing Technology & Management) major
MET	351	Introduction to Automation	Introduces automation. Topics include assembly techniques, fixed and flexible automation systems, robots, material-handling systems, sensors, and controls.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: EST 210
MET	396	Professional Orientation	Topics related to a successful career in engineering technology industry. Includes safety, life-long learning, ethics, and career planning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Pre-requisite: Junior or Senior standing
MET	401	Quality Assurance	Statistical quality control methods, design of experiments, sampling, gauge requirements and specifications, use of quality assurance tools.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: STP 420 (or APM 301); Credit is allowed for only MET 401 or 501
MET	409	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Junior or Senior standing; Credit is allowed for only MET 409 or 509
MET	410	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisite: MET 341; Credit is allowed for only MET 410 or 510

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MET	415	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 341; STP 420; Credit is allowed for only MET 415 or 515
MET	416	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3	CS	Pre-requisite: MET 341; Credit is allowed for only MET 416 or 516
MET	418	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300 or MSE 250. Credit is allowed for only MET 418 or 518
MET	421	Vehicle Powertrains	Internal combustion engine design, performance and operation, and power transmission systems within vehicles.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321
MET	423	Veh Chassis & Running Gear Des	Design and manufacture of chassis, structures, steering and braking systems and components, wheels and tires, suspension systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 321; MET 331
MET	424	Vehicle Electrical Systems	Vehicle electrical power and signal systems, computer control and analog control systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; MET 321; MET 421
MET	426	Vehicle Thermal Design	Heat management in vehicle systems, including thermal design of engine and transmission cooling systems, cabin heating, and air conditioning.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 421; Pre/Co-requisite: MET 434
MET	427	Vehicle Sys Integratn & Testng	Systems engineering principles. Design of the interfaces between vehicle subsystems. Testing of integrated systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 423; MET 424
MET	432	Engineering Thermo-Fluids II	Thermodynamic analysis of mixtures and power cycles. Design and analysis of fluid systems, conduction heat transfer, and introduction to convection and radiation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 340 with C or better; Credit is allowed for only EGR 432 or MET 432 OR Visiting University Student
MET	434	Engineering Thermo-Fluids III	Transient conduction, convection and radiation heat transfer, heat exchangers, thermo-fluid systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 340
MET	438	Machine Design II	Applies mechanics to the design of machine elements and structures. Emphasizes basics of gears, springs, brakes, clutches, and bearings.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisites: MET 331 OR Fulton Schools of Engineering graduate student
MET	440	Finite Element Analysis	Analyzes machine elements, frames, and aerospace structures employing finite element analysis and software. Includes sensitivity analysis and estimating accuracy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 331
MET	442	Specialized Production Process	Nontraditional manufacturing processes, emphasizing EDM, ECM, ECG, CM, PM, HERF, EBW, and LBW.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): EGR 218 (or EGR 294 [Engineering Materials & Manufacturing] or MET 231). Credit is allowed for only MET 442 or MET 502
MET	443	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 345; Credit is allowed for only MET 443 or 514
MET	444	Production Tooling	Design and fabrication of jigs, fixtures, and special industrial tooling related to manufacturing methods.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre- or corequisite(s): MET 309. Credit is allowed for only MET 444 or MET 504
MET	455	Automation Systems Integration	Applies sensors and devices and their integration with PLCs and computers into automated devices and systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 351
MET	460	Capstone Project I	Group project designing, evaluating, and analyzing components, assemblies, and systems. Develop products/manufacturing techniques demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: MET 300; 331; 340; 345
MET	461	Capstone Project II	Small-group projects applying manufacturing techniques, with emphasis on demonstrating state-of-the-art technology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): MET 460
MET	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-12		
MET	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Engineering Programs	1-3		
MET	501	Statistical Qlty Control Appls	SPC problem-solving techniques for implementation in industrial setting; design and analysis of experiments.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 401 or 501
MET	504	Appl of Production Tooling	Design and fabrication of fixtures, jigs, templates, and specialized industrial tooling for manufacturing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 444 or 504
MET	509	Applied Engineering Economics	Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite(s): degree- or nondegree-seeking graduate; credit is allowed for only MET 409 or 509
MET	510	Manufacturing Resource Mgmt	Measures like cycle time, throughput, capacity, work-in-process, inventory, variability, and how they drive operating relationships in a factory.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 410 or 510

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MET	514	CNC Computer Programming	Theory and application of N/C languages using CAM software and CNC machine tools.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 443 or 514
MET	515	Manufacturing Simulation	Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 415 or 515
MET	516	Appl Computer-Integrated Manuf	Techniques and practices of computer-integrated manufacturing as applied in a broad range of industry.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 416 or 516
MET	518	Composites Mtrls Manufacturing	Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MET 418 or 518
MET	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Engineering Programs	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MET	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	308	Manufacturing System Project I	Focuses on design for product realization in a manufacturing environment. Projects are industry driven and applicable to low-volume product development.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 202 with C or better; EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	318	Manufacturing Systems Proj II	Focuses on process development for high-volume manufacturing in the competitive global economy. Uses discrete event simulation software to model and study the manufacturing environments.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 219 with C or better; MFG 308 with C or better OR Visiting University Student
MFG	381	Processes&Validate Lab	Theory of basic manufacturing processes accompanied by the fundamental skills; safety practices while working with engineering drawings, machine tools and metrology equipment related to manufacturing.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 217 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	382	Modeling Manufacturing Sys I	Modeling of manufacturing systems using discrete event simulation. Introduces basic manufacturing-related data and system configurations. Uses commercial simulation software to build and analyze model output data.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 219 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	383	Comm in Production Environment	Effective communication is essential in all production environments for efficiency, yield and safety. Covers the major applications within a company and the expectations for the individual's capabilities.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): minimum junior standing OR Visiting University Student
MFG	385	Design for Manufacturing	Introduces the methods employed to design and produce products that can compete in the global marketplace. Topics include design for manufacturability and assembly, product life-cycle, economics of design and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	386	Integrated Circuit Manufact	Integrated circuit manufacturing combines judicious selection of materials with nano-meter features to create complex digital and analog circuits. The process demonstrates extreme applications of design, control and resource organization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 216 with C or better; EGR 280 with C or better OR Visiting University Student
MFG	387	Industrial Automation	Introduces concepts and application of industrial automation systems. Topics include PLC control systems, embedded control systems, sensing technologies, robotics and material-handling systems.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 216 with C or better; EGR 219 with C or better OR Visiting University Student
MFG	461	Engineering Economics	Covers the role of engineers in the manufacturing environment. Aspects of this role include troubleshooting, performance control, risk mitigation and financial planning. Provides tools and approaches for understanding and representing costs and making decisions based on these costs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better; MAT 343; Credit is allowed for only EGR 598 (Engineering Economics) or MFG 461 or MFG 494 (Engineering Economics) OR Visiting University Student

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MFG	472	Additive Manufacturing	Additive Manufacturing (AM) is driving a paradigm shift in design and manufacturing. Provides hands-on exposure across a wide range of commercial 3D printers. Topics include fundamentals of polymer, metal and composite AM processes and process capabilities such as rate and resolution. Introduces material properties and their dependence on raw material properties and process parameters; existing and new applications of AM; and a perspective on current and future technical challenges in AM. Provides a foundation for a more in-depth study of design for AM, and AM materials and structures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	480	Advanced Stat for Manufacture	Applies experimental design and statistical process control in the manufacturing environment. Uses engineering statistical software to formulate and solve problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better OR Visiting University Student
MFG	481	Enterprise Economics	All manufacturing is about cost. Considers the components of these costs and presents a number of mathematical tools and approaches for representing, understanding and making decisions based on them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 280 with C or better OR Visiting University Student
MFG	482	Materials Science in Manufact	High-technology manufacturing combines and exploits the properties of a wide range of materials. Provides a science-based view of materials selection and optimization for product manufacturability and reliability.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): CHM 116 with C or better; EGR 218 with C or better OR Visiting University Student
MFG	485	Engineering Internship	Experiential education. Local company oversees a student project experience at their facility.	N	PRA	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-3		Prerequisite(s): minimum junior standing
MFG	486	CNC Computer Programming	Theory and applications of NC languages using CAM software and CNC machine tools. Overview of advanced manufacturing processes including production CNC part programming ranging from current design to inspection standards.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): MFG 381 with C or better OR Visiting University Student
MFG	487	Casting and Forming Processes	Theory and practice of metal casting processes and design of castings. Analysis of various forming processes to determine load requirements. Theory and practice of tooling design for stamping operations.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): EGR 218 with C or better OR Visiting University Student
MFG	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-6		Prerequisite(s): Barrett Honors student
MFG	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MFG	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-4		
MFG	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-3		
MFG	545	Modern Manufacturing Methods	Investigates the capabilities and equipment of both conventional manufacturing processes and modern manufacturing processes. Emphasizes the fundamental, development and application of casting, forming and sintering processes for conventional manufacturing processes. Emphasizes the emerging topics related to additive manufacturing, field-assisted manufacturing and nanomanufacturing for modern manufacturing processes. Also introduces engineering materials, structure of materials, property of materials and material characterizations in the manufacturing processes. Complements theoretical concepts presented in lectures with the presentation of relevant research topics and/or industrial applications. Develops an understanding of manufacturing process evolution and the capabilities of modern manufacturing processes and equipment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MAE 545 or MAE 598 (Modern Manufacturing Methods) or MFG 545
MFG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MFG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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MFG	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	School of Manufacturing Systems and Networks	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		
MGT	300	Org & Mgt Leadership	Analyzes strategic, behavioral, and human resource management perspectives, including principles of strategic management and leadership of human resources.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prereq(s) w/C or better: W.P. Carey, Engr Mgt, or Sec Ed (Bus) major; ACC 231, 232 or 261; ECN 221, ECN 231, IEE 380 or STP 280; MAT 210, 251, 265 or 270; Pre- or coreq(s): ACC 241, 242 or 271 with C or better if completed OR Visiting University Student
MGT	302	Principles Intl Business	Multidisciplinary analysis of international economic and financial environment. Operations of multinational firms and their interaction with home and host societies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W. P. Carey BS or BA major; ECN 211, 212, 213, or 214 with C or better OR non-business major; minimum 2.50 GPA; minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MGT	303	Honors Org Strategies/Leadersh	Overview of business strategy principles, management processes, motivation, and leadership.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey School of Business Honors student; PSY 101 or 304 or SOC 101 or 301 with C or better; ECN 221 or 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271 with C or better if completed
MGT	310	Collaborative Team Skills	Development of skills in managing and working in collaborative environments. Theories and applications in small group dynamics and team facilitation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major OR non-business student; minimum 3.00 GPA; minimum 56 hours OR Visiting University Student
MGT	320	Organizational Behavior	Management processes, fundamentals of business-level strategy, individual difference issues, motivation and leadership of people in organizations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s) with C or better: Business Entrepreneurship BS or Management BS major; ACC 241, 242, or 271; ECN 221 or 231; MAT 211, 266, or 271; MGT 300 or 303; PSY 101 or PSY 304 or SOC 101 or 301 OR Visiting University Student
MGT	380	Managemnt & Strategy Nonmajors	Introduces the functions and applications of management in organizations, including controlling, decision making, leadership, motivation, planning, and social responsibility. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): Non-Business major; minimum 2.00 GPA; minimum 56 hours, OR nondegree-seeking student; minimum 2.00 GPA, OR graduate student OR Visiting University Student
MGT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W. P. Carey BS or BA student; Pre- or corequisite(s): ACC 240, 241, 242, or 271 with C or better
MGT	400	Cross-Cultural Management	Cultural role in international business relations; applied principles of cross-cultural communications, negotiations, and management; regional approaches to business relations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	C & G	Prerequisite(s): WP Carey BS or BA student OR non-business student with minimum 2.5 GPA and minimum 56 hours; MGT 300 or 303 or 320 or 380 with C or better. OR Visiting University Student
MGT	404	Chinese Lang & Global Bus Comm	Capstone course designed to synthesize the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Chinese Language and Culture. Analyzes case studies in which Chinese language and cultural skills are used to develop communication strategies in doing business in China. Learn new tools and techniques of analysis to enhance communication with Chinese business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with the Chinese and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment. Students are proficient in communicating in Chinese prior to taking this course.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; CHI 302 with C or better; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better

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MGT	405	Spanish Lang & Global Bus Comm	Synthesizes the knowledge acquired from business, language and cultural coursework in the BA in Business: concentration in Spanish Language and Culture. Students proficient in communicating in Spanish analyze case studies in which Spanish language and cultural skills are used to develop communication strategies in doing business in Spanish-speaking countries. Students learn new tools and techniques of analysis to enhance communication with their Spanish-speaking business counterparts. Applies language and cultural skills to a major project in which students demonstrate complex and integrated knowledge of negotiating with Spanish speakers and using global business skills. Integrates international business knowledge into presentations, research and the use of sophisticated tools of analysis to provide practical training for the global business environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; LES 305 with C or better; MGT 300 with C or better; SCM 300 with C or better; SPA 314 with C or better
MGT	411	Leading Organizations	Comprehensive overview of leadership in organizations. Provides students with understanding of leadership research and its applications to global organizations and the development of leaders.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 303, 320, or 380 with C or better OR Non-Business majors; MGT 300, 303, 320, or 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	420	Human Resource Management	Development of skills and knowledge to lead associates effectively: hiring, developing, evaluating, retaining, and rewarding employees. Preparation for leadership roles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BS or BA major OR Non-Business student; MGT 300, 303, 320, or 380 with C or better; minimum 3.0 GPA; minimum 56 hours OR Visiting University Student
MGT	421	Compensation in Organizations	Develops knowledge of theory and research in motivation, compensation and rewards, and skill in applying such knowledge to important compensation and reward decisions. Discusses strategic compensation and reward systems issues. Explores in detail a variety of monetary and nonmonetary reward systems; the motivational impact these systems have on employees, teams, and CEOs; and the performance impact they have on organizations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	422	Staffing	Focuses on the effective management of the flow of talent into and through organizations. Covers human resource planning, recruiting and selection, career transitions and other workforce movement. Provides opportunities to develop hands-on skills that are relevant to effectively managing talent flow.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	423	Training & Development in Orgs	Familiarizes students with the training and development function in organizations. Although tailored to students interested in human resources management, the course may also be relevant to students who may at some point be involved in training and development within an organizational context.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student
MGT	424	Employment Law	Provides an overview of U.S. employment law at both the federal and state levels. Reviews employment at will and wrongful discharge, employment torts, privacy, discrimination law, worker's compensation, occupational safety and health, unemployment, federal compensation laws, and the law of noncompetition and trade secrets. Designed for individuals preparing for careers in human resource management, labor relations or dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major; MGT 420 with C or better OR Visiting University Student
MGT	425	Global Human Resources	Explores the importance of international business management in the context of international human resource management, including topics on culture, compensation and benefits, international organizations and their structures, international assignment management and the legal and regulatory considerations that global organizations face. Identifies differences in operating a domestic versus international business and how business practices need to be adapted to operate successfully in foreign markets. Covers global strategy and structure; understanding and managing cultural differences; design and alignment of global HRM practices; and the global HR function.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed OR Visiting University Student

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MGT	426	HR Consulting Projects	Provides an opportunity to practice business management, relationship building, and HR technical skills in a real-world environment. Students complete human resource consulting projects with external outside organizations, allowing them to learn about the consultative nature common in corporate relationships, discuss real-world problems and solutions, and navigate technical processes related to the HR discipline.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey major; Pre- or corequisite(s): MGT 420 with C or better if completed; Credit is allowed for only MGT 426 or MGT 494 (HR Consulting Projects) OR Visiting University Student
MGT	430	Negotiations	Improves student's understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Give students experience in bargaining and negotiation, as well as provide a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning—students spend most of their time participating in exercises and negotiation simulations, as well as discussing negotiation-based cases involving issues that often arise in the workplace. Provides a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business student with minimum 3.00 GPA and minimum 56 hours; MGT 300, 303, or 310 or TMC 330 with C or better OR Visiting University Student
MGT	450	Consulting Projects	Describes and analyzes business processes. Generates and evaluates alternatives. Creates improvement and implementation plans.	N	PRA	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	L	Prerequisite(s) with C or better: W.P. Carey BS or BA major; ENG 101, 105, or 107; ENG 301 or 302; MGT 300 or 303; MGT 411; MKT 300, 302 or 303; Pre- or corequisite(s): FIN 300, 302 or 303 with C or better if completed
MGT	459	International Management	Concepts and practices of multinational and foreign firms. Objectives, strategies, policies, and organizational structures for operating in various environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	3	G	Prerequisite(s): W.P. Carey BA or BS major, OR non-Business student; MGT 302 or ECN 306 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): W.P. Carey BA Human Resources or BS Business Entrepreneurship or BS Management major
MGT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6		Prerequisite(s): Barrett Honors student
MGT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MGT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey BA or BS major; MGT 300, 302, 303, or 310 with C or better OR non-business major; MGT 300, 302, 303, or 310 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
MGT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisites: W. P. Carey BS or BA student OR non Business students with a minimum GPA of 2.50 and either at least 56 earned hours or non degree students OR Graduate students
MGT	501	Fundamentals of Org Behavior	Allows students to understand the human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	502	Organizational Behavior	Understands human side of organizations through management theories and applications. Develops knowledge and skills for successful management of self and others.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): W. P. Carey MBA students

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MGT	513	Mindful Leadership	Provides a transformative experience that aids in developing skills associated with being a mindful leader. Focuses on introducing the concept of mindful leadership and explaining how to use it to achieve personal and professional goals. Then concentrates on using mindful leadership to lead individuals and teams. Specific learning goals include: (1) to enhance understanding of mindful leadership; (2) to improve skills in using mindful leadership to achieve personal goals; (3) to improve skills in using mindful leadership to lead individuals and teams; and (4) to propose a transformative plan aimed at increasing use of mindful leadership.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey graduate student
MGT	520	High-Impact Leadership	Addresses the inherent ambiguity surrounding effective leadership by providing a toolkit of tangible behaviors to ensure leaders create "high impact" in all areas of their professional and personal lives. Emphasizes what high-impact leaders do differently and uniquely to achieve results while also inspiring loyalty in relationships. Covers core topics including building executive maturity and presence, developing and delivering compelling messages, inspiring those around you, building a strong relationship network, establishing credibility, and managing upward relationships. Includes peer dialogue, extensive presentation skills training, and assignments based on students' real-life leadership experiences.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 520 or 591 (High Impact Leadership)
MGT	525	Leadership and Teamwork	A key objective of the W. P. Carey Full-Time MBA program is to develop each student's leadership competencies, which are essential competencies as the individual enters the workforce and advances through organizations. During the FT MBA program, each student participates in the Executive Connections program. This program gives each student an opportunity to enhance his or her understanding of key leadership competencies, apply an experiential process of leadership development, and meet one-on-one with an executive coach to deeply explore and reflect on personal leadership competencies and goals for development.	N	LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	0.5-3		Prerequisite(s): WPC MBA degree student
MGT	526	Future World of Work	Focuses on the future world of work in terms of how organizations need to be agile along with their leaders. Focuses on the skills individuals need to be successful in the future world of work, in essence, the Forward Focus leadership skills. A critical component of this course is partnering with executive mentors from the Executive Connections Program. Also pairs well with the Interdisciplinary Learning Labs which gives students experiential learning in terms of some of the skills needed in the future.	N	LEC	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	0.5-1		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	528	Basics of Negotiations	Contemporary management issues, including environmental, project and supply chain management; new product development; quality control; TQM. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	3		Prerequisite(s): degree-seeking graduate student
MGT	530	Influence and Negotiations	Improves students' understanding of and skills in the art of negotiation. For most managers, negotiation is a significant aspect of their day-to-day jobs, not to mention a major element of everyday life. Gives students experience in bargaining and negotiation, as well as provides a foundation in the essential knowledge bases crucial to being an effective negotiator. Emphasizes experiential learning--students spend most of their time participating in exercises and negotiation simulations (including negotiating job offers), as well as discussing negotiation-based cases involving issues that often arise in the workplace. The goal is to provide students with a fundamental understanding of what it takes to be an effective negotiator, as well as several experiences to draw upon in future negotiation situations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; Credit is allowed for only MGT 530 or MGT 591 (Negotiations)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
MGT	540	Entrepreneurship	Capstone case-based course covering all aspects of starting a business: opportunity identification, evaluation, concept development, identifying required resources, acquiring those resources, launching the entity, managing growth, and ultimately, harvesting the enterprise. Revolves around a series of cases, readings and class discussions designed to build a comfort level with understanding and solving problems faced every day, in real life, by a broad spectrum of entrepreneurs at various phases of venture development. Significant emphasis on understanding the valuation and financing of entrepreneurial ventures interwoven through discussions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W.P. Carey School of Business graduate student; ACC 502 with C or better; FIN 502 with C or better; Credit is allowed for only MGT 540 or MGT 591 (Entrepreneurship)
MGT	545	Becoming Leaders Who Matter	Addresses core questions: What does it mean to be a leader who really matters? How can you become such a leader? Today's competitive and complex environment requires leaders who are equipped with not just the functional and technical skills necessary to run a business but, more significantly, the leadership skills that allow the business and the people involved in it to thrive. Provides an opportunity to reexamine thinking about leadership and assess current skills and competencies in this area. Highly interactive learning environment with case analyses, exercises, discussion, guided reflection activities, assessments and group work. Covers topics such as self awareness (motivations, values, and leadership style), developing perspective as leaders, the social context of leadership, the role of emotions in the workplace, using life experiences to extract leadership lessons.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Pre-requisite: W.P. Carey School of Business graduate student; Credit is allowed for only MGT 545 or 594 (Leading w/Authenticity & EI OR Becoming Leaders Who Matter)
MGT	552	Prof Develop & Engagement Prog	Deeply explores and develops professional skills. By identifying and building managerial competencies, facilitates the acceleration of career goals.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-3		Prerequisite(s): W. P. Carey MBA student; Credit is allowed for only MGT 552 or MGT 591 (Professional Development & Engagement Program).
MGT	565	Business and Public Policy	Takes a managerial perspective to examine the interface between businesses and their external political environments. Potential changes in public policy can affect current operations and future opportunities. Examines how managers can anticipate and affect the formation, modification and enforcement of public policy in various institutional environments.	N	LEL	Y	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): W.P. Carey MBA Executive Program or W.P. Carey School of Business graduate student; Credit is allowed for only MGT 565 or MGT 591 (Business and Public Policy)
MGT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	586	Fundamentals of Strategic Mgmt	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	1.5		Prerequisite(s): degree-seeking graduate student
MGT	588	Sources Competitive Advantage	Explores the general manager as organizational leader. Focuses on competitive advantage and how each functional area contributes to it.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-4		Prerequisite(s): MBA degree student
MGT	589	Strategic Management	Formulation of strategy and policy in the organization, emphasizing the integration of decisions in the functional areas.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Management and Entrepreneurship	2-4		Prerequisite(s): W. P. Carey MBA student
MGT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): W.P. Carey graduate student
MGT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: MBA degree student
MGT	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	0-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MGT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Management and Entrepreneurship	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
MGT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MGT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Management and Entrepreneurship	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	140	Sounds and Cultures	Introduces a range of practical and intellectual challenges presented by encounters with various kinds of music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): Music or Performance and Movement major OR Visiting University Student
MHL	201	Media Literacy for Musicians	Instruction in basic Macintosh computer literacy, including generic applications and music-specific programs with hands-on experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	CS	
MHL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MHL	339	Undergraduate Bibliography I	Research tools and methods in musicology, concentrating on resources pertinent to the study of music from Antiquity to the Baroque.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course OR Visiting University Student
MHL	340	Undergraduate Bibliography II	Research tools and methods in musicology, concentrating on resources pertinent to the period 1750-present.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): MHL 140; Corequisite(s): MHL 300- or 400-level course
MHL	341	Music History I	Western European art music from Antiquity through Baroque. Identification/analysis through listening; application of historical and analytical concepts; research project comprising fresh thesis, detailed musical research, personal reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student
MHL	342	Music History II	Western European, American art music from Classical period to present. Identification/analysis through listening; transfer/application of music/analytical concepts; research project comprising fresh thesis, insightful musical research/reflection, fluent English writing, correct citation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s) w/ C or better: Performance BM or Theory & Composition BM major; MHL 140; MTC 223 OR Music Learning & Teaching BM, Music Therapy BM, or Music BA major; MHL 140; MTC 221 OR Visiting University Student
MHL	344	Music in World Cultures	Examines the relations among music, dance, theatre, religion, and social status in Asia, Africa, Oceania, Europe, and the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Prerequisite(s): minimum 42 hours OR Visiting University Student
MHL	363	Survey of Russian Music	Examines music and musical life in Russia, the Soviet Union, and the post-Soviet C.I.S. from the Middle Ages to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Music major; MHL 140 with C or better
MHL	365	Popular Music and Race	Examines popular music in the United States with emphasis on historical, sociocultural, economic and aesthetic concerns as they intersect with issues of race and race relations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; MTC 221 with C or better; Credit is allowed for only MHL 365 or MHL 394 (Pop Music and Race) or MHL 494 (Pop Music and Race) OR Visiting University Student
MHL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major

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MHL	437	Music in the Baroque Era	Examines music, culture and aesthetics in the 17th and early 18th centuries.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major or minor; MHL 140 with C or better; MTC 221 with C or better; minimum 45 hours OR Visiting University Student
MHL	438	Topics in 18th-Century Music	Selected topics exploring the musical styles of the 18th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L & H	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	439	Topics in 19th-Century Music	Selected topics exploring the musical styles of the 19th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & H	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	440	Topics in 20th-Century Music	Selected topics exploring the musical styles of the 20th century and their cultural contexts.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): Music major; ENG 101, 105, or 107 with C or better; MHL 140 with C or better; MTC 223 with C or better OR Visiting University Student
MHL	441	Concerts in the 20th Century	Presents a concert-centered approach to 20th-century music history, investigating important concerts that emphasized artistic collaboration, interaction between "high" and "low" genres, and other major issues affecting the changing means of creating, disseminating, and receiving music in the twentieth century.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): MHL 140 with C or better; MTC 223 with C or better; Credit is allowed for only MHL 441 or MHL 494 (Concerts in the 20th Century) or MHL 598 (Concerts in the 20th Century) OR Visiting University Student
MHL	447	Music and Healing	Combines elements of musicology, philosophy, anthropology, music therapy, neuroscience, psychology; investigates ways music has been proven to positively affect the "human condition"; focuses on what music means to humans.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major who has passed audition; MHL 140 with C or better; MTC 222 with C or better; Credit is allowed for only MHL 447 or MHL 494 (Music and Healing) or MHL 547 or MHL 598 (Music and Healing)
MHL	456	History of Opera	Development of opera from its creation ca. 1600 to present. Emphasis placed on major stylistic developments and representative works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better
MHL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MHL	490	Capstone I: UG Thesis Research	Selection of topic and research toward the completion of an undergraduate thesis of no fewer than 50 pages.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 339
MHL	491	Capstone Project II: UG Thesis	Completion of an undergraduate thesis in musicology or ethnomusicology of no fewer than 50 pages.	N	RSC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 490
MHL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MHL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MHL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major; MHL 140 with C or better; MTC 222 with C or better OR Visiting University Student
MHL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MHL	532	Music Bibliography	Major historical and analytical writings; systematic and historical collections of music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate Music student
MHL	547	Music and Healing	Combines elements of musicology, philosophy anthropology music therapy, neuroscience, psychology; investigates ways music has been proven to positively affect the "human condition"; focuses on what music means to humans.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MHL 447 or MHL 494 (Music and Healing) or MHL 547 or MHL 598 (Music and Healing)
MHL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student

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MHL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student who has passed audition
MHL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Graduate Music student
MHL	632	Applied Musicology	Explores practice-oriented entrepreneurial opportunities and methods in musicology, acquires knowledge and develops skills in community engagement and outreach, explores pathways of professional publication and network building, and participates in organizing curated concert series and scholarly conferences.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MHL 532
MHL	657	Topics in Symphonic Literature	Examines the evolution of the symphony and symphonic poem from the early classic era through the 19th century, with emphasis on the analysis of selected works.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	668	Introduction Ethnomusicology	Experiencing theory and methodology by being ethnomusicologists through musical performance, primary writings on fieldwork, career structuring, the history of the discipline, its relationship with historical musicology, and the cultural theories which ethnomusicologists draw on.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	670	Area Studies-Ethnomusicology	Study of the music of a particular culture, country, or area (e.g., music of Mexico, Latin America, China, Africa).	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	675	Choral Music & Institutions	Examines the history of choral music through the lens of choral institutions: patronage, education, ritual, performing forces, status (professional vs. amateur), and locale.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	N	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MHL	798	Research Colloquium	Interactive research forum featuring research presentations and discussion among musicology students, faculty and guest speakers from across campus and other institutions. Encourages students to engage in constructive dialogue with their peers as well as with faculty and guest speakers in a collegial environment conducive to exchange and collaboration. Supervised by a faculty panel from the musicology division.	N	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSI 601 or 602
MHL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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MIC	205	Microbiology	Introductory microbiology, emphasizing basic principles of microorganisms (bacteria, protozoa, algae, fungi, and viruses) and the role they play in health, ecology, and applied fields. May not be used for Microbiology credit unless a diagnostic test is passed. Both MIC 205 and MIC 206 required for SG General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	SG	Prerequisite(s): CHM 101 or 113 OR Visiting University Student
MIC	206	Microbiology Laboratory	Principles and lab techniques used in identifying and handling microorganisms. Both MIC 205 and 206 must be taken to secure SG General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	SG	Pre- or corequisite(s): MIC 205 or 220 with C or better if completed OR Visiting University Student
MIC	220	Biology of Microorganisms	Introductory microbiology for students majoring in the life sciences. Detailed study of microbial cells, their structure, genetics, physiology, and taxonomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 181 or 281 with C or better; CHM 116 OR Visiting University Student
MIC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	302	Advanced Bacteriology Lab	Advanced lab techniques in bacterial growth, physiology, and genetics, with an emphasis on quantitative data and formal lab reports. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student
MIC	360	Bacterial Physiology	Mechanisms and control of cell metabolism, structures, and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	379	Medical Bacteriology	Principles of medical bacteriology with emphasis on bacterial infections, diagnostic testing, clinical symptoms, pathogenesis, and treatments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better OR Visiting University Student
MIC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	401	Research Paper	Paper of 15 or more pages based on library or lab research in collaboration with a faculty member. Required of all Microbiology majors. Both MIC 302 and 401 must be taken to secure L General Studies credit.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIC 206 with C or better; MIC 220 with C or better; senior standing OR Visiting University Student
MIC	420	Immun: Molecular&Cell Foundtns	Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 353, BIO 360, or MIC 220 with C or better; Credit is allowed for only BIO 420 or MIC 420 OR Visiting University Student
MIC	421	Experimental Immunology	Introduces the basic techniques, methods, and assays used in immunology.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Prerequisite(s): BIO 353 or 360, MBB 247, or MIC 220 with C or better OR Visiting University Student
MIC	425	Advanced Immunology	Surveys recent advances in immunology, including lymphocyte membranes, lymphokines/biochemistry, molecular genetics, theoretical immunology, immunoregulation, neuroimmunology, and immunologic diseases.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 420 with C or better
MIC	441	Bacterial Genetics	Surveys genetic exchange and regulatory processes in bacteria and their viruses. Bacteria and viruses as tools in genetic engineering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	442	Bacterial Genetics Laboratory	Techniques of mutagenesis, mapping, and strain and genetic library construction.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre/Co-requisite: MIC 441
MIC	443	The Microbial Universe	Diversity and physiology of microorganisms with emphasis on recent advances in the biology of microorganisms of environmental and medical importance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 353 with C or better; Pre- or corequisite(s): MIC 444 with C or better if completed OR Visiting University Student
MIC	444	The Microbial Universe Lab	Techniques used to explore the microbial universe with emphasis on structural, metabolic, genetic, and growth characteristics relevant to the identification and characterization of microorganisms of environmental and medical importance. Not open to students with credit in MIC 206.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): MIC 443 with C or better OR Visiting University Student
MIC	445	Molecular Biology/Genetics	Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): BIO 340 or MBB 347 with C or better; MBB 247 or MIC 302 with C or better; Credit is allowed for only MBB 445 or MIC 445 OR Visiting University Student
MIC	446	Molecular Biology/Genetics Lab	Molecular genetic techniques: plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation; immunologic detection, and electrophoresis.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	2		Pre- or corequisite(s): MBB 445 or MIC 445 with C or better if completed; Credit is allowed for only MBB 446 or MIC 446 OR Visiting University Student

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MIC	461	Geomicrobiology	Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and metals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only GLG 461 or MIC 461
MIC	470	Bacterial Diversity/Systematic	Biology, classification, and enrichment culture of the nonpathogenic bacteria.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): MIC 302 with C or better
MIC	481	Bacterial Pathogenesis	Human host-bacterial interactions in infectious diseases with emphasis on pathogenesis and molecular mechanisms of bacterial virulence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 220 with C or better; MIC 360 or 441 with C or better
MIC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
MIC	485	General Virology	Fundamental principles of viruses, their molecular biology, replication, genetics, and pathogenesis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): MIC 206 with C or better; MIC 220 with C or better OR Visiting University Student
MIC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Prerequisite(s): Barrett Honors student
MIC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MIC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
MIC	495	Undergraduate Research	Supervised research in biology/microbiology/molecular biosciences and biotechnology/or plant biology.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		Prerequisite(s): junior or senior standing OR Visiting University Student
MIC	496	Undergraduate Thesis	Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): junior or senior standing; Credit is allowed for only BIO 496 or HPS 496 or MBB 496 or MIC 496 OR Visiting University Student
MIC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-7		
MIC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
MIC	501	Foundations in Microbiology	Provides overview of the field of microbiology including: bacterial genetics and physiology, virology and host/pathogen interactions through lectures, reading, presentations and discussion of papers in the field of microbiology and immunology. Students read all papers, participate in class discussions and present papers during the semester.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MIC 501 or MIC 591 (Milestones in Microbiology)
MIC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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MIC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MIC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MIS	101	Intro to the US Army	Introduces the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills such as cultural understanding, goal setting, time management, stress management and comprehensive fitness relate to leadership, officership and the Army profession. Focuses on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the Army ROTC program, its purpose in the Army, and its advantages for the student. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	102	Foundation of Adaptive Leaders	Introduces the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, students learn how ethics and values shape the Army and the specific ways that these ethics are inculcated into Army culture. Explores the seven Army values and the warrior ethos, investigate the profession of arms and Army leadership as well as an overview of the Army, and gains practical experience using critical communication skills. Includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101
MIS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	201	Army Leadership and Decisions	Academically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam and final exam. Also includes physical training assessments, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102 OR Visiting University Student

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MIS	202	Army Doctrine and Team Dev.	Academically challenging course where students study, practice and apply the fundamentals of the leadership, officer skills, Army values and ethics, personal development and tactics at the small-unit level. Focuses on cross-cultural competencies as they relate to Army doctrine and how they apply in a combatant commander's engagement strategies. Stresses Army values, teamwork and warrior ethos and their relationship to the law of land warfare and philosophy of military service. Covers the ability to lead and follow through team building exercises in small units up to squad level. Requires the student to demonstrate writing skills and present information briefings as preparation for development in becoming a successful future officer. Also includes physical training assessment, tactical training, as well as lecture-based instruction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201
MIS	205	Leader's Training Course	6-week training program emphasizing practical hands-on skills and leadership development. Taken in lieu of MIS 101, 102, 201, 202. Conducted at Fort Knox, Kentucky.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		
MIS	301	Training Management and WFF	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab or during a Leader Training Exercise (LTX). Requires the student to write peer evaluations and receive feedback on abilities as a leader and how to improve those leader skills that can further develop into a successful officer. Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV Cadets who evaluate the students using the Cadet Officer Evaluation System (OES).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIS 101; MIS 102; MIS 201; MIS 202
MIS	302	Leadership in Small-Unit Ops	Academically and physically challenging course where students study, practice and apply the fundamentals of Army leadership, officership, Army values and ethics, personal development and small-unit tactics at the platoon level. At the conclusion of this course, the student is capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a leadership lab, or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the instructor, other ROTC cadre and MSL IV cadets who evaluate the students using the Cadet Officer Evaluation System (OES). Teaches the student the necessary skills to be successful at the USACC Advance Camp.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MIS 101; MIS 102; MIS 201; MIS 202; MIS 301
MIS	303	National Adv Leadership Camp	6-week training program emphasizing leadership development and advanced military skills, including tactics, land navigation, and physical training. Conducted at Fort Lewis, Washington.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		
MIS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Military Science	1-4		

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MIS	401	The Army Officer	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam, and final exam. Assesses students on the execution of a mission during a classroom PE, leadership lab or during a Leader Training Exercise (LTX). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is mandatory for commissioning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302 OR Visiting University Student
MIS	402	Company Grade Leadership	Academically and physically challenging course where students study, practice, develop and apply critical thinking skills pertaining to Army leadership, officer skills, Army values and ethics, personal development and small-unit tactics at platoon level. For the capstone exercise, requires students to complete an oral practicum that is evaluated on their knowledge of the 20 Army warfighting challenges. Assesses students on leadership abilities during classroom PE, leadership labs or Leader Training Exercises (LTXs). Students receive systematic and specific feedback on their leader attributes, values and core leader competencies from the cadre, PMS and other MSL IV cadets. At the conclusion of this course, students plan, coordinate, navigate, motivate and lead a platoon in future operational environment. Successful completion of this course assists in preparing for the BOLC and is a mandatory requirement.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Military Science	4		Prerequisite(s): MIS 101; MIS 102; MIS 201; MIS 202; MIS 301; MIS 302; MIS 401
MIS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Military Science	1-3		
MKT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	280	Fashion Merchandising	Examines the business side of the fashion industry with a focus on fashion marketing and the fundamentals of merchandising and retailing.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Credit is allowed for only FSH 280 or MKT 280
MKT	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		
MKT	300	Marketing & Bus Performance	The dynamic role of marketing within society and organizations. Emphasizes frameworks and analytical tools that ensure customer focus and drive organizational performance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey major, or non-business major with minimum 2.50 GPA and minimum 56 hours; ECN 211, 212, 213, or 214 with C or better OR Visiting University Student
MKT	302	Applied Mktng Mgmt & Ldrship	Market planning, execution, and assessment. Emphasizes decision and communication skills related to market opportunity analyses and marketing program development as a core business function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s) w/ C or better: W. P. Carey Marketing BS major; ECN 221 or 231; ENG 101, 105, or 107; MAT 211, 266, or 271; Pre- or corequisite(s): ACC 241, 242, or 271 w/ C or better if completed OR Visiting University Student
MKT	303	Honors Marketing Theory & Prac	Covers basic applications of marketing concepts to problems that are common to marketing managers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s) w/ C or better: W.P. Carey Honors student; ECN 221 or 231; ENG 101, 105, or 107; MAT 211; Pre- or corequisite(s): ACC 241, 242, or 271 w/ C or better if completed; Credit is allowed for only MKT 300 or MKT 302 or MKT 303
MKT	311	Sports Business	Focuses attention on components ranging from professional sports to collegiate sports, as well as sports-related products.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; minimum 56 hours; Pre- or corequisite(s): MKT 300, 302, or 303 with C or better if completed OR Visiting University Student

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MKT	352	Marketing Research	Knowledge and skills to make intelligent decisions in the design, evaluation and application of marketing research and market data.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	L	Prerequisite(s): W. P. Carey Marketing student; ENG 101, 105, or 107 with C or better; MKT 302 or 303 with C or better OR Visiting University Student
MKT	355	Designing Brand Identity	Creates brand identity initiatives by beginning with a focus on research and strategy. Covers how the support system of design principles, color, imagery, typography and composition makes an entire brand identity program cohesive, yet differentiated. Explores major media development tools (e.g., Adobe Creative Cloud) in a way that can help students select the right approach for a brand, and also to make good choices for working across media. Differentiates between critical digital literacy as opposed to functional digital literacy, which focuses predominately on how to operate software applications.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): MKT 302 or 303; Credit is allowed for only MKT 355 or MKT 494 (Digital Tools for Building Brands)
MKT	365	Advertising & Beyond	Advertising and brand development as means to marketing and business success. Consideration of market research, segmentation, objective, creative strategy, digital and integrated media tactics, media management, and metrics of effectiveness.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS student; MKT 300, 302 or 303 with C or better or Visiting University Student
MKT	370	Prof Sales & Relationship Mgmt	Investigate the vital role of sales, its relationship to other functions within the firm, and its impact on customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA or BS major, or non-business major with minimum 2.50 GPA and minimum 56 hours; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	385	Data-Driven Marketing	Investigates the increasingly important relationship between marketing and data, looking both at the collection of qualitative and quantitative inputs and the analysis of that data to make informed decisions. It's big (and small) data meets big ideas.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey major; MKT 300, 302, or 303 with C or better; Credit is allowed for only MKT 385 or MKT 494 (Data-Driven Marketing) OR Visiting University Student
MKT	390	Essentials of Marketing	Focuses on the nature and processes of marketing with an emphasis on practical application. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student OR degree- or nondegree-seeking graduate student OR Visiting University Student
MKT	391	Essentials of Selling	Focuses on the selling process and its practical applications within consumer and business markets. Not open to business majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-business student; minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking undergraduate student; minimum 2.00 GPA OR degree-seeking or nondegree-seeking graduate student OR Visiting University Student
MKT	392	Essentials of Business Mktg	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): Non-Business major; minimum 2.00 ASU cumulative GPA; minimum 56 hours; MKT 390 with C or better; or Non-degree seeking undergraduate or Degree seeking or Non-degree seeking graduate student
MKT	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): Non-business student, and minimum cumulative GPA of 2.00, and minimum 56 hours OR be a Non-degree student with minimum 2.0 ASU cum GPA OR be a graduate student
MKT	395	Essen Advertising & Mktng Comm	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BA major or non-business major; minimum 2.00 GPA; minimum 56 hours, OR non-degree student with minimum 2.0 GPA OR graduate student; Credit is allowed for only BUA 382 or MKT 395 OR Visiting University Student

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MKT	396	Essentials of Services Mkt	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR Business (Retail Management) BA major OR nondegree-seeking student OR graduate student (degree- or nondegree-seeking) OR Visiting University Student
MKT	397	Essentials of Global Marketing	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in the student's home country and marketing globally. The rapid adoption of technology has fundamentally changed the dynamics of marketing and created new competitive paradigms that must be understood for firms to be successful.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree- or non-degree seeking graduate student OR Visiting University Student
MKT	398	Essentials of Sports Business	Introduces the concepts of sports business. Builds knowledge, skills and understanding of the fundamentals of sports business. Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and how they impact sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): non-Business major; minimum 2.00 ASU GPA; minimum 56 hours; MKT 390 with C or better OR non-degree seeking undergraduate OR degree- seeking or non-degree seeking graduate student OR Visiting University Student
MKT	402	Consumer Behavior	Applies behavioral concepts in the analysis of consumer behavior and the use of behavioral analysis in marketing strategy formulation.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing student; MKT 352 with C or better OR Visiting University Student
MKT	410	Sales Management	Constructive investigation of selling processes, their application in business and consumer contexts, and management of the sales function.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	420	Retail Management	The role of marketing in retailing and retail performance. Challenges and processes of retail management across various institutions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Retail Management) BA or Marketing BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	421	Fan Behavior and Sports Mktg	Focuses on what it means to be a consumer in a sports marketing context society and what, as a marketer, you need to know to develop, evaluate and implement effective marketing strategies for fans.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	425	Global Marketing Management	Analyzes marketing strategies and practices developed by firms to compete in global markets and adapt to changing international environments.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3	G	Prerequisite(s): W.P. Carey BA or BS major or non-business major with minimum 2.50 ASU cum GPA and minimum 2.50 ASU business GPA and 56 earned hours; MKT 300 or 302 or 303 with C or better OR Visiting University Student
MKT	430	Sports Business	Builds knowledge, skills, and understanding of sports business; exposure to leading-edge thought, methods, and practices in sports business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BS student; must have completed MKT 300, MKT 302 or MKT 303 with a grade of C or better.
MKT	431	Sports Events and Facility Mgt	Project-based course that encompasses the administration, coordination and evaluation of any type of event related to sports.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	435	Entrepreneurial Marketing	Identifies and evaluates marketing opportunities; motivates an appreciation of entrepreneurial marketing and its different environmental contexts for general marketing principles.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	440	Creating Digital Experiences	Marketing is about creating meaningful experiences between brands and the people they serve. Designed to jump start learning for any student interested in marketing goods and services in contemporary society, this course covers digital ideation and planning as well as digital media, all with a focus on practical application.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better. Credit is allowed for only MKT 440 or MKT 494 (Digital Marketing in Practice) OR Visiting University Student

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MKT	441	Sports Revenue Generation	Focuses on selling and how to create, maintain and build relationships within the sports context. Students gain knowledge and develop skills in choosing a sales career including attributes of a sales person, sales call preparation, value propositions, creating value for the client, team selling, questioning and listening techniques, negotiating, persuasion and closing techniques.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business certificate; MKT 300, 302, or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	442	Services Marketing Strategy	Concepts, skills, and strategies for addressing the imperative marketing challenges and opportunities involving service.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; minimum 2.50 GPA; minimum 56 hours; MKT 302 or MKT 303 and MKT 352 with C or better; Pre- or corequisite(s): MKT 402 OR Visiting University Student
MKT	450	Social Media and Content Mkt	Centers on how to effectively use social media and content marketing to build relationships between a company and its customers. Students learn to create content, how to deliver content through social media and community management, as well as how to optimize content for maximum effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-3		Prerequisite(s): W. P. Carey Marketing BS major; MKT 302 (or 303) with C or better; Credit is allowed for only MKT 450 or 494 (Social Media Mktg and Com Mgmt) OR Visiting University Student
MKT	451	Sports Business Analytics	Develops and applies critical and creative thinking skills through the lens of a sports context with the goal of making data-driven decisions.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major obtaining Sports Business cert; MKT 300, 302 or 303 with C or better; MKT 311 with C or better OR Visiting University Student
MKT	452	Bus-to-Bus Marketing Strategy	Concepts, skills, and strategies for performing competitively in the business market where organizations rather than households are the customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; minimum 2.50 GPA; minimum 56 hours; Pre- or corequisite(s): MKT 402 OR Visiting University Student
MKT	455	Brand Management	Focuses on understanding brand management and the concepts associated with building brand equity and managing brand identity and positioning. Students learn how firms create a competitive advantage by incorporating consumer insight into an effective branding strategy. In addition, students gain an understanding of the role of branding on product portfolio management. Heavily features case discussion, projects and real brands. Applies brand management knowledge to an actual branding strategy project for a small firm.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Marketing major; MKT 302 or 303 with C or better; Credit is allowed for only MKT 455 or MKT 494 (Brand Management) OR Visiting University Student
MKT	460	Sports Revenue Generation	Focuses on providing a sophisticated understanding of revenue generation in the context of sports. Students gain knowledge of key marketing, management and administrative functions that play a critical role in revenue-generation strategies.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey BS major; MKT 300, 302 or 303 with C or better
MKT	462	Competitive Marketing Strategy	Strategy formulation and decision making by the marketing executive. Integrates marketing programs and considers competitive marketing issues.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing student; MKT 302, 303 or 352 with C or better; Pre- or corequisite: MKT 402 with C or better if completed OR Visiting University Student
MKT	465	Projects in Sports Business	Focuses on providing students with an innovative opportunity to work directly with sports business industry professionals to address real-world and real-time issues faced by these organizations. Students develop an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W. P. Carey Business (Sports Business) BA major or BS major; MKT 300 or 302 or 303 with C or better; MKT 311 or 430 with C or better OR Visiting University Student
MKT	472	Immersive Brand Experience I	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Focuses on customer and brand market research, strategic planning and foundations of the creative process.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s) w/ C or better: W.P. Carey Marketing major; MKT 302 or 303; MKT 352; min 56 hours; Pre- or corequisite(s): MKT 402 w/ C or better if completed; Credit allowed for only MKT 472 or MKT 494 (Proj in Advertising) OR Visiting University Student

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MKT	473	Immersive Brand Experience II	Provides in-depth, hands-on experience creating complete branding initiatives (campaigns, projects, products/services) for business or nonprofit organizations. Functioning as a real working branding firm, each student provides both an individual effort, as well as works within teams. Applies previously acquired marketing knowledge and best practices in creative direction, writing and art direction, media development and strategy to deliver completed brand development initiatives for clients.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): W.P. Carey Marketing major; MKT 302 or 303 with C or better; MKT 352 with C or better; min 56 hours; Pre- or corequisite(s): MKT 402 with C or better if completed; Credit is allowed for only MKT 473 or MKT 494 (Projects in Advertising)
MKT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with B- or better; minimum 3.00 GPA
MKT	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-6		Prerequisite(s): Barrett Honors student
MKT	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	W. P. Carey School of Business	Department of Marketing	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MKT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): W.P. Carey BA or BS major; MKT 300, 302, or 303 with C or better OR Visiting University Student
MKT	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-3		Pre-requisites: Business students with professional status or non-business students with a minimum cumulative GPA of 2.50 and 56 earned hours
MKT	501	Fundamentals of Marketing Mgmt	Manages the marketing function; market and environmental analysis; marketing planning, strategy and control concepts. Development and management of marketing programs. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree-seeking graduate student
MKT	502	Marketing Management	Managing the marketing function; market and environmental analysis; marketing planning, strategy, and control concepts. Development and management of marketing programs.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): W. P. Carey MBA students
MKT	520	Innovating Through Services	Focuses on challenges of managing service brands and delivering quality service to customers across industry sectors. Emphasizes skills and knowledge needed to implement quality service and service strategies, frameworks for customer-focused management, and how to increase customer satisfaction and retention through service strategies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	525	Excel in Services	Focuses on challenges of managing services and delivering quality service to customers. The attraction, retention, and building of strong customer relationships through quality service (and services) are at the heart of the course content. The course is equally applicable to organizations whose core product is service and to organizations that depend on services for competitive.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	530	Creativity and Innovation	Multidisciplinary approaches to theories and practices of inspiring and managing innovation and change for sustainable competitive advantage. Focuses on both the student's individual creativity and the planning and implementation of innovations, technologies, processes, or systems that pose significant uncertainty. Places special attention on the processes surrounding understanding the consumer, ideation and implementation. Inclusive in this are methods such as environmental scanning, scenario planning, contextual research, storytelling, concept testing and prototyping. Also includes the many aspects of the organization's structure and culture regarding innovation and creativity.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	535	Global Marketing Strategy	Introduces the concepts of globalization in markets and gives an appreciation and understanding of the differences between marketing in a home country and marketing globally.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student

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MKT	540	Branding and Consumer Markets	Provides an intensive examination of factors that drive consumer behavior. Covers topics such as understanding factors contributing to a superior value proposition, identifying elements associated with the stability of the existing alternative, specifying components linked to reducing the level of uncertainty associated with the new alternative; articulating independent influences (e.g., regulatory and social) operating in a particular change context, and comprehending biases that exist in the search and decision making process. Also places additional emphasis on brand development as well as on the role that social media assumes in the change process.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	545	Entrepreneurial Marketing	Introduces the process of developing a plan for starting a business and presenting that plan to potential investors in order to obtain financing. Covers the purposes of a business plan, the varying objectives of different types of investors or financial institutions, and how they complement or conflict with the interests of an entrepreneur. Topics include proprietary positioning, types of organization, and differing management objectives.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	550	Product and Service Innovation	Intimately familiarizes students with the front end of the new product design process and provides concrete tools for determining strategies for developing new products based on input from customers.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	555	B2B - Capturing Value	Provides the tools and specialized knowledge for developing and executing marketing strategy in the business-to-business market. Covers how to identify forces that drive buying behavior in organizations, measure market opportunity, identify profitable segments, and develop strategy, particularly for turbulent, high-technology markets.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	560	Customer Relationship Mgmt	Focuses on the tools, metrics, and systems used to measure and manage customer relationships. Key to the development and use of sound customer metrics are market research skills including competencies in research design, sampling, measurement, data collection, and data analysis. Covers how to use types of data such as surveys, purchased data, transactional data, the Web, and social media to measure and manage customer relationships.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	GNA	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W. P. Carey MBA Full Time student.
MKT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
MKT	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	W. P. Carey School of Business	Department of Marketing	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student

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MKT	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	W. P. Carey School of Business	Department of Marketing	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MKT	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	W. P. Carey School of Business	Department of Marketing	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	501	Writing About Social Issues	Reading, discussion and creation of nonfiction writing on diverse societal issues. Investigates diverse forms and genres of writing.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	502	Religion, Culture, and Health	Focuses on how cultural and religious notions may come into conflict around issues of health. Contrasts two societies, not necessarily contemporary, from different continents.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	503	Ethics, Science, and Culture	Introduces ethics related to the practice of art, science, and medical practice in modern and premodern society.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	504	Film Analysis	Introduce formal and cultural issues important to understanding movies.	N	REC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Pre-requisite: Master of Liberal Studies student OR MAS in American Media and Popular Culture student. Credit is allowed for only FMS or MLS 504
MLS	505	The Research Process	Contemporary scholarly writing and research processes that adult learners, new to graduate study, can use in all MLS classes and for years ahead.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MLS 505 or MLS 598 (The Research Process) or MLS 598 (Research Methods)
MLS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Liberal Studies MLSt or Liberal Studies (Film and Media Studies) MLSt student
MLS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MLS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MND	101	First-Year Chinese I	Beginning course in Modern Standard Chinese designed for students who have little or no previous background in the language. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information that go along with language use.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Credit is allowed for only CHI 101 or MND 101 OR Visiting University Student

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MND	102	First-Year Chinese II	Beginning course in Modern Standard Chinese designed for students who have completed MND 101. Different pedagogical approaches such as group practice, role play and situational dialogues are designed to help students acquire basic skills in listening, speaking, reading and writing in Modern Standard Chinese. While linguistic elements are the focus of this course, also includes cultural information with application to global business communication.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; Credit is allowed for only CHI 102 or MND 102
MND	201	Second-Year Chinese I	First part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed First-Year Chinese I and II. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing. While linguistic elements are the focus of this course, also includes cultural information that accompanies language use along with a deep emphasis on global work situations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; Credit is allowed for only CHI 201 or MND 201 OR Visiting University Student
MND	202	Second-Year Chinese II	Second part of a two-semester course of intermediate Modern Standard Chinese for students who have successfully completed three semesters of Modern Standard Chinese at the college level or equivalent. Builds on the vocabulary introduced in the first three courses, with deeper emphasis on global work situations. Adopts different pedagogical approaches such as group practice, role play and situational dialogues to help students acquire basic skills in listening, speaking, reading and writing Modern Standard Chinese. While oral proficiency is the focus of this course, also includes cultural information that accompanies language use in the teaching as well.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	5		Prerequisite(s): MND 101; MND 102; MND 201; Credit is allowed for only CHI 202 or MND 202
MSA	101	Elementary Arabic I	Introductory Arabic language focuses on pronunciation of Arabic sounds and basic writing skills. Students learn Arabic culture through standard greetings, common phrases, vocabulary and performance of appropriate social behaviors common in the Arab world which prepares students for work in global organizations.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Credit is allowed for only ARB 101 or MSA 101
MSA	102	Elementary Arabic II	Continuation of Elementary Arabic I, adopts different pedagogical approaches such as group practice, role play and situational dialogues to help increase listening, speaking, reading and writing skills. While linguistic elements are the focus, cultural and intellectual contexts provide a medium for understanding the Arab-Islamic world and the global business setting.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; Credit is allowed for only ARB 102 or MSA 102
MSA	201	Intermediate Arabic I	Directed to students who have completed the first two courses of college-level Arabic. Students reach an advanced level of oral proficiency through concentrating on new verbs, vocabulary and unique structures of sentences which enable them to master a highly sophisticated usage of the language.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; Credit is allowed for only ARB 201 or MSA 201
MSA	202	Intermediate Arabic II	Provides advanced ability to understand, read, write and communicate in Arabic and is directed to students who have completed the first two Arabic elementary courses and the first intermediate course. Focuses on transitive, intransitive and passive and active verbs which enable students to express themselves in highly sophisticated Arabic styles and discourse. Students study how Arabic people perceive and communicate important cultural, historical and economic themes as well as major historical figures and their contributions to Arabic society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	4		Prerequisite(s): MSA 101; MSA 102; MSA 201; Credit is allowed for only ARB 202 or MSA 202
MSC	115	Music Production Fundamentals	Introduces the basic tools and techniques of the "in the box" music production. Students begin to hone their production chops and create their own original and collaborative work in the process. Course is broken down into 4 modules: writing in the DAW, producing in the DAW, collaborating in the DAW and working in the DAW. Students experience a series of lectures to cover weekly topic(s); participate in in-class exercises and demos; and write, arrange and produce original material to be workshopped in class, both individually and collaboratively.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Credit is allowed only for MSC 115 or MSC 194 (Music Production Fundamentals)
MSC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	216	Popular Music Foundations	Menu of courses designed to lay the foundational knowledge in various areas of study.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): MSC 115 OR Visiting University Student

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MSC	221	Popular Music Lab	Menu of courses designed to build popular music-specific musicianship skills. Respective course topics serve as complements to the fields of study available in the popular music foundation series.	Y	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MSC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MSC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MSC	443	Popular Music Forum	Studio class that functions as a collaborative lab for all popular music students regardless of their musicianship specializations. Investigates various topics in popular music performance, composition and production. Students cultivate skills related to their musicianship specializations and develop aural skills and knowledge of music through participation in collaborative and solo projects, the study of recordings, and compositions.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition
MSC	451	Popular Music Indus Studies I	Familiarizes students with an overview of the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. Study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): minimum 45 hours
MSC	452	Popular Music Indus Studies II	Familiarizes students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on and offline promotion and marketing tools.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MSC 451 with C or better
MSC	474	Popular Music Specialization	A menu of courses designed to deepen specific aspects of student's musicianship in the context of popular music; each specialization course has an associated internship that provides students opportunities to apply what they are learning in a real-life context while also gaining additional skills and understanding.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Popular Music BA major; 2 hours of MSC 443 with C or better; Pre- or corequisite(s): MSC 451 with C or better if completed OR Visiting University Student
MSC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): minimum 45 hours
MSC	489	Popular Music Capstone Project	Summative presentation of the student's interests which demonstrates mastery of the student's chosen area of focus. This may include but is not limited to a creative project or experience with a focus in music industry studies; performing, songwriting, composing, film scoring, recording, producing, or promoting. Students gain a more advanced level of knowledge and understanding of the practice and philosophy of the music industry in order to launch or further their career as a professional popular musician.	N	RSC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Popular Music BA major; 6 hours of MSC 443 with C or better; 6 hours of MSC 474 with C or better
MSC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
MSC	551	Pop. Music Industry Studies I	Familiarizes students in the popular music industry, business, law and operations while contextualizing and including aspects of its history and development. This is accomplished through the study of the production of various popular and traditional music styles, specifically in the United States. Additionally, students study the music and the musicians of popular music throughout history and learn to recognize and apply aspects of creativity and innovation when developing a new product or business venture.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MSC	552	Pop. Music Industry Studies II	Familiarize students with aspects of starting and operating a business in the music industry. Students learn how to start a music production label, how to market new talent and how to release and promote their own music using up-to-date on- and offline promotion and marketing tools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MSC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MSC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MSE	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Credit is allowed for only MSE 208 or PHS 208

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MSE	211	Intro to Mechanics-Materials	Topics include stress, strain, elasticity, axial loading, torsion, bending, yield criteria, fracture, general energy methods and Castigliano's Theorem.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): PHY 121; PHY 122; MSE 250 with a C or better
MSE	212	Microstruc & Properties Lab	Lab experiments introducing optical and electron microscopy techniques, metallography and microstructure of metals, effects of composition and processing, and compositional identification.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Pre- or corequisite(s): MSE 211 OR Visiting University Student
MSE	215	Materials Synthesis	Introduces contemporary techniques for synthesizing both traditional and novel materials and the corresponding correlation to synthesized materials properties.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre- or corequisite(s): MSE 250 with C or better if completed OR Visiting University Student
MSE	250	Structure&Properties-Materials	Basic concepts of material structure and its relation to properties. Application to engineering problems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): CHM 114 or 113 with Pre- or corequisite(s): CHM 116 OR Visiting University Student ** DO NOT TOUCH REQUIREMENTS W/OUT SUPERVISOR APPROVAL!**
MSE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		
MSE	301	Materials and Civilization	Focuses on exploring how materials technology can change people's lives. Traces how societies evolved based on the access to materials and the ability to exploit them and trade them among nations. Studies the role of materials in a variety of contexts such as food, art, warfare, transportation, medicine, information and energy from the Stone Age through the industrial revolution to the modern world. Analyzes the connection between the dramatic developments in civilization and advances in materials through the lens of structure, properties and processing of materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Minimum Junior standing; Credit is allowed for only MSE 301 or 394 (Materials and Civilization)
MSE	308	Sensing the World	Project-oriented science course develops critical thinking and technical skill using Internet modules on the five senses.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	4	SQ	Prerequisite(s): MSE 208 OR Visiting University Student
MSE	330	Thermodynamics of Materials	Principles of statistical mechanics, statistical thermodynamics of single crystals, solutions, phase equilibrium, free energy of reactions, free electron theory, and thermodynamics of defects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials Science and Engineering minor; MSE 250 with C or better; Pre- or corequisite(s): MAT 274 or 275 with C or better if completed OR Visiting University Student
MSE	335	Materials Kinetics	Introduces kinetics in processing of materials as illustrated through real-world materials processing examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or students with approved Materials minor; MSE 330
MSE	355	Structure and Defects	Intermediate-level grounding in crystallography, crystal defects, surfaces and interfaces.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s): Fulton Engineering undergrad stdnt or Material Scie & Engineering minor; MSE 250 w/ C or better; Pre- or coreq(s): MAT 267 or 272 w/ C or better if completed; MAT 242, 342, or 343 OR Fulton Engineering grad stdnt OR Visiting University Student
MSE	356	Thin Film & Microelec Dev Lab	Lab experiments correlating atomic structure, defects and microstructure of processed metals, ceramics polymers and composites to their mechanical and thermal properties.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Pre- or corequisite(s): MSE 355 OR Visiting University Student
MSE	415	Math/Computer Mthds-Materials	Mathematical, computational, and statistical methods and computer programming used to model materials science phenomena and materials engineering applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	CS	Prerequisite(s) w/ C or better: Fulton Engr undergrad stdnt or Materials Scie & Engr minor; MAT 267 or 272; MAT 274 or 275; MSE 250; Credit is allowed for only MSE 415 or MSE 511 or MSE 598 (Math & Comp Methods in Materials) OR Visiting University Student
MSE	420	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student; MSE 355 with C or better; Credit is allowed for only MSE 420 or MSE 514
MSE	421	Physical Metallurgy Laboratory	Focuses on analysis of microstructure of metals and alloys and includes correlation with mechanical properties to some extent.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Materials Science & Engineering BSE major or minor; MSE 355 with C or better

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MSE	435	Computational Matrl Sci & Engr	Computer simulation has become a tool for the advancement of our understanding of fundamental material physics and practical material applications. Provides an introductory understanding of concepts and techniques for the modeling and simulations of materials on a wide spectrum of length scales, ranging from atomic to macroscopic. Accordingly, discusses a variety of computational modeling: particle-based simulations (Monte-Carlo and molecular dynamics); mesoscale methods (cellular automaton and phase-field modeling); and continuum models (finite-element analysis, stochastic microstructure reconstruction). Recommend a background in or working knowledge of a computer programming language (C/ C++ /FORTRAN /MATLAB) linear algebra, differential equations, thermodynamics and statistical mechanics. Reviews the essence of the C/C++ programming language and explains example codes to make the course accessible to students with minimal programming experience.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): MSE 250 with C or better; PHY 121 with C or better; Credit is allowed for only MSE 435 or MSE 494 (Introduction to Computational Materials) or MSE 598 (Introduction to Computational Materials) OR Visiting University Student
MSE	440	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering BSE major or minor; MSE 335; MSE 355 with C or better; Credit is allowed for only MSE 440 or MSE 516 OR Visiting University Student
MSE	442	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 442 or MSE 494 (Fatigue, Fracture, Creep) or MSE 540
MSE	450	Intro Materials Characterizatn	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; PHY 131; MSE 355; Credit is allowed for only MSE 450 or MSE 510
MSE	451	Nanomat & Electronics Char Lab	Lab for materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LAB	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering undergraduate student or Materials Science and Engineering minor; Corequisite(s): MSE 450 OR Visiting University Student
MSE	457	Quantum Mechanics:Atoms&Solids	The effect on quantum mechanics on the electronic structure and properties of atoms and solid materials.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering student or Materials Science and Engineering minor; MAT 275 with C or better; MSE 250 with C or better; PHY 131 with C or better OR Visiting University Student
MSE	458	Electronic,Mag,Optical Prpties	Electrical, optical, and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Science and Engineering student; MSE 457; Credit is allowed for only MSE 458 or MSE 515
MSE	460	Nanomtlis in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 250; Credit is allowed for only MSE 460 or MSE 494 (Nanomat. In Energy Production) or MSE 560 or MSE 598 (Nanomat. In Energy Production)
MSE	466	Electrochemical Energy Storage	Electrochemical concepts relevant to real-world devices. Discusses basic electrochemical principles with an emphasis on solid-state electrochemistry and the nature of the solid-electrolyte interface in order to give students the background knowledge needed for understanding and analyzing real device performance of, e.g., batteries, solar hydrogen generation, photoelectrochemical cells, electrocatalysts, electrochemical capacitors, fuel cells. Critically evaluates media reports and journal publications describing electrochemical energy conversion and storage devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s): CHM 114 or 116; PHY 121; PHY 131; MSE 250; Pre- or coreq(s): CHE 342, MAE 241 or MSE 330; Credit for only CHE 494, CHE 598, MAE 494, MAE 598, MSE 494, MSE 598, or NAN 598 (Electrochemistry Energy Conversion & Storage) or MSE 466 or MSE 566

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MSE	470	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prereq(s) w/ C or better: Fult Engrn undergrad or Materials minor; CEE 213, MAE 213, or MSE 211; MAT 242, 342, or 343; MSE 250 or Aerospace major w/ MAE 325; Credit allowed for only MAE 455 or MAE 513 or MSE 470 or MSE 513 OR Visiting University Student
MSE	471	Introduction to Ceramics	Principles of structure and property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering undergraduate student or Materials minor; MSE 355 OR Visiting University Student
MSE	476	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering major or Materials minor; MSE 250 with C or better; Credit is allowed for only MSE 476 or MSE 519
MSE	482	Materials Engineering Design	Principles of the design process. Feasibility and optimization. Manufacturing processes, materials selection, failure analysis, and economics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3	L	Prerequisite(s): Materials Science and Engineering BSE major; ENG 101, 105, or 107 with C or better; MSE 211 with C or better; MSE 355 with C or better OR Visiting University Student
MSE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		
MSE	489	Capstone Design Project I	Covers how to plan an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 & 490 must be taken to secure L General Studies designation.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1	L	Prerequisite(s): Materials Science and Engineering BSE major; ENG 101, 105, or 107 with C or better; Corequisite(s): MSE 482
MSE	490	Capstone Design Project II	Students learn how to conduct an open-ended design project, including experience with technical writing and technical presentations. Both MSE 489 and 490 must be taken to secure L General Studies designation.	N	RSC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	2	L	Prerequisite(s): Materials Science & Engineering BSE major; ENG 101, 105, or 107 with C or better; MSE 482; MSE 489
MSE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6		Prerequisite(s): Barrett Honors student
MSE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MSE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Prerequisite(s): Fulton Engineering undergraduate student OR Visiting University Student
MSE	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-7		Prerequisite(s): Fulton Engineering undergraduate or graduate student
MSE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-3		
MSE	501	Linear Algebra in Engineering	Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students, except Computer Engineering (Comp Sys or Elec Engr) MS or PhD, or Electrical Engineering MS, MSE, or PhD, or Electrical Engineering (AME) MS or PhD student; Credit is allowed for only MAE 501 or MSE 501
MSE	502	Partial Differential Equations	Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MAE or MSE 502
MSE	503	Concepts in Materials Science	Familiarizes students with fundamental concepts and terms used in MSE. Introduces the relationship between structure-processing-property-performance-characterization. From this point, explores crystal structure, symmetry and defects. After which, introduces fundamental theory of diffusion, kinetic and phase transformation and gives examples of their impact on the material. Next, presents the correlation between structure-processing-property on performance. Throughout the course, exposes concepts of materials characterization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate students; Credit is allowed for only MSE 503 or MSE 598 (Concepts in Materials Science)

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MSE	510	Intro to Materials Characteriz	Introduces materials characterization techniques for analysis of thin films and bulk materials by TEM, SEM, XRD, XPS, and AES.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 450 or 510
MSE	511	Math and Comp Methods Material	Mathematical, computational and statistical methods and computer programming used to model materials science phenomena and materials engineering applications. Prior completion of undergraduate-level calculus, differential equations, and linear algebra needed for success in the course.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 415 or MSE 511 or MSE 598 (Mathematical and Computer Methods in Materials)
MSE	513	Polymers and Composites	Relationship among chemistry, structure, and properties of engineering polymers. Design, properties, and behavior of fiber composite systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering or Science & Engr of Materials student; Credit is allowed for only MAE or MSE 513
MSE	514	Adv Metal Alloys & Processes	Phase diagrams, structural alloys, additive manufacturing and metallurgy processing, materials selection and high entropy alloys.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton graduate student; Credit is allowed for only MSE 420 or MSE 514
MSE	515	Electronic,Magnetc,Optical Prop	Electrical, optical and magnetic properties of solids and microstructure effects as examined through materials-based examples.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 458 or MSE 515
MSE	516	Mechanical Behavior Materials	Effects of environmental and microstructural variables of mechanical properties, including plastic deformation, fatigue, creep and brittle fracture.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 440 or MSE 516
MSE	517	Introduction to Ceramics	Principles of structure, property relations in ceramic materials. Processing techniques. Applications in mechanical, electronic, and superconducting systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering OR Science and Engineering of Materials student
MSE	519	Growth&Processing of Semicond	Briefly introduces semiconducting materials and emphasizes the characteristics of defects in semiconductors and their influence on electronic properties. Covers principles of growth of bulk crystals, epitaxial growth, oxidation, diffusion, ion implantation, and metallization. Discusses the introduction of defects during growth and processing of semiconductors and their influence on device behavior.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisite: Graduate Engineering student; Credit is allowed for only MSE 476 or 519
MSE	523	Structural&Mech Prop of MatrIs	Designed for first-year PhD students in the School of Materials. Topics include crystallography theory, tensor properties of materials, elasticity, crystal defects, dislocation theory, plasticity, fracture, fatigue, and creep.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	524	Advanced Thermodynamics	Equilibrium thermodynamics. Chemical reactions, phase equilibria, and stability in multicomponent systems. Aqueous solutions and electrochemistry. Introduces statistical thermodynamics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only CHM 541 or MSE 524
MSE	525	Fund of Mat Elec/Opt/Mag/Therm	Behavior of materials; electronic band structure, electronic and ionic conduction, electronic processes in semiconductors, dielectric, optical and magnetic properties. Emphasizes the fundamental understanding of material properties while establishing structure-property relations. Aims to link these properties to applications in optoelectronics, photonics and optics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
MSE	526	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 526 or NAN 511 or PHY 511
MSE	527	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
MSE	540	Fracture, Fatigue, and Creep	Relationship between microstructure and fracture; fatigue and creep properties of materials. Environmental effects and recent developments. Current theories and experimental results.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Pre-requisites: Graduate Engineering student; Credit is allowed for only MSE 442, 494 (Fatigue, Fracture, Creep) or 540
MSE	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only NAN 546 or MSE 546 or PHY 546
MSE	548	Fund of Microelectronics Pack	Multidisciplinary course in addressing electrical, thermal, materials, chemical, manufacturing, and reliability problems in packaging.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Fulton Engineering student. Credit is allowed for only CHE 518 or EEE 518 or MAE 518 or MSE 475 or MSE 548

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MSE	550	Adv Materials Characterization	Analytical instrumentation for characterization of materials: SEM, SIMS, Auger, analytical TEM, and other advanced research techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 552 or NAN 552 or PHY 552 or SEM 552
MSE	553	Electron Microscopy Lab I	Lab support for MSE 552.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553
MSE	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent-beam diffraction, and electron holography. Novel developments and applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 554 or PHY 554
MSE	555	Electron Microscopy Lab II	Lab support for MSE 554.	N	LAB	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 555 or PHY 555
MSE	560	Nanomtlms in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major. Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
MSE	561	Kinetics&Phase Trans in Solids	Hetero/homogeneous diffusion-controlled transformations, order-disorder transformations, and shear martensitic) athermal transformations in solids. Courses in advanced thermodynamics and structure and properties of materials are strongly recommended in preparation for this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	566	Electrochemical Energy Storage	Electrochemical concepts relevant to real-world devices. Discusses basic electrochemical principles with an emphasis on solid-state electrochemistry and the nature of the solid-electrolyte interface in order to give students the background knowledge needed for understanding and analyzing real device performance of, e.g., batteries, solar hydrogen generation, photoelectrochemical cells, electrocatalysts, electrochemical capacitors, fuel cells. Critically evaluates media reports and journal publications describing electrochemical energy conversion and storage devices.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Materials Scie, Chem Engineering, Mech Engineering, Chem or Physics graduate stdnt; Credit for only CHE 494, CHE 598, MAE 494, MAE 598, MSE 494, MSE 598, or NAN 598 (Electrochemistry Energy Conversion & Storage) or MSE 466 or MSE 566
MSE	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only MSE 571 or NAN 571 or PHY 571
MSE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Prerequisite(s): Ira A. Fulton Engineering graduate student
MSE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student

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MSE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-4		Prerequisite(s): Fulton Engineering graduate student
MSE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-12		Pre-requisite: Materials & Science Engineering Masters student
MSE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student
MSE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1		Prerequisite(s): Fulton Engineering graduate student
MSE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Materials Science and Engineering Program	1-15		Pre-requisite: Materials Science & Engineering PhD student
MSI	601	Cont Topics in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from the arts and other disciplines that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	602	Curr Issues in Music Research	Required for all PhD in Music students. Content includes readings and discussions of topics drawn from current public policies, events, and popular culture that impact and interact with music, music practices, and music research. Requires literature review or research paper.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): doctoral Music students
MSI	755	Historical Research in Music	Required for all PhD in Music students. Knowledge and insights related to conducting historical research in music. Includes development of a mini-proposal for a dissertation on the history of music education, or draft of a historical research paper suitable for presentation or publication.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music students
MTC	123	Beginning Composition	Intended for freshmen and sophomores in the composition concentration. Introduces composing. May be repeated for credit.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theory and Composition (Composition) BMUS major OR Visiting University Student
MTC	125	Basic Music Theory	Notation, scales, keys, modes, intervals, chords, basic part writing and composition. Development of related aural skills through sight-singing and dictation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Digital Culture (Music) major, Music major, Performance and Movement major, Music Performance minor, or Music Theatre minor OR Visiting University Student
MTC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	221	Music Theory: 18th Century	Styles, techniques, and idioms of 18th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 125 with C or better
MTC	222	Music Theory: 19th Century	Styles, techniques, and idioms of 19th-century music; emphasis on analysis, composition (part writing), and related aural skills, with applications for performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 221 with C or better OR Visiting University Student
MTC	223	Music Theory: 20th Century	Styles, techniques, and idioms of 20th-century music; emphasizes innovative treatments of musical elements, analysis, and composition; related aural skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better
MTC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	320	Modal Counterpoint	Counterpoint based on 16th-century vocal polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better
MTC	321	Tonal Counterpoint	Counterpoint based on 18th-century polyphonic style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music student; MTC 221 with C or better
MTC	323	Composition	Writing music compositions, with emphasis on basic techniques and smaller structures. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): MTC 123 with C or better OR BMUS Theory and Composition (Composition) or BMUS Theory and Composition (Theory) major with minimum 55 hours OR Visiting University Student

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MTC	327	Intermediate Form and Analysis	Organizing elements in the most important contrapuntal and homophonic musical forms from the Renaissance through the 19th century.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 222 with C or better OR Visiting University Student
MTC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	415	Scoring for Jazz Ensembles I	Analyzes scores and recordings, application of orchestration and four and five-part harmonization techniques frequently used in arranging for the contemporary jazz ensembles and studio orchestra.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major who has passed audition; MUP 236 with C or better
MTC	416	Scoring for Jazz Ensembles II	Analyzes scores and recordings, application and creation of new arrangements for contemporary jazz ensembles and/or studio orchestra.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major who has passed audition; MTC 415 (MTC 315) with C or better
MTC	422	Musical Acoustics	Properties of sound and tone. Harmonic series, instruments, the ear, auditorium acoustics, and the reproduction of sound. Assumes a thorough knowledge of musical notation, intervals, scales, and harmony, or 2 years of music theory.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; Passed audition
MTC	425	Studies 20th- & 21st-C. Theory	Continued development of analytical techniques and aural skill, with an examination of theoretical systems applicable to 20th- and 21st-century music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student who has passed audition; MTC 223 with C or better
MTC	428	Advanced Form and Analysis	Organizing principles of the large forms of musical composition in the 19th and 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music student; MTC 223 with C or better
MTC	429	Canon and Fugue	Writing of canons and fugues in tonal style.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 321 with C or better OR Visiting University Student
MTC	430	20th- & 21st-Cent Counterpoint	Counterpoint studies utilizing 20th- and 21st-century idioms.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MTC 223 with C or better OR Visiting University Student
MTC	433	Orchestration	Studies scoring music for full and chamber orchestras; examines individual orchestral instruments (characteristics and performance techniques). Requires a working knowledge of a computer music notation program.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major
MTC	436	Electronic Studio Techniques I	The study of computer music systems emphasizing advanced audio synthesis and resynthesis as well as their application to professional compositional environments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Digital Culture (Music) major or MTC 223 OR Visiting University Student
MTC	437	Elec Studio Techniques II	Principles of digital electronic music systems and their applications in the composition of electronic music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	440	Jazz Theory and Ear Training	Advanced study of jazz harmonic systems. Daily oral drills.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MTC	441	Jazz Composition	Creative writing in the smaller forms and in the idiom of jazz.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music student; MTC 440; MUP 236 with C or better
MTC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MTC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MTC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MTC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MTC	495	Final Project	Half recital of compositions or approval of a large-scale composition or a research paper.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		
MTC	496	Theory Project	Supervised individual writing project dealing with music theory.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MTC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MTC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	516	Baroque Music	Detailed analysis of selected examples of music from the Baroque period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	517	Classic Music	Detailed analysis of selected examples of music from the Classic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	518	Romantic Music	Detailed analysis of selected examples of music from the Romantic period.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	519	Late 19th-Early 20th Cen Music	Detailed analysis of selected examples of music from the late 19th and early 20th centuries.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	520	Analytical Techniques	Analytical techniques systematically applied to music. Concentration on structural and compositional procedures.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	523	Advanced Composition	Advanced music composition, including complex techniques and larger structure. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Pre-requisite: Graduate Music student

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MTC	525	Pedagogy of Theory	Practices and principles of teaching music theory. Emphasizes most desirable and practical offerings possible. Comparative studies of existing practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	535	Rhythm and Meter Studies	Exposes students to seminal research in rhythm and meter studies with the aim of introducing a range of methodologies and common issues found in this area of research. Reading assignments include music theory and music cognition literature relating to questions of rhythm and meter in diverse repertoires, including classical, post-tonal, world, and popular music genres. Students reflect on the strengths and weaknesses of various approaches, analytical techniques, and the implications that theories of rhythm and meter have for performance practice and write and present a final research paper on a topic relating to rhythm and meter studies.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student; Credit is allowed for only MTC 535 or MTC 591 (Survey of Rhythm and Meter Studies)
MTC	540	Jazz Theory and Ear Training	Surveys some of the most influential trends in the jazz tradition with in-depth analysis of harmonic systems, linear elements, and compositional strategies.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Music student
MTC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MTC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
MTC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Pre-requisite: Graduate Music student
MTC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Graduate Music student
MTC	723	Advanced Composition	Special problems in writing in complex forms and textures.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): doctoral Music student
MTC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MTC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MTE	210	Mentored Tutoring Internship	Introduces math education students to issues of balancing the content of precalculus mathematics with the needs of someone learning it. Addresses core issues, including articulating what is involved in learning the mathematical idea(s); interpreting students' questions; analyzing student thinking and inferring their underlying rationale from a learner-centered perspective; techniques of question-posing, problem-posing, and instructional scaffolding.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Co-requisite: MAT 207
MTE	250	Tech and Math Visualization	Uses several software packages for exploring mathematics and for preparing mathematical materials, starting from introductory skills and leading to advanced techniques. Places particular emphasis on using computer software with the aim of visualizing mathematical relationships, structures, and processes.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MAT 270 with C or better; MTE 210 with C or better OR Visiting University Student

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MTE	280	Numb Oper&Prop Reas K-8 Teach	Investigation of mathematical principles and processes regarding the real number system and its properties develop number sense and qualitative reasoning abilities. Designed to meet the requirements for preservice elementary school teachers.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student
MTE	281	Inves Space: Geom, Meas & Vis	Explores three aspects of geometry: spatial visualization, measurement, and proof. Uses visualization, spatial reasoning, and geometric modeling to solve problems. Provides opportunities for participants (1) to use physical models, technology, and pattern-finding strategies to identify properties of and develop formulas for measuring two- and three-dimensional shapes; and (2) to develop powerful ways of thinking to justify geometric relationships	N	PRA	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): General Studies MA course with C or better OR Visiting University Student
MTE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MTE	301	Invst Chng Ptm, Func & Model	Examines different conceptions of algebra as the study of (1) generalized arithmetic, (2) reasoning with symbols, (3) reasoning with patterns and functions, (4) structure in the number system, and (5) modeling. Distinguishes arithmetic from algebraic reasoning, and develops an appreciation for the pervasiveness of the function concept in the K-8 school mathematics curriculum. Features algebraic thinking and representation using algebra tiles and other concrete models, realistic problems, dynamic geometry software, graphing calculators, and a variety of virtual tools and Web sites. Topics include, but are not limited to: patterns, relations, functions and covariational thinking; multiple conceptions of quantity, variables, constants, and unknowns; inductive, deductive, and analogical reasoning; rate of change and proportional thinking; algebra learning trajectories; and comparisons of additive vs. multiplicative, absolute vs. relational, and arithmetic vs. algebraic thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
MTE	310	Nbr Spatial MeasureData ErlyCh	Focuses on key concepts in counting, number operations, spatial relations, measurement and data in early childhood education. Prospective teachers acquire content knowledge by using physical models, technology and pattern-finding strategies to explore the progressions of these concepts from birth to grade 3.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MAT 117 or 142 or higher; MTE 280 OR Visiting University Student
MTE	311	Geom, Alg, Stats & Prob K-8	Focuses on key concepts needed to prepare K-8 teacher candidates to teach in algebra, geometry, measurement, data, probability and statistics. Prospective teachers will (1) use physical models, technology, and pattern-finding strategies to explore the trajectories of these concepts; and (2) develop strategies to predict, generalize, and justify decisions based on data, statistics and probability.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): MTE 280 OR Visiting University Student
MTE	320	Fnd of 7-12 Math Curr Assess	Focuses on concepts of mathematics curricula and their relationships to perspectives on learning, instruction, and assessment. Using a variety of participation formats (e.g., individual and small group work, and whole group discussions) and directed activities, participants examine curricular principles underlying the historical development of mathematics curricula and assessment, and current curricula and curricular recommendations and controversies surrounding them.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 207 with C or better; MTE 210 with C or better; MTE 250 with C or better
MTE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	412	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
MTE	430	Dvpmnt of Mathematical Thinking	This capstone course requires students' sustained engagement with, and analysis of, artifacts from research on learning mathematics from instruction. The artifacts include: curricular/instructional task sequences, samples of student work, video-cases showcasing students' involvement in instruction, problem-solving interviews, and teaching experiments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 320 with C or better OR Visiting University Student
MTE	482	Mthds Teaching Math Sec School	Examines secondary school curricular material and analyzes instructional devices. Teaching strategies, evaluative techniques, diagnosis, and remediation and problem solving.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 310 with C or better; admission to the Professional Program

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MTE	483	Mathematics-Secondary School	Topics in geometry, number theory, algebra, and analysis. Emphasizes unifying principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 310 with C or better
MTE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	485	Teaching Standards-Based Math	Course for secondary mathematics students at rural campuses. Offers a detailed exploration of the Arizona Mathematics Standards (AMS) for middle school and high school. In addition to an in-depth coverage of the AMS content and practices, students engage with, review and analyze existing instructional task sequences addressing the AMS. Students also design and construct partial and complete lesson plans to cover specific mathematical content and practices.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 271 or minimum 45 hours
MTE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
MTE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MTE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
MTE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
MTE	501	RUME I	Research in Undergraduate Mathematics Education I (RUME I) covers academic research in (undergraduate) mathematics education. Develops the ability to read, discuss, criticize and draw practical conclusions from research in (undergraduate) mathematics education, all with the overarching aim of broadening perspective on areas of past and current mathematics education research. Research on the learning and teaching of undergraduate mathematics is one of the foci of the course. Students read research literature drawn from a variety of content areas and grade bands: quantitative reasoning, early learning of algebra, proportional reasoning, algebra and functions, calculus, statistics and probability. Prepares for Part 1 of the qualifying exam in mathematics education	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MTE 501 or MTE 598 (Research in Undergraduate Mathematics I)
MTE	502	RUME II	RUME II is the second course in a core four-course sequence in the mathematics education doctoral program. Explores research on problems in the teaching and learning of algebra, geometry, calculus and probability as seen from multiple theoretical perspectives. Develops ability to read, discuss, criticize and draw practical conclusions from research in mathematics education, all with the overarching aim of broadening perspectives on areas of past and current mathematics education research. RUME II builds on its prerequisite in a subtle but important way. Increased emphasis and focus on theory in mathematics education research—a consideration of various types of theories and the roles they may play in the research endeavor. Also prepares for the required qualifying exam	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 501; Credit is allowed for only MTE 502 or MTE 598 (Research in Undergraduate Mathematics II)
MTE	503	RUME III	RUME III is the third course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students learn different methods for implementing data collection and analysis, reporting results; and continue to conduct a pilot study with the goal of developing a dissertation proposal from their research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 502; Credit is allowed for only MTE 503 or MTE 598 (Research in Undergraduate Mathematics III)

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MTE	504	RUME IV	RUME IV is the fourth and final course in a series of mathematics education courses designed to prepare students to conduct independent mathematics education research. Students continue to conduct a pilot study with the goal of developing a dissertation proposal from their research. Continues developing the student's ability to: synthesize research literature in a specific area of mathematics education, refine research statement and question(s) to advance knowledge in a specific area of mathematics education, refine design and methods for conducting a study, analyze research data using theoretical constructs, describe results of analysis, report findings using theoretical constructs and submit a paper for publication.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MTE 503; Credit is allowed for only MTE 504 or MTE 598 (Research in Undergraduate Mathematics IV)
MTE	585	Modern Geometry for Teachers	Euclidean, projective, and non-Euclidean geometries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		
MTE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MTE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
MTE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MTE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
MTE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
MUD	521	Adv Urban Design Studio I	Explores urban design with emphasis on the nexus of urban systems and the significance ecology plays in the design process. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice, and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): Urban Design MUD student; Credit is allowed for only MUD 521 or MUD 590 (Advanced Urban Design Studio I)

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MUD	522	Adv Urban Design Studio II	Explores urban design with emphasis on urban design and human health. Studio-based course includes reading, presentations by faculty and students, discussion, design research, conceptual design practice and the public exhibition/presentation of this work in multiple formats.	N	STO	N	GNA	Herberger Institute for Design and the Arts	The Design School	5		Prerequisite(s): MUD 521 with C or better; Credit is allowed for only MUD 522 or MUD 590 (Advanced Urban Design Studio II)
MUD	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUD	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUD	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-4		
MUD	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	The Design School	1-12		
MUD	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	Herberger Institute for Design and the Arts	The Design School	1		
MUE	101	ASU School of Music Experience	Introduces all new first-time ASU students to the unique elements, culture, challenges and opportunities of their university, the School of Music and the Herberger Institute for Design and the Arts. Covers the music education and music therapy programs in the School of Music.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUE 101 or MUE 194 (ASU School of Music Experience for Music Education) OR Visiting University Student
MUE	110	Introduction Music Education	Overview of music education and career options. Orientation to student characteristics, teacher roles, teaching qualities, and philosophical and historical foundations. Requires school observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major

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MUE	154	Gesture and Sound	Covers fundamentals of musical leadership through gestures associated with sounds in the performance of music.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUE	161	Introduction to Music Therapy	Overview of the profession of music therapy and its applications in mental health, rehabilitation, and special education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	162	Intro to Music Therapy Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Education or Music Therapy major; Corequisite(s): MUE 161 OR Visiting University Student
MUE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	211	Music in Recreation	Materials, methods, and organizational structures appropriate for recreational music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		
MUE	260	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major
MUE	261	Music Therapy Treatment	Orientation to preclinical experience with emphasis on observation skills, assessment, goal setting, and professional ethics. Requires off-campus observations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music student; MUE 161 with C or better
MUE	262	Mus Therapy Behav Science Lab	Develops skills needed to lead music experiences in a variety of settings.	N	LAB	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Corequisite(s): MUE 261
MUE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	310	Music in Early Childhood	Examines music through the lens of the culture(s) of young children, which (though they intersect with adult cultures) are unique, different from adult experiences, and particular to them. Emphasizes the musical content of children's songs as well as the music they hear, and the kinds of musical engagements that are particular to young children. Also emphasizes the uses, functions, and meanings of music for children.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102 with C or better; minimum 30 hours
MUE	311	Music for Children and Youth	Examines the role of music in the lives of young people with particular attention to child and youth learning and development (cognitive, social, emotional, personal/identity, musical). Includes examination and critique of music intended for children and youth (e.g., social and gendered meanings), as well as consideration of how music is related to individual and social identity.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): BLE 220, RDG 291, SPE 222 or TEL 215, or minimum 30 hours OR Visiting University Student
MUE	317	Strings Lab	Students apply educational theory to the development and refinement of specialized skills in string teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	319	Digital and Hybrid Lab	Provides a foundation for integrating a range of technologies and digital media in music teaching and learning. Encourages critical and creative thinking while considering the possibilities for innovative applications of technology and digital media based upon contemporary curricular, theoretical and pedagogical frameworks. Students demonstrate skills and understanding related to using technology and digital media in the context of musicianship, music teaching and learning.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUE	321	Jazz Lab	Jazz rehearsal and performance techniques and repertoire appropriate for rehearsing jazz ensembles in K-12 schools.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 321 or MUE 394 (Jazz Lab)
MUE	323	Keyboard Lab	Piano keyboard skills appropriate for music educators.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 132 with C or better; minimum 45 hours; Credit is allowed for only MUE 323 or MUE 394 (Keyboard Lab) OR Visiting University Student
MUE	325	Voice/Choral Lab	Skills for developing voices and rehearsing choral ensembles.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 110; Credit is allowed for only MUE 325 or MUE 394 (Voice/Choral Lab) OR Visiting University Student
MUE	327	Brass Lab	Students apply educational theory to the development and refinement of specialized skills in brass teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	334	Guitar Lab	Guitar skills for teaching guitar classes in K-12 schools.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Education major; Credit is allowed for only MUE 334 or MUE 394 (Guitar Lab) OR Visiting University Student

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MUE	335	Educational Methods for Guitar	Students apply educational theory to the development and refinement of specialized skills in guitar teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music major; Passed music education or therapy interview
MUE	336	Percussion Lab	Students apply educational theory to the development and refinement of specialized skills in percussion teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	337	Woodwinds Lab	Students apply educational theory to the development and refinement of specialized skills in woodwind teaching. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Music major; Passed music education interview
MUE	381	Music Therapy Research	Statistics and research design appropriate for investigations in music therapy.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Music Therapy student; ENG 101, 105, or 107 with C or better OR Visiting University Student
MUE	384	Therapy Practicum I	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	385	Therapy Practicum II	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	386	Therapy Practicum III	Individual placement in ASU Music Therapy Clinic.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	387	Therapy Practicum IV	Practicum students provide music therapy to members of the community for a minimum of ten clock hours.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	388	Therapy Practicum V	Individual clinical work in a community mental health facility.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; MUE 261 with C or better
MUE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisites: Music Education or Music Therapy student
MUE	413	Art of Teaching Children Music	Methods of instruction, planning, and presentation of appropriate contents in music. For music educators and music therapists.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music student OR Visiting University Student
MUE	415	Art of Teach Contemp Musicians	Curriculum, student characteristics, and teaching strategies for general music.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major who has passed audition
MUE	434	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy major; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation) OR Visiting University Student
MUE	436	Perc Methods Music Therapy	Provides knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy student
MUE	441	Psychology of Music	Psychological and physiological aspects of music emphasizing musical behavior, function, perception, and learning.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUE	463	Music Therapy Theory & Prac II	Organization, administration, and use of music in rehabilitation with various client populations.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy student; MUE 467 with C or better
MUE	465	Child Music for Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy student; Minimum Junior standing
MUE	467	Music Therapy Theory & Prac I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy major; MUE 261 with C or better OR Visiting University Student
MUE	475	Group Process/Music Therapy	Principles of group process, verbal counseling, professional writing, as related to music therapy practice.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music Therapy student; MUE 463 (MUE 362) with C or better or Graduate student in Clinical Music Therapy OR Visiting University Student
MUE	476	Internship in Music Therapy	Full-time, 6-month, off-campus residency in an approved clinical institution.	N	PRA	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music Therapy major
MUE	480	Art of Teach Choral Musicians	Methods of instruction, organization, and presentation of appropriate content in choral music classes.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major who has passed audition; minimum 55 hours
MUE	481	Art of Teaching Beg Insts	Instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major who has passed audition; minimum 55 hours
MUE	482	Art of Teaching Adv Insts	Advanced instrumental music as a means of developing music skills, understandings, and attitudes in elementary and secondary school students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major who has passed audition; minimum 55 hours
MUE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		

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MUE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MUE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUE	501	Intro to Music Therapy	Introduces the profession of music therapy through lecture, active discussion, and observations of clinical sessions. Experiential learning is achieved through music making in peer groups.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	534	Health Rhythms Drum	Hand drumming and facilitation for group leaders in music therapy, music education, community music and related disciplines.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student; Credit is allowed for only MUE 434 or MUE 494 (Health Rhythms Drum Facilitation) or MUE 534 or MUE 598 (Health Rhythms Drum Facilitation)
MUE	536	Perc Methods Music Therapy	Designed to provide knowledge and practical performance skills on percussion instruments, further improving the effectiveness of the student in the practice of music therapy. 3 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM Student
MUE	548	Intro to Research in Music Ed	Survey of research methods and literature in music education. Focuses on interpretation and evaluation.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	549	Foundations of Music Education	A treatment of historical perspectives, philosophy-aesthetics identified with music education, and learning theories applied to music teaching/learning. Basic research and writing skills appropriate to graduate studies in music education.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	550	Studies in Music Curricula	Scope and sequence of musical experiences. Develops criteria for the evaluation of music curricula.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	551	Listening and Creating	Studies the nature of music listening and music creating and their relationship. Reviews research and pedagogical practices.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
MUE	555	String Pedagogy & Reh Techs	String pedagogy and orchestral rehearsal skills for teachers who work with K-12 string classes.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only MUE 555 or MUE 598 (String Pedagogy and Rehearsal Techniques)
MUE	559	Social/Cult Studies in Mus Ed	Considers how music education is shaped by social and cultural concepts.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Music student; Credit is allowed for only MUE 559 or MUE 598 (Social and Cultural Studies in Music Ed)
MUE	560	Jazz Pedagogy	Study of pedagogy, repertoire, and technique of instruction in jazz styles, ensemble techniques, and performance practice for school ensembles.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	563	Theory and Prac in MT II	Organization, administration, and use of music in rehabilitation with children and adolescents with special needs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM major; MUE 581 with C or better
MUE	564	Instr Music/Adv Rehearsal Tech	In-depth analysis of instrumental techniques in preparation for a thorough discussion of band tuning problems and solutions. Discussion of productive conducting and rehearsal techniques for school music teachers.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	565	Children's Music Music Therapy	Methods of music therapy instruction, planning, and presentation of appropriate contents in music for children ages 2-12.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Music Therapy Graduate student
MUE	566	Instr Lit&Pedagogy for Schools	Provides an in-depth examination of ensemble music and teaching techniques to instrumental music teachers.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	567	Professional Practicum	Students provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): graduate Music Therapy student
MUE	568	Choral Music/Ad Rehearsal Tech	Musical and vocal techniques necessary for presentation of choral literature. Analysis and experimentation with psychological, acoustical, and other problems of rehearsal and performance.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student

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MUE	569	Professional Practicum II	Students continue to provide music therapy for small groups at a community agency providing services to people who are intellectually disabled, physically disabled, and the elderly.	N	PRA	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music Therapy graduate student; MUE 567 with C or better
MUE	570	Choral Literature for Schools	Comprehensive study and analysis of choral music for the high school with special emphasis on octavo literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	571	Music Therapy Sem I: Supr & Ad	Covers health care administrative skills pertinent to music therapy practice, including budgeting, resource allocation, and staff supervision.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student
MUE	572	Music Therapy Seminar II	Deepens and broadens knowledge and skills in music therapy clinical practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUE	573	Music Therapy Seminar III/Lab	Explores current theory in music therapy and develops the theoretical basis for the profession.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Music Therapy MM student
MUE	574	Special Topics in Mus. Therapy	Introduces graduate students to advanced music therapy topics related to clinical practice.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy MM student
MUE	575	Music Therapy Music Skills	Teaches new forms of musical accompaniment pertinent to music therapy practice, broadening and deepening existing skills.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Music Therapy MM student
MUE	579	Psychology of Music	Nature of musicality and its evaluation. Review of recent research.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music graduate student
MUE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	581	Theory and Prac in MT I	Influence of music on behavior; principles and practices of music therapy and psychiatric clients.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music Therapy graduate student
MUE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	586	Music Therapy Grad Clinical Pr	Develops clinical- and research-based music therapy skills in selected cognate area.	N	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-6		Pre-requisites: MUE 571, 572, 574, and 575
MUE	589	Repertoire for Music Therapy	Music skills repertoire for music therapy, including units on brass, strings, woodwinds, electronic instruments, computer music, and improvisation techniques.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music Therapy MM Student
MUE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music graduate student
MUE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music graduate student
MUE	754	Teacher Ed Research Policy	Reading and discussion of research and policy documents in teacher education with a focus on arts and music teacher preparation. Includes development of a research project or essay suitable for publication or presentation, an abbreviated prospectus for a dissertation, or literature review.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	756	Qual Research Music Teaching	Studies qualitative research and methods in music education, including readings and discussion, data collection and data analysis. Includes development of an abbreviated prospectus for a qualitative dissertation, or a draft of a qualitative research paper suitable for presentation or publication. Prerequisite: doctoral student in music education.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	757	Quant Research in Music Teach	Studies quantitative research and methods in music education, including readings and discussion, data collection, and analysis. Includes development of an abbreviated prospectus for a quantitative dissertation or a draft of a quantitative research paper suitable for presentation or publication.	N	LEC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Doctoral Student in Music Education
MUE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student

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MUE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): doctoral Music student
MUE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUE	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): doctoral Music student
MUE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Prerequisite(s): doctoral Music student
MUP	101	ASU School of Music Experience	Orientation to university and School of Music resources and procedures as well as career planning and guidance. Through various course discussions and assignments, music students examine the concept of academic integrity and its potential impact on their future and learn about taking an interdisciplinary perspective. Required for all music majors.	N	REC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Credit is allowed for only MUP 101 or MUP 194 (ASU School of Music Experience)
MUP	111	Studio Instruction	Bassoon, cello, clarinet, contrabass, comet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	117	Applied Jazz Improvisation	Principles, methods, and theory of jazz performance and pedagogy.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major who has passed a jazz studies audition
MUP	121	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, comet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Performance minor or Music Theatre minor who has passed audition, or Performance and Movement major
MUP	127	Studio Instruction	Bassoon, cello, clarinet, contrabass, comet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	131	Class Piano	4-semester sequence (with MUP 132, 231, and 232) designed for those with little or no piano experience. Emphasizes keyboard technique, sight reading, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	132	Class Piano	4-semester sequence designed for those with little or no piano experience. Emphasizes keyboard technique, simple accompaniments, and improvisation. 2 hours per week. May not be taken for audit.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP 131 with C or better
MUP	133	Class Voice	4-semester sequence (with MUP 134, 233, and 234) open to all students. 2 hours per week. May not be taken for audit.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	134	Class Voice	See MUP 133.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	170	Music Theatre I	Develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		

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MUP	172	Music Theatre II	Further develops introductory performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 170
MUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	209	Beginning Choral Conducting	Essentials of choral conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	210	Begin Instrumental Conducting	Essentials of instrumental conducting techniques. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	217	Applied Jazz Improvisation	Emphasizes basic jazz literature, chord symbol reading, melodic patterns and concepts, ear training, analysis of improvised solos, and pedagogical issues.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 117 with C or better OR Visiting University Student
MUP	231	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP132 with C or better
MUP	232	Class Piano	See MUP 131.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music student; MUP231 with C or better
MUP	235	Jazz Piano	2-semester sequence (with MUP 236) designed for jazz keyboard experience. Emphasizes chord symbol reading, simple improvisation, and voicing. 2 hours per week.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisite: Music student
MUP	236	Jazz Piano	See MUP 235.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	250	Diction for Singers	Use of phonetics in the study of song and opera literature. Language emphasis differs each semester. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	270	Music Theatre III	Develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 172 OR Visiting University Student
MUP	272	Music Theatre IV	Further develops intermediate performance skills for opera and music theater emphasizing the portrayals of simple and complex relationships, character development, solo and ensemble performance, music and dialogue analysis, body awareness, and freedom of the vocal and breath mechanisms.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 270
MUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	311	Studio Instruction	Bassoon, cello, clarinet, contrabass, comet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	319	Adv Audio Engineering - Arts	Synthesis and application of analog and digital recording methods (voices and instruments), mixing and the advanced skills needed to create professional recordings (CDs, DVDs, internet sound files, etc.). Further emphasis on electronic music production, computer based applications, MIDI, and contemporary studio hardware.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Minimum Junior standing in the Herberger Institute for Design in the Arts
MUP	321	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, comet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition

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MUP	327	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	337	Studio Instr: Collaborat Piano	Repertoire to be selected from vocal and instrumental literature. 1 hour lesson per week. May be repeated for credit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	340	Intermediate Conducting	Further study in conducting of instrumental and choral music, including score reading, gesture and interpretation.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUE 154 or MUP 210 with C or better
MUP	360	Musicianship for Singers	Covers reading in the treble and bass clefs (other clefs may be covered time permitting), conducting, intervallic patterns, harmonic outlining, rhythm, dictation, sight reading melodies, musical preparation of repertoire, score scanning and score marking. Additional topics may be addressed as specific student skills and goals are assessed. Assignments are sung and drilled with movable do solfeggio and the takadimi rhythm solmization system. All of the repertoire studied and performed are vocal literature, including: art song, opera, oratorio, musical theatre, jazz, popular.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition; Credit is allowed for only MUP 360 or MUP 394 (Musicianship for Singers)
MUP	370	Music Theatre V	Interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of several historical and contemporary music styles in musical theatre, applying best practices for research, solo and ensemble performance.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major or Music Theatre minor who has passed audition; MUP 272 with C or better
MUP	373	Music Theatre Perfmrce & Prod	Participation in music theatre and opera productions, including auditioning for productions, adhering to departmental policies and completing assigned technical hours.	Y	STO	Y	YGB	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition
MUP	374	Music Theatre Tech Production	In-depth study of approaches to technical music theatre. Classroom study of costumes, sets and lighting (Section 1 Topic: Foundations) is followed by practical experience on a technical running crew for a music theatre and opera production (Section 2 Topic: Practicum). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or Music Theatre minor who has passed audition
MUP	388	Collaborative Piano	Performance class for collaborative piano majors. Repertoire includes vocal and instrumental selections. Advanced analysis of ensemble techniques, style and performance practice in preparation for graduate study or professional application.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): 4 completions of MUP 127 with C or better OR Visiting University Student
MUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUP	417	Applied Jazz Improvisation	Emphasizes listening, analysis, and performance of advanced jazz literature and composition in contemporary styles.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 217; Music student who has passed audition
MUP	438	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Music major, The Arts BA major, or Music Entrepreneurship certificate; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician) OR Visiting University Student
MUP	439	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 or MUP 438 or 494 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 494 (Music Product Creation and Development) or MUP 539
MUP	440	Keyboard Harmony	Performance-oriented class emphasizing chord progressions, harmonization, figured bass realization, stylistic improvisation, transposition, open score reading, and sight reading.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	441	Popular Music Ensemble	Focuses on one or several popular music styles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or non-Music major who has passed audition

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MUP	442	Instrumental Ensembles	Students enhances musical diversity and artistic depth by participating in numerous ensembles as well as other artistic and educational projects. Each project focuses on specific pedagogical and/or musical learning outcomes. Together they comprise a rich assortment of musical experiences and promote the primary course objective. The curriculum accommodates the distinctive needs of each student and is tailor-made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	443	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality. This ensemble is available to both music majors and non-majors, and may require an audition.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed audition
MUP	444	Concert Winds	Open to all ASU students. Composed of students who are music majors, as well as those pursuing other fields of study, the group rehearses and performs mainly traditional band literature, giving one or two major performances per semester. Students must audition with the band staff for seating placement.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or nonmajor who has passed an audition
MUP	448	Classical Style: Perform/Analy	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 448 or 494 (Classical Style: Performance and Analysis)
MUP	449	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music major who has passed audition; Junior standing; Credit is allowed for only MUP 449 or 494 (Unaccompanied Bach: Performance & Analysis)
MUP	450	Choral Union	Large mixed ensemble focuses on the study, synthesis and performance of major choral masterworks while gaining in-depth understanding of significant choral repertoire and historical ramifications. This ensemble is available to both music majors and non-majors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	451	Repertoire	In-depth study of music for performing, involving advanced interpretive and technical concepts from historical, stylistic, and performance-related perspectives.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Completed 4 semesters of 100-level studio instruction
MUP	453	Art Song Repertoire	A survey of repertoire for one voice and piano beginning with Haydn and continuing through the present day. Focuses on the core Art Song Repertoire of Germany and France, but also explores a variety of composers, eras and regions, including Italy, Spain, England and America.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	454	Song Literature	American, Russian, Spanish, Scandinavian, and contemporary song.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	455	Arizona Statesmen	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of a variety of historically and musically standard male repertoire, within historical context. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	457	Sol Singers	Membership in this ensemble involves the in-depth study and application of specialized musical skills in the performance of historically and musically important repertoire for treble voices. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or non-Music major who has passed audition

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MUP	458	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): undergraduate music major or nonmajor by audition
MUP	459	Barrett Choir	The Barrett Choir is an opportunity for students from all over the university, but primarily from Barrett, The Honors College, to participate in a high-quality choral ensemble. The group seeks to harness the creativity and intellect of honors students to create a collaborative ensemble that operates on a unique model of student-centered learning. The repertory, mostly chosen by the members, is highly varied, ranging from world music to pieces in the great choral tradition to newer music and popular music. There are normally two major concerts per semester, with some occasional smaller performances. This ensemble is available to both music majors and non-majors, and may require an audition.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music major or Non-Music majors who have passed audition
MUP	460	Visiting Quartet Residency	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Music major (bass, cello, viola, violin) who has passed audition
MUP	461	Marching and Athletic Bands	Development of specific professional performing skills through staging of formations and drills for football games and other events. Explores a wide variety of musical repertoire from current top 40 hits to classical. These ensembles are available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major or nonmajor who has passed an audition
MUP	465	Music Theatre VI	Further interpretational study of advanced acting and musical theatre performance techniques. Includes exploration of historical and contemporary styles in musical theatre, applying best practices for research, solo and ensemble performance.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 370
MUP	466	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): two completions of MUP 467 OR Visiting University Student
MUP	467	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester students focus on the individual dancer, spatial awareness, development of character and intention. The second semester students work on basic partnering skills and partner dances. Intended to be a full-year course.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Performance (Music Theatre) major, or Music Theatre minor who has passed audition
MUP	470	Music Theatre VII	Development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	STO	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 465; Credit is allowed for only MUP 470 or MUP 494 (Musical Theatre Dance) or MUP 566 OR Visiting University Student
MUP	471	Music Theatre: Workshops	The development of specific skills for musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Performance (Music Theatre) or Performance (Voice) major; minimum 45 hours
MUP	472	Music Theatre VIII	Further development and practice of professional music theatre skills in solo and ensemble performance with an emphasis on applied skills and industry immersion.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): MUP 470
MUP	476	New Music Ensemble	In-depth study, synthesis, and performance of classical works written within the last twenty years for small ensemble and for instruments with electronics. Involves discussion and realization of advanced interpretive and technical concepts related to contemporary music.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	479	Chamber Music Ensembles	Faculty-coached ensembles involving in-depth study and application of specialized, professional skills in performing with two or more players of like or unlike instruments and/or voice.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	481	Performance-Pedagogy/Materials	Principles and methods of performance techniques for each performance field. May be repeated for credit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisites: Music students who have passed audition
MUP	482	Piano Pedagogy	Continuation of MUP 481 (Piano). Problems and techniques of teaching intermediate to advanced piano students.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition

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MUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	485	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	486	Jazz Band	Analysis, rehearsal and performance of new, traditional, and Latin literature for jazz ensembles. Development of advanced sight-reading and instrumental doubling skills. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
MUP	487	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week. May not be taken for audit.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	489	Ethnomusicology Ensembles	Students apply indigenous music theories to actual practice, contextualized in background reading and listening, as they refine their ability to perform orally generated music and sometimes dance traditions. This ensemble is available to both music majors and nonmajors, and may require an audition.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
MUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Music students who have passed audition
MUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors Music students who have passed audition; ENG 101, 105, or 107 with C or better
MUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUP	495	Performance	For candidates of a BM degree in which 1/2 recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	496	Performance	For candidates of a BM degree in which a full recital is a requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	0		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	STO	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): Music major, Music Performance minor, or Music Theatre minor who has passed audition
MUP	503	Literature for Teaching Voice	Equips students with knowledge of repertoire for teaching applied voice, and to cultivate skills in mindfully assigning said repertoire. Topics and activities include learning about the types of repertoire across many styles, pedagogical implications of repertoire, benefits and pitfalls in assigning repertoire to the developing singer, and assignment of repertoire to true and hypothetical students.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	504	Voice Teaching Practicum	Provides opportunities to develop practical teaching skills through experiential learning for voice and/or music education graduate students who have a strong interest in teaching applied voice lessons. Topics and activities include teaching, teaching observations, guided teaching activities, and the creation of a teaching portfolio.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student
MUP	507	Group Piano Practicum	Curricula, materials, and teaching techniques for group teaching at the university and community college levels. Observation/supervised teaching in group piano.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	508	Studio Observation	Weekly observation of studio teaching by various piano faculty. Paper as final requirement.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	509	Jazz Keyboard Harmony	Emphasizes jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	510	Jazz Keyboard Harmony	Continuation of emphasis on jazz chords and chord progressions, harmonization, voicing, and analysis of transcriptions.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition

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MUP	511	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour plus studio class weekly. May not be taken for audit.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Music graduate student who has passed audition
MUP	517	Advanced Improvisation	Improvisation techniques within the context of advanced jazz literature. Must be taken in sequence with MUP 518.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	521	Studio Instruction	Secondary or minor instrument instruction. Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1/2 hour per week. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	527	Studio Instruction	Bassoon, cello, clarinet, contrabass, cornet, euphonium, flute, guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, voice. Minimum contact of 1 hour per week. May be repeated for credit. May not be taken for audit.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Music graduate student who has passed audition
MUP	538	The Enterprising Musician	Familiarizes students with concepts of entrepreneurship and explores good business practices. The broad objectives of the course are to understand the importance of entrepreneurial thinking and opportunity recognition in the music industry; and to provide to the students the concepts, capabilities and information to achieve a desired career in music.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): graduate Herberger Institute student; Credit is allowed for only MUP 438 or MUP 538 or MUP 494 (The Enterprising Musician) or MUP 598 (The Enterprising Musician)
MUP	539	Music Product Creation and Dev	Processes and proven methodologies of new music product creation and development. Assesses and evaluates the quality of different models and techniques through case studies and by talking to potential customers. Develops a business model canvas for a personal new music product idea or project. Taught in conjunction with the online Udacity course How to Build a Start Up, combined with experiential learning in and out of the classroom. Students should have a basic idea of a business model for a startup or project they will pursue throughout the duration of the course.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUP 538 or 598 (The Enterprising Musician); Credit is allowed for only MUP 439 or MUP 539 or MUP 598 (Music Product Creation and Development)
MUP	540	Princ of Integrated Conducting	Score preparation and conducting techniques for instrumental music. Concentration on study of historical styles. Required of DMA students in Instrumental Music.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: DMA Conducting major
MUP	541	Song	Seminar on solo song from its beginning to the present day.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	542	Instrumental Ensembles	Students participate in numerous ensembles and artistic and educational projects that together, comprise a rich assortment of musical experiences. Graduate students especially need opportunities to hone their skills in a great variety of performance opportunities. During the academic year, each student participates in a variety of projects that present a wide range of musical experiences. The curriculum is designed to accommodate the distinctive needs of each student in that artistic-educational experiences are, to a large extent, tailor made to each individual's career aspirations. Consequently, learning outcomes are highly individualized and student driven, rather than institutionally convenient. Each artistic-educational project focuses on specific pedagogical and/or musical learning outcomes that, in various ways, promote the primary course objective: the enhancement of musical diversity and artistic depth in every student. Audition required during the first week of classes.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): Music graduate student
MUP	543	Choral Ensembles	Active, thoughtful participation in music ensembles can provide for development beyond the possibilities of individual study alone. The ensemble setting is, in part, a forum for the synthesis of component parts of a complete music education. Includes the study and performance of diverse musical expressions that represent a variety of historical and cultural perspectives. These ensembles provide the opportunity to prepare and present varied music composed for the mixed choir from the major stylistic periods with the intent of serving composers, performers and listeners by performing choral music of the highest possible quality.	Y	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student

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MUP	548	Classical Style: Perf/Analysis	Integrates historical and theoretical analysis with performance, examining classical period repertoire.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 548 or 598 (Classical Style: Perf. & Anlys)
MUP	549	Unaccompanied Music of JS Bach	Integrates historical and theoretical analysis with performance, examining the unaccompanied works of J.S. Bach.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre-requisite: Graduate Music major who has passed audition; Credit is allowed for only MUP 549 or 598 (Unaccomp Bach Perf & Analysis)
MUP	550	Choral Union	Open to all students in the university and to interested singers in the community by audition. Preparation and performance of the larger choral works. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	551	Repertoire	Literature available for performance in all performing media.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	554	Repertoire Score Study	Conducting course comprising a survey of significant repertoire (encompassing, over multiple semesters, literature from choral, musical theater/opera, orchestral, and wind band genres); an introduction to historical performance practice; and a range of score study techniques. Conducting majors are required to enroll each semester (or as advised) and, subsequently, display a comprehensive historical knowledge of the repertoire and development of ensembles over the past 500 years, demonstrate command of standard performance practices with respect to each historical era, and exhibit a clear understanding of varied methods of score study.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: DMA Conducting major
MUP	555	Arizona Statesmen	Rehearsal and performance of music for mixed voices. 3 hours per week. An audition is required to participate in the ensemble.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	557	Sol Singers	Rehearsal and performance of music for mixed voices. 2 hours per week. An audition is required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	558	ASU Gospel Choir	The ASU Gospel Choir is a vocal ensemble open to students and community members regardless of their faith. The ensemble performs a variety of song forms drawn from the African American religious tradition, including traditional and contemporary gospel, anthems, hymns and spirituals. The Gospel Choir maintains an active performance schedule both on and off campus.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	560	Visiting Quartet Residency Pro	Develops skills as a chamber musician and provides opportunities to work with members of the visiting string quartet in residence.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Pre-requisite: Graduate Music major who has passed audition
MUP	561	Marching and Concert Bands	Staging of formations and drills for football games and other events (fall); masterpieces of symphonic band literature (spring). Meets MWF. An audition may be required to participate in the ensemble.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	565	Acting and Movement	Process class with exercises specifically developed to assist the student actor to learn the fundamental techniques of acting with an emphasis on the actor's approach to characterization.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 565 or MUP 598 (Acting for Singers)
MUP	566	Broadway Dance	Designed for students in the collaborative performance areas of musical theatre (music, theater and dance). Examines the development of landmark styles and theories specifically in musical theater and Broadway dance.	N	STO	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): graduate Music major who has passed an audition; Credit is allowed for only MUP 566 or MUP 598 (Musical Theatre: Dance)
MUP	567	Music Theatre Dance Technique	Students gain a basic understanding of body awareness and alignment, strength and technique with a focus on musical theatre vocabulary as well as basic turns and leaps. The first semester focuses on the individual dancer, spatial awareness, development of character and intention. The second semester works on basic partnering skills and partner dances. Intended to be a full year.	N	LAB	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Music graduate student who has passed audition
MUP	570	Music Theatre: Techniques	Exercises and improvisations for the singing actor emphasizing body awareness, isolations, and freedom of the vocal and breath mechanisms.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	571	Music Theatre: Workshops	Develops specific skills for the musical-dramatic interpretation.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	573	Music Theatre: Performance	Participation in Lyric Opera Theatre productions.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition

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MUP	574	Music Theatre Technical Prod	Introduces technical music theatre. Classroom study of costumes, sets and lighting (Section 1, Topic: Tech) followed by practical experience on a technical running crew for a Lyric Opera Theatre production (Section 2 Topic: Problems). The two sections should be taken in consecutive semesters.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	576	New Music Ensemble	Rehearsal and performance of music written in the last 20 years.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	579	Chamber Music Ensembles	String, brass, woodwind, percussion, keyboard, vocal, and mixed ensembles. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	581	Performance Pedagogy/Materials	Principles and methods of performance techniques for each performance field.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	582	Anatomy & Physiology of Singing	Detailed study of the anatomy, physiology, neurology and acoustics of the singing voice.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisite(s): Music graduate student
MUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	585	Percussion Ensemble	Rehearsal and performance of standard and original repertoire for the percussion ensemble and related instruments. 2 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	586	Jazz Band	Rehearsal and performance of new, traditional, and Latin literature for jazz bands. 4 hours per week.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	587	Ethnomusicology Ensembles	Performance learning experience for the music of various cultures of the world.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	588	Collaborative Piano	Piano accompaniments found in vocal and instrumental literature; discussion of styles and performance practices; experience in public performance. 2 hours per week.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	596	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	597	Solo Performance	See MUP 596.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
MUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Graduate Music major who has passed audition
MUP	727	Studio Instruction	Minimum contact of 1 hour per week. May be repeated for credit. Conducting students register for 2 semester hours; all other students register for 4 semester hours.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-4		Prerequisite(s): Doctoral Music major who has passed audition
MUP	751	Seminar in Piano Literature	In-depth study of selected topics related to the standard piano literature. Requires research paper, bibliography, class presentation.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition

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MUP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	796	Solo Performance	May be full recital, major operatic role, solo performance with orchestra, ensemble, or lecture recital.	N	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		Pre- or corequisite(s): Doctoral Music major who has passed audition
MUS	100	Fundamentals of Music Notation	Provides nonmusic majors with sufficient symbol literacy to begin work in the field of musical learning. Credit not applicable toward any music degree.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
MUS	131	Bach to Bebop	Develops an understanding of the repertoire for the various musical instruments and ensembles throughout the five eras being studied and discernment through listening different genres of music. For the lectures regarding instruments, introduces students to the respective repertoire for the instrument from c. 1700-present with special emphasis on how the use of the instrument developed throughout history or during each era.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 131 or 194 (Performance: Bach to Bebop)
MUS	145	Nonmajors Class Piano: Begin	For students with little or no previous music experience. Students learn beginning piano skills.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) OR Visiting University Student
MUS	146	Singing for Nonmajors I	Introduces the basics of singing in many styles, from classical to popular. Topics and activities include learning about the mechanics of singing, music reading, critical listening, learning and performing in a group, and learning and performing alone.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Credit is allowed for only MUS 146 or MUS 194 (Beginning Class Voice for Non-Majors)
MUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	210	The Arts Around Us	Develops the ability to think and create from an arts-rich perspective. In particular, focuses on the arts in the lives of children and youth, arts experiences for children and youth in the community, and one's personal experiences with the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 210 or 294 (The Arts Around Us)
MUS	211	Dance, Music and Meaning	Explores the fundamental nature of human experience across time and culture through the medium of dance and music using a variety of dance and musical materials including folk dance and music, popular dance and music, and such theatrical forms as ballet and modern dance and the music connected with them.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 211 or 294 (Dance, Music, and Meaning)
MUS	212	Music, Meaning and Imagination	Explores how music provides ways to make meaning of the world around us and music as a medium for creative thinking and doing. Develops understanding by trying on roles ranging from critics to creators in both individual and group projects.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 212 or 294 (Music, Meaning and Imagination)
MUS	213	Critical Thinking in the Arts	Fosters critical thinking abilities in relationship to performing and visual arts. Students learn how to listen to music and view art analytically. Develops and applies knowledge of common elements (within and across art forms) such as form, texture, balance and contrast in order to enhance understanding both of arts processes and products.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	

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MUS	214	Art, Music and Learning	Offers an integrated introduction to, and examination of, the core structural and formal elements of visual art and music in the context of contemporary experiences and learning process.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	215	Children, Creativity, Arts	Interdisciplinary exploration of children's creative processes through critical analysis, hands-on participation and personal reflection. Specifically focuses on creative processes in the arts.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	
MUS	231	Laughing to Music	Modern-day comedies like Spamalot, Avenue Q, and Glee are part of a comic tradition extending back to the Renaissance. Looks at funny in music from commedia dell'arte to the present. Studies works including the comedies of Mozart, Gilbert and Sullivan, the Marx Brothers, Monty Python, Mel Brooks and many others.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 231 or MUS 294 (Laughing to Music) OR Visiting University Student
MUS	240	Listening to Music	Surveys the historical periods of music making in western civilization, the study of which will hopefully create within the student a listener with an appreciation for art music of many periods and provide more enjoyment in the process. Through lectures, presentations, readings, listening examples and video/DVDs, studies music identified as strong examples of the major periods, composers and compositions in the history of music. Students learn and adopt a minimum new language to help express the elements of music they experience and listen to and develop strategies for writing and communicating about what they hear and put words to how they respond to it. Because experiencing music performed live is an integral part of the learning process, students are required to attend concerts outside of class and submit critical reviews of what they hear.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
MUS	245	Non-Majors Class Piano: Inter.	For students who have completed 1-3 years of piano study.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 145 or MUS 194 (Non-Majors Beginning Class Piano I) with C or better; Credit is allowed for only MUS 245 or MUS 294 (Non-Majors Class Piano II) OR Visiting University Student
MUS	246	Singing for Nonmajors II	Continues to cultivate the basics of singing in many styles, from classical to popular. Topics and activities include gaining a deeper understanding of the mechanics of singing, sharpening music reading skills and critical listening, learning and performing in a group, and learning and performing alone.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 146; Credit is allowed for only MUS 246 or MUS 294 (Non-Majors Class Voice II) or MUS 294 (Singing 2 for Non-majors) OR Visiting University Student
MUS	254	Blues to Heavy Metal	Covers important musicians and trends from the 1930s through the 1970s. Topics include blues, rhythm and blues, rockabilly, doo wop, teen idols, girl groups, dance craze, surf, novelty, soul, Motown, British invasion, art rock, psychedelic rock, hard rock, heavy metal, and early '70s styles. Emphasizes musical instruments and stylistic traits with historical information provided as background. Features listening examples drawn from selected artists and bands including popular songs and rarities, and demonstrations using various musical instruments and techniques.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Credit is allowed for only MUS 254 or 354 (Blues to Heavy Metal)
MUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	340	Music Concert Hall, Stage, Scm	In-depth study of examples from Western art music. Emphasizes aural analysis and synthesis of historical data with musical phenomena. Critiques the canon and its limits in specific instances.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): minimum 42 hours
MUS	345	Non-Majors Class Piano: Adv.	For students who have completed 4 or more years of piano experience.	N	LEC	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): MUS 245 or MUS 294 (Non-Majors Class Piano II) with C or better OR Visiting University Student
MUS	347	Jazz in America	In-depth study, analysis and synthesis of examples from the jazz tradition. Includes the application of advanced aural analytic techniques to exemplary jazz musical works.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	349	Music in America	Current styles of American music including jazz, popular, and folk music.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & H	
MUS	354	Popular Music	In-depth study of a specific topic in the history of popular music. Emphasizes aural analysis and synthesis of historical data with musical phenomena to create new perspectives.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 42 hours OR Visiting University Student

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MUS	355	American Music	In-depth study of current research topics in American music. Engages students in current scholarly debates. Charts the limits of current scholarly methodologies and historical research programs.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	Prerequisite(s): minimum 42 hours OR Visiting University Student
MUS	356	Broadway&the American Musical	In-depth chronological study of American musical theatre on Broadway, including origin and development, historical references, global and cultural influences. By way of critical analysis, emphasizes comprehensive stylistic understanding of minstrelsy, operetta, revues, book musicals, film musicals, rock musicals, mega-musicals, and Broadway revivals. Engages students in current scholarly debates on American musical theatre.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
MUS	362	Rap Music and Hip Hop Culture	Examines the history of rap music and hip hop culture from their origins to about 1995, including most, but not all, of the major artists from this period. Explores connections between rap music and other elements of hip hop culture, and challenges students to think critically about rap music and its place in society. Uses listening exercises, demonstrations, and conversations with artists to examine how rappers create meaning in their musical works. Drawing on secondary articles by rap critics and scholars, considers in detail such controversial subjects as censorship, sexism, obscenity, and race politics in America as they relate to rap music.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): minimum 42 hours; Credit is allowed for only MUS 354 (Hip Hop) or MUS 362 OR Visiting University Student
MUS	371	World Music	Provides an introduction to world music, including traditional and popular styles. Examines specific music genres from Africa, Asia, Europe, and the Americas and explores their historical development, cultural contexts, communicative functions, forms, styles, instruments and musical philosophies. Throughout the semester, considers the interrelationships among musical genres and other art forms (dance, theater, visual arts, and literature) and analyzes how these musics have intersected with the issues of race, class, gender, religion, ritual, politics, social movements and cultural identity. Students learn to hear and discuss significant stylistic elements of selected genres through listening assignments.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & G	Pre-requisite: Minimum 45 hours; Credit is allowed for only MUS 371 or 394 (World Music)
MUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	410	History of Women in Music	Surveys musical achievements of women as well as the historical contexts that shaped and defined their artistic development.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C & H	
MUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Barrett Honors student
MUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
MUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
MUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
MUS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
NAN	505	Nanoscience and Society	Integrates nanoscience and nanotechnology with potential societal issues involved in the students' NAN 593 Applied Projects. Coordinated by the faculty and research staff at the Center for Nanotechnology in Society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	506	Innovation and IP Management	Intellectual Property (IP) Management in the context of innovation (research, regulations, manufacture, access to markets, and trade) with emphasis on strategies, public-private interface, licensing, and technology transfer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	2		
NAN	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisites: Degreee- or nondegree-seeking graduate; Credit is allowed for only MSE 526, NAN 511, PHY 511, or PHY 481

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NAN	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
NAN	542	Topics in Biophysics	Overview of modern biology, length scales: emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542
NAN	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics: measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
NAN	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
NAN	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, PHY552 or SEM 552
NAN	560	Nanomtlts in Enrgy Prod/Storage	Emphasizes the relationship among fundamental materials properties, chemical and energy transformation, as well as energy storage. Applications include the role of materials for photovoltaics, nanocatalysts, batteries, and fuel cells. Stresses fundamental principles and charge transfer processes in nanostructured materials in addressing energy needs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): graduate Chemistry, Engineering or Physics major. Credit is allowed for only MSE 460 or MSE 494 (Nanomaterials In Energy Production and Storage) or MSE 560 or MSE 598 (Nanomaterials In Energy Production and Storage) or NAN 560
NAN	564	Bionanotechnology	The use of biomolecules, bioelectronics, and biomedicine for applications in nanotechnology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only BCH 564 or NAN 564
NAN	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
NAN	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
NAN	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
NAN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
NAV	101	Introduction to Naval Science	Introduces the customs, traditions, missions and regulations of the Department of Defense, United States Navy and United States Marine Corps. Introductory course for the Naval Reserve Officer Training Corps (NROTC) by laying the basic foundation of knowledge about the Navy and Marine Corps required to progress through the NROTC program. Also provides the requisite knowledge to allow follow-on shipboard summer training to be safely and effectively conducted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		
NAV	102	Sea Power and Maritime Affairs	Informs the participants of the historical evolution of sea power for the U.S. Navy and world history. Also covers the evolution of international terrorism and the effects on U.S. strategies and policies regarding potential adversaries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 102 or NAV 194 (Sea Power and Maritime Affairs)
NAV	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	202	Navigation	Basic principles, procedures and analytic processes of marine navigation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Credit is allowed for only NAV 202 or NAV 294 (Navigation)
NAV	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	301	Ships Systems I	Provides detailed knowledge of naval engineering systems and principles of ship construction. Topics covered include ship design, hydrodynamic forces, stability, conventional and nuclear propulsion, electrical theory and systems, hydraulics and ship control. Concepts of the theory and design of steam, gas turbine and diesel propulsion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 301 or NAV 394 (Navy Ship Systems I - Engineering) OR Visiting University Student
NAV	302	Naval Ship Systems: Weapons	Overview of the theory and concepts underlying modern weapon systems used aboard naval warships.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 302 or NAV 394 Naval Ship Systems II: Weapons

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NAV	303	Evolution of Warfare	Provides marine option students with a basic understanding of the art, science and concepts of war from the beginning of recorded history to the present day. Addresses the interrelationships among technology, politics, culture and society to better understand warfare today and in the future.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours. Credit is allowed for only NAV 303 or NAV 394 Evolution of Warfare
NAV	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Naval Science	1-4		
NAV	401	Naval Operations and Seamanship	In-depth study of numerous aspects relating to the efficient and professional manner of U.S. Navy ships' operations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 401 or NAV 494 (Naval Operations and Seamanship) OR Visiting University Student
NAV	402	Leadership and Ethics	Applies leadership and ethical theories discussed to an actual leadership or ethical dilemma or issue that Junior Officers in the Fleet or FMF are currently facing or have faced in the recent past.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only NAV 402 or NAV 494 (Leadership and Ethics)
NAV	403	Fundamentals Maneuver Warfare	Focuses on the historical aspect of amphibious operations. Emphasizes how the development of this war fighting discipline played a key role throughout much of the early history of the Marine Corps.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Naval Science	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
NAV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	Department of Naval Science	1-3		
NEU	101	Introduction to Neuroscience	Provides an overview of fundamental concepts in the study of brain organization and function. Discusses key principles regarding cellular and molecular mechanisms of neuron function, organization and information processing in sensory and motor systems, endocrine and emotional components of behavior, and cognitive consequences of diseases of the brain. Introduces methods by which these features of brain function are established.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
NEU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	307	Your Brain on Drugs	Provides an overview of the effects of addictive drugs on the brain from a psychology and neuroscience perspective. Covers all classes of addictive drugs, from alcohol to nicotine to heroin to crystal meth. Also discusses topics related to many popular questions about addiction, such as: Is addiction really a disease? Is marijuana a gateway to harder drug use? Do drugs really kill brain cells? Which drug is the most addictive?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 181 or PSY 101; minimum 45 hours OR Visiting University Student
NEU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
NEU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
NEU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
NEU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
NEU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
NEU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-3		
NEU	555	Adv Molecular & Cellular Sci	Study of structural and functional organization of biomolecules and cells, based on current literature.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-6		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only MCB 555 or NEU 555
NEU	556	Human Systems Neuroscience	Systems-level neuroscience course focusing on human diseases. Classes involve lectures and/or other activities such as observations of clinical procedures and tours of clinical facilities (e.g., the neurosurgical suite, imaging facilities).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s): BME PhD student or Neuroscience PhD student; Credit is allowed for only BIO 598 (Human Sys Neuroscience) or BME 556 or NEU 556
NEU	558	Neuroscience Journal Club	Small class emphasizing discussion, presentation by students, and written research papers.	N	SEM	Y	GNA	The College of Liberal Arts and Sciences	School of Life Sciences	1		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
NEU	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): Interdisciplinary Graduate Program in Neuroscience PhD students

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NEU	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NEU	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NEW	100	Intro to Conflict Resolution	Introduces students to theory, research and practice of communication and language skills which are useful in conflict management, negotiation, transformation, reconciliation and forgiveness. Gives students access to practical exercises and role-playing opportunities. Critical thinking and critical decision-making are embedded in both the theory and the practice in this course and apply to the personal, professional and cross-cultural levels of interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
NEW	101	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Credit is allowed only for ASU 101 or NEW 101
NEW	102	Global Transformations	Focuses on the various economic, historical, cultural, environmental, technological and political forces that have transformed our world into an increasingly interconnected global community. To be a responsible and engaged global citizen necessitates understanding globalization and its implications for our future.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Credit is allowed for only NEW 102 or NEW 194 (Global Transformations)
NEW	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		Prerequisite(s): freshman standing with 25 or fewer hours
NEW	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
NEW	200	Innovation/Svc Learning/Ldrshp	Integrates academic coursework with lessons in leadership, community engagement and service learning in order to cultivate students' civic mindedness, knowledge and sensibility to issues of social justice and community engagement. Students develop solutions to real-life challenges and participate in implementing a community-based service learning project. Applying multicultural engagement and interdisciplinary knowledge and critical thinking skills to civic responsibility, course provides students with skills and knowledge applicable to the mission and goals of ASU and the New College.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only NEW 200 or IAS 294 (Innovation Challenge, Service Learning, Leadership)

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NEW	202	Interdisc Transformations	Examines how interdisciplinary approaches to knowledge can successfully address topics that are too broad or complex to be dealt with adequately by a single discipline. Exposes students to interdisciplinary research and problem solving, in oral and written communication, and in the synthesis of diverse perspectives. Familiarity and understanding of interdisciplinarity prepares students to engage in the type of complex thinking necessary for success in life and career, no matter the major or job path, and for better understanding our complex world.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): NEW 102 or 194 (Global Transformations); Credit is allowed for only NEW 202 or NEW 294 (Social Transformations) OR Visiting University Student
NEW	210	From Passion to Practice	Part self-discovery, part professional boot camp, this highly interactive course allows students to explore their strengths and passions and utilize them most effectively in their careers. Drawing upon the expertise of successful leaders and organizations from diverse professions as they are presented in text, video and in person, students learn skills and methodology that prepare them for entry into a fulfilling profession.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Credit is allowed for only IAS 294 (Passion to Practice: Charting Your Path) or NEW 210 OR Visiting University Student
NEW	225	Building a Better You	Equips students to manage their lives effectively and integrate beliefs, values and skills into fulfilling careers. Students develop a focused career path based upon their learning profile, interests and self-knowledge. Develops critical thinking and reading skills needed for effective decision making and communication. Uses the Let Me Learn Advanced Learning System® to enhance self-awareness and growth.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		
NEW	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		
NEW	300	International Cities	Expands the global awareness of students through intensive study of a major international city. Students study such areas as the history, political system, economy, geography, architecture, science, technology, arts and/or culture of the city before visiting it physically during a break. While abroad, students build on what they have learned in class by exploring the city and experiencing it firsthand.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours
NEW	302	Personal Transformations	Provides a structured approach as to how students can synthesize and reflect upon their general studies experience via the completion of an ethical will. Through an iterative writing process, students compose a document which outlines how their thoughts have developed and evolved over their course of study.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): NEW 102 or 194 (Global Transformations); NEW 202 or 294 (Social Transformations) OR Visiting University Student
NEW	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours
NEW	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): minimum 45 hours
NEW	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6		Prerequisite(s): Barrett Honors student
NEW	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NEW	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
NEW	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-3		
NEW	101-H	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Humanities, Arts, and Cultural Studies major; Credit is allowed only for ASU 101 or NEW 101

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NEW	101-M	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Mathematical and Natural Sciences major; Credit is allowed only for ASU 101 or NEW 101
NEW	101-S	ASU New College Experience	Required, one-credit course for incoming first-year students. Offered in small classes capped at 20 students. Introduces students to the unique elements, culture, challenges and opportunities of the university. Covers several core topics, including how to be successful at ASU, what it means to be a New College student, understanding interdisciplinarity, the significance of academic integrity, academic skill building, advising, discovering your major and/or career, along with the ASU West first-year student Community Read.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1		Prerequisite(s): New College School of Social and Behavioral Sciences major; Credit is allowed only for ASU 101 or NEW 101
NLM	160	Vol Action & Community Ldrshp	Introduction to voluntary behavior in American society for students interested in volunteerism, community service, and civic engagement.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	SB	
NLM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student
NLM	220	Introduction to Nonprofit Orgs	Introduces the nonprofit sector and its role in developing the cultural, economic, and social impact in U.S. society.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
NLM	235	Leadership and Ethics	Examines ethical questions faced by emerging leaders. Focuses on helping students develop emotional intelligence, current professional issues, and the refinement of a professional philosophy and comprehensive set of competences that enable transition from student to professional.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CRD 235 or NLM 235
NLM	300	Fund Raising & Resource Dev	Theory and practice of philanthropy, resource acquisition methods through ethical fund raising, and earned income approaches for nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
NLM	310	Volunteer Management	Studies volunteer engagement practices integral to community organizations introducing management techniques such as program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
NLM	320	Professional Develop Seminar	Professional seminar featuring nonprofit executives; variable topics on leadership and management concerns. Forum for exchange between students and professionals.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
NLM	380	Financial Mgmt for Nonprofits	Instructs students about nonprofit financial, management, and social accounting; accounting issues specific to nonprofits; budgeting; reporting; and nonprofit analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management major or Nonprofit Administration minor or American Humanics certificate; NLM 220 with a C or better OR Visiting University Student
NLM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
NLM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
NLM	410	Social Entrepreneurship	In-depth study of social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): Cross-Sector Leadership certificate or NLM 220; Credit is allowed for only CPP 410 or NLM 410 OR Visiting University Student
NLM	420	Nonprofit Ldrshp Alliance Inst	Nonprofit Leadership Alliance Institute for preparation of nonprofit professionals. Requires out-of-state conference.	Y	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-2		Prerequisite(s): minimum 45 hours OR Visiting University Student

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NLM	430	Managing Nonprofit Orgs	Analyzes administrative structures, decision making, and program delivery within nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	L	Prerequisite(s): Nonprofit Ldrsp & Mngmt major or Nonprofit Ldrsp & Mngmt minor or Nonprofit Ldrsp Alliance Certified Nonprofit Professional (CNP) certificate; ENG 101, 105, or 107 with C or better; NLM 220 with C or better OR Visiting University Student
NLM	435	Service Learning/Community Dev	Establishes a "hands-on" service learning application with a selected agency related to student's career interest. Entails strong examination of service-based learning literature, community development strategies and community engagement applied project.	N	REC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 435 or NLM 435 OR Visiting University Student
NLM	451	Grant Writing	How to increase grant funding: creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
NLM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; Credit is allowed for only CRD 463 or CSM 463 or NLM 463 or PRM 463 or TDM 463
NLM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): minimum 45 hours
NLM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
NLM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NLM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
NLM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
NLM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		
NLM	510	The Nonprofit Sector	Provides grounding in scope, function and philosophical foundations of the nonprofit sector in American society, including civic engagement, service delivery, reproduction of values and entrepreneurship.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	515	Nonprofit Org Behavior & Mgmt	Organizational behavior theories and effective management practices for nonprofits. Focuses on designing systems and developing habits to optimize the performance of individual employees and teams, in the context of the organization's goals, culture and capacity.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NLM 515 or NLM 598 (Nonprofit Organizational Behavior)
NLM	520	Financial & Resource Mgmt	Baseline understanding of key and critical financial management issues and practices for nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	525	Fundraising & Resource Dev	Examines fundraising and resource development in philanthropy from the perspective of the nonprofit practitioner. Also examines issues confronting nonprofit organizations related to fundraising and philanthropic purposes in society. Increases students' knowledge and understanding of charitable giving and fundraising—who gives to what, why, and how to raise funds for a cause. Examines a wide range of fundraising methods and tools. Focuses on critical thinking, reflection on practice, collaboration, discussion and writing.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	530	Program Eval & Info Mgmt	Develops skills in several areas, including evaluation, needs assessment, information and data collection, data management and analysis, computer applications, and report writing.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	540	Strategic HR Management	Managing human resources in nonprofit organizations; practices and theories.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	545	Volunteer Resource Management	Core topics in effective management of volunteers in carrying out the mission of organizations and ensuring volunteers have good experience with community organizations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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NLM	550	Philanthropy	Examines the role of philanthropy and charitable giving in contemporary American society from perspectives of the nonprofit practitioner, the philanthropist and the general public.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	560	Ldrshp/Ethics-Nonprofit Sector	Examines leadership and ethical questions encountered by managers and leaders in the nonprofit organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	562	Social Entrepreneurship	Introduces social entrepreneurship, including how ideas are formulated, constructed, and implemented; experiential learning in developing a social enterprise plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	565	Grant Writing Nonprofit	Provides practical, experiential instruction identifying grant makers, writing proposals, developing budgets and evaluating grant proposals for the nonprofit sector. Develops proposals with a partner nonprofit organization.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NLM 451 or NLM 565 or PRM 451
NLM	570	International NGO	Increases knowledge and understanding of international non-governmental organizations by examining what these organizations do and how they operate in a cross-cultural context.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	572	Community & Social Innovation	Considers community innovation and development from the perspective of achieving balance among economic, environmental, social, physical and political realms as a framework of sustainability.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CRD 572 or NLM 572
NLM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	605	Nonprofits, Law and Society	Enhances the legal sensibilities of nonprofit leaders and engaged stakeholders. This necessitates critical in-depth understanding of: (1) legal needs common to all nonprofit organizations, regardless of mission or area of focus such as nonprofit corporation law, tax-exempt status, fiduciary duties and fundraising and lobbying ethics and parameters; (2) commonalities among nonprofit, for-profit and governmental enterprises operating within similar spheres of society, especially the importance of nonprofit organizations' compliance with laws generally applicable to specific subsectors such as contracts, labor and employment, volunteer and premises liability, and intellectual property; and (3) the overall importance and impact of legal structures on nonprofit organizations' abilities to successfully pursue their missions for the benefit of society.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	610	Exec Leadership & Governance	Examines the multiplicity of roles for executives and board of directors in providing strategic leadership for nonprofits.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NLM	620	Capstone: Integrative Seminar	Synthesizes learning across MNLN program; analyzes emergent nonprofit and philanthropic sector trends; develops leadership approaches to enact social impact; develops and defends Capstone Solutions Project.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): Nonprofit Leadership and Management MNLN student; NLM 510; NLM 520; NLM 530; NLM 540 or 545; NLM 550

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
NTR	100	Intro to Nutrition Science	Introduces the science of food and nutrition as well as food systems. Focuses on personal dietary behavior change and sustainable dietary recommendations targeting human and environmental health to minimize risk of chronic disease. Overview of healthy dietary patterns, nutrients and energy balance and the digestive system. Addresses food systems issues, cultural aspects of food, and methods for evaluating credibility of nutrition information in the media as well as nutrition science.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	142	Applied Food Principles	Applied scientific principles of food preparation and production.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	150	Intro/Prof/Nutrition/Dietetics	Introduces the professions of nutrition and dietetics. Emphasizes the scope of dietetics practice, the role and functions of registered dietitian nutritionists, and the education requirements for entry into practice. Includes guest presentations by various nutrition professionals.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		
NTR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	241	Human Nutrition	Introduces nutritional concepts with an emphasis on evidenced-based guidelines and practices. Students explore the macronutrients and micronutrients in food, how these nutrients are utilized by the body and their effect on overall health and disease. Also discusses what makes a 'healthy diet,' dietary eating patterns, energy balance and body weight. Students learn techniques to assess the credibility of nutrition information in the media, on the Internet and in scientific journals. Additional topics also include cultural aspect of food, food sustainability and food safety.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	290	Intro Evidence-Based Research	Introduces best practices for gathering, interpreting, analyzing, synthesizing and evaluating research within the nutrition field.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s) w/ C or better: College of Health Solutions major; ENG 101, 105, or 107; ECN 221, HCD 300, JUS 302, PBH 300, POS 401, PSY 230, SOC 390, STP 226, STP 231 or SWU 321; Credit allowed for only KIN 290 or NTR 290 OR Visiting University Student
NTR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	300	Computer Apps in Food Service	Introduces common uses of software and technology in the food service environment, including dietary assessment and analysis, point of sale, and food inventory and control.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	302	Digital Technologies Nutrition	Students will learn to leverage existing digital technologies ethically and efficiently to solve problems, complete tasks, and accomplish goals related to nutrition. Students will learn effective adaptability to new and emerging technologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 302 or NTR 394 (Digital Technologies in Nutrition Communication) OR Visiting University Student
NTR	320	History of Human Nutrition	Origins of human nutrition; evolving theories of nutrition and disease; historical role of nutrition in social, military, cultural events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	341	Medical Nutrition Therapy I	First course in a three-course sequence in medical nutrition therapy. Introduces the study of medical nutrition therapy and evidence-based practice for health promotion and prevention and treatment of disease. Covers the nutrition care and therapeutic diets for a variety of conditions including diabetes, cardiovascular disease and neurological conditions. Teaches nutrition care planning via a variety of methods including case studies and active learning scenarios.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	343	Food Service Purchasing	Introduces purchasing systems, bid processes, receiving and storage procedures, and regulatory agencies involved in the food service industry.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	344	Nutrition Management & Leadership	Students gain a greater understanding of organizational structure, culture, administration, traits, values, diversity, marketing, budget development, unions, and more, all through the lens of management and leadership. Students also utilize their research and writing skills to investigate a variety of management topics.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241 OR Visiting University Student
NTR	345	Development of Healthy Cuisine	Principles and applications of nutrition, food selection, food preparation and mindful eating in the development of healthy cuisine for wellness, prevention and disease states.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241 OR Visiting University Student

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NTR	348	Cultural Aspects of Food	Explores origins, development and diversity of food preferences and dietary habits. Also addresses food patterns and attitudes of global populations and the role of U.S. immigrants in shaping food culture. Requires students to prepare and try new cultural and ethnic foods in this course.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB & C & G	Prerequisite(s): NTR 100 or 241 OR Visiting University Student
NTR	350	Nutrition Counseling	Counseling techniques in nutrition; interpersonal and communication skills in clinical and community sites; nutrition education for individuals and populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 341 with C or better or NTR 345; Credit is allowed for only EXW 340 or EXW 342 or HSC 340 or NTR 350 OR Visiting University Student
NTR	351	Nutrition Communication	Explores how to best communicate evidence-based nutrition messages to help promote change. Students produce various written and oral pieces that are aimed at health professionals or lay audiences. Course concepts include health literacy, tailoring messages to a target audience, and simplifying the language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241 OR Visiting University Student
NTR	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353 OR Visiting University Student
NTR	360	Nutrition Entrepreneurship	Explores entrepreneurial opportunities in nutrition, food service, wellness and health communications.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
NTR	390	Current Nutrition Research	Covers concepts in nutrition research that help prepare students for beginning an undergraduate research project. Teaches the basics of undergraduate research focusing on identifying research topics and potential research mentors/faculty, performing literature reviews, critiquing scientific articles, evaluating ethics and participant safety, and proposal writing.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 241; NTR 290
NTR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	400	Preprof Prep in Dietetics	Assists the senior dietetics student in navigating the process of selecting potential internships and applying for internships through DICAS. Focuses on each student's unique professional development needs with projects designed to explore career paths, network, and/or to develop career development skills. Provides an overview of the dietetics profession.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Nutrition (Dietetics) BS major; NTR 341 with C or better; NTR 440, 441, or 444 with C or better; minimum senior standing OR Visiting University Student
NTR	401	Preprof Prep in Nutrition	Students complete 60 hours of fieldwork experience (volunteer work) within their area(s) of professional interest to develop practical skills in planning, development, production and collaboration; including interview skills, social media ethics, cover letter and resume development.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prereq(s): Applied Sci (Food & Nutrition Entrep) BAS, Food & Nutrition Entrep BS, Nutrition BS, Nutrition (Human Nutrition) BS, or School Nutrition cert student; senior standing; Pre- or corequisite(s): NTR 343, 351, or 444 OR Visiting University Student
NTR	440	Advanced Human Nutrition I	Explores the metabolic reactions in humans that involve vitamins and minerals. Students learn how these micronutrients and phytochemicals interact with one another to influence health and disease, explore how genetic variability alters the metabolism of vitamins and minerals, and integrate micronutrient nutrition with physiology and biochemistry to optimize health and prevent metabolic disease. Students immerse themselves in a content-rich learning environment, engage with one another in lectures and in-class discussions, and apply information they have learned in team projects. They also enhance their skills in evidence-based approaches to nutrition science and dietetics by critiquing scientific articles with a micronutrient focus.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202 with C or better; NTR 241 with C or better; NTR 341 with C or better; Pre- or corequisite(s): BCH 361 with C or better if completed; Credit is allowed for only NTR 440 or NTR 540 OR Visiting University Student
NTR	441	Advanced Human Nutrition II	Metabolic reactions and interrelationships of carbohydrate, lipid, alcohol and protein.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361 with C or better; BIO 202; NTR 241; Credit is allowed for only NTR 441 or NTR 541 OR Visiting University Student
NTR	442	Experimental Functional Foods	Food product development techniques, food evaluation and testing, and investigation of current research into food composition.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre-requisite: CHM 101 or CHM 113; NTR 142; NTR 100 or NTR 241

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NTR	444	Medical Nutrition Therapy II	Second in a three-course sequence in medical nutrition therapy. Covers the principle of medical nutrition therapy for prevention and treatment of disease and health promotion. Also covers medical nutrition therapy for pediatrics, critical care, nutrition support, renal, liver, cancer and HIV/AIDS patients. Students apply critical thinking skills in simulation, active learning and interprofessional activities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 202; NTR 341 with C or better; Credit is allowed for only NTR 444 or NTR 544 OR Visiting University Student
NTR	445	Management of Food Service Sys	Reviews standardized methods of quantity food preparation, operation of institutional equipment, and institutional menu planning. Requires students to participate in a weekly lab where food is prepared and sold to the public in our functional retail kitchen operation. Tasks students to create and prepare menu items and manage all aspects of a fully operational kitchen. This is a capstone course for the dietetics degree.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): NTR 100 or 241; NTR 142; NTR 343; Credit is allowed for only NTR 445 or NTR 545 OR Visiting University Student
NTR	446	Medical Nutrition Therapy III	Third in a three-course sequence in medical nutrition therapy. Lecture and lab components include hands-on assessment techniques, evaluation and interpretation of malnutrition, laboratory data, and nutrition support therapy in relation to disease process and progression. Covers nutrition therapy for advanced practice including critical care, advanced wound care and failure/compromise of organ systems. Utilizes case studies, active learning and interprofessional experiences; as well as critical thinking skills to perform and evaluate nutrition assessment techniques including the NFPE and interpretation of laboratory data; develop and evaluate nutrition support therapies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): NTR 444 with C or better; Pre- or corequisite(s): BCH 361; Credit is allowed for only NTR 446 or NTR 546 OR Visiting University Student
NTR	448	Community Nutrition	Includes content related to community nutrition screening and assessment, nutritional epidemiology, nutrition monitoring and food assistance programs, public policy, nutrition interventions for vulnerable populations, planning effective community nutrition programs, grant writing, nutrition marketing and designing nutrition education programs. Students work in teams to analyze a specific community and population, conduct a literature review on nutrition concerns with their group, then design a community intervention and nutrition education lesson. Students also complete 10 hours of fieldwork in a community nutrition field outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NTR 100 or 241; Credit is allowed for only NTR 448 or NTR 548 OR Visiting University Student
NTR	450	Nutrition in the Life Cycle	Reviews nutritional needs and nutrition-related conditions in different stages of the life cycle. Course topics include pregnancy, lactation, infancy, childhood, adolescence and older adulthood. Reviews how developmental changes at each life stage contribute to specific diet characteristics and nutritional needs. Also covers how cultural, environmental, behavioral, psychosocial, physical and socioeconomic factors affect nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): NTR 100 or 241; Credit is allowed for only NTR 450 or NTR 550 OR Visiting University Student
NTR	453	Nutrition and the Media	Examines various aspects of nutrition and the media, including how food and nutrition professionals use the media in their career, how the media constructs our cultural views of food and body image, and how to frame nutrition messages to make them more newsworthy. Also explores the fields of food writing and food journalism.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
NTR	455	Retail Food Service Operations	Development, evaluation and management of retail food service operations; legal and ethical issues in food and beverage management. Capstone course for food management degrees.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 100 or 241; minimum junior standing OR Visiting University Student
NTR	457	Sports Nutrition	Provides a foundation in sports nutrition and addresses the nutritional needs of various types of athletes. Topics include energy and nutrient metabolism during activity, fluid and electrolyte regulation, the evaluation of sports supplements, and travel nutrition. Students also gain experience in developing and providing educational sports nutrition materials outside of the classroom.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201; NTR 241 OR Visiting University Student

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NTR	480	Integrative & Functional Nutri	Core tenants of dietetics and integrative medicine and the seven physiological systems underpinning this approach. Explores how nutrition contributes to a complex system of interacting biological, psychological, social, spiritual, community, environmental and biochemical systems. Trains how to put the patient at the center of the healing process so that students are able to address chronic disease concerns through a holistic and integrative framework as part of a larger interdisciplinary team. Challenges students to utilize conventional clinical nutrition approaches while embracing complementary therapies that are evidence based and address the biochemical individuality or specific life experiences of each patient/client.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BCH 361; NTR 241; NTR 341
NTR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): minimum 2.00 GPA; minimum junior standing
NTR	490	Undergrad Rsrch Methods Nutri	Builds on previously learned concepts by engaging students in research methods in the field of nutrition and helping to prepare for beginning an undergraduate research project. Provides an overview of common measurements and study designs that are used in nutrition research. Students apply this knowledge by conducting mini-studies and a class-based research project.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 290; NTR 390
NTR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
NTR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
NTR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
NTR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7		
NTR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
NTR	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS, Medical Nutrition MS, or Nutritional Science MS student
NTR	501	Research Methods/Nutrition	Reviews survey, focus group, and epidemiologic research; develops questionnaires; analyzes large data sets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Nutritional Science MS student
NTR	502	Statistics in Research	Covers the fundamental principles of the scientific process. Critically reviews scientific articles including review articles. In particular, students understand study limitations and how they impact data interpretation and generalizability. Basic training in statistical analyses using the statistics program SPSS.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Dietetics MS or Medical Nutrition MS student; Credit is allowed for only NTR 502 or NTR 598 (Statistics in Research)
NTR	503	Behavior Change	Project-based course focuses on the process of health behavior change interventions using design process and behavioral science.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS, Nutritional Science (Dietetics) MS, or Exercise and Nutritional Sciences PhD student
NTR	510	Nutrition and the Lifespan	Examines the nutritional needs of humans as they move through the lifespan from pre-conception through elder years. Highlights conditions that may alter or substantially impact nutrition at these stages using case studies and medical reviews. Reviews programs that provide support for food or nutrition education at various life stages including changes in needs for specific macronutrients and micronutrients. Diet assessment techniques and diet prescription strategies to meet needs during various life stages.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student

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NTR	511	Medical Nutrition	Provides an overview of the role of nutrition in medical practice and disease prevention. Includes an introduction to nutrition-based approaches in the prevention and treatment of chronic diseases such as obesity, cardiovascular disease, diabetes, cancer and gastrointestinal diseases. Discusses integrative aspects of nutrition along with review of normal digestion and absorption and a discussion of disorders arising from abnormalities in these processes. An introduction to clinical nutrition assessment and the basics of nutrition support will also be provided. Utilizes relevant clinical case discussions along with review of the literature and current authoritative guidelines to reinforce the content. Students learn how to individualize nutrition recommendations and utilize motivational interviewing for patients with the various above-listed needs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student
NTR	519	Nutrition for Eating Disorders	Critical review of the specialized role that dietitians play in the treatment of eating disorders, disordered eating, and substance use disorders as they relate to medical nutrition therapy, dietary interventions and long-term recovery in an individualized and treatment team approach.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 519 or NTR 598 (Nutrition Therapy for Eating Disorders and Addictions)
NTR	523	Vegetarian Nutrition	Health benefits, nutritional characteristics, potential risks of vegetarian diets.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	524	Chronic Inflammation	Examines how diet and lifestyle contribute to the development of metabolic syndrome. Reviews and discusses various risk factors that comprise metabolic syndrome through lectures and readings. Reviews chronic inflammation as a common etiology for chronic disease. Highlights nutrition interventions to treat and to prevent chronic inflammation using case studies and medical reviews.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	525	Complementary Nutrition	Critical review of functional foods, phytochemicals, nutrient supplements in health promotion.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	527	Policies, Environment & Obesity	Enhances students' understanding of the role policies and environments play in health promotion and disease prevention with a special focus on obesity prevention. Looks at a variety of examples to see how policies and environments related to food, nutrition and physical activity affect individual and community health. Also explores how "non-health" policies can be used as an effective tool to promote healthy behaviors.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	529	Pediatric Nutrition	Critical review of pediatric disease states and current nutritional therapies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	530	Techniques of Health Coaching	Health coaching techniques and skills for medical, allied health and health promotion professionals. The content illustrates the theory, principles and practices of evidence-based coaching psychology. Aligns with the training programs affiliated with Wellcoaches® (endorsed by the American College of Sports Medicine). Designed in three parts: (1) building of core coaching skills; (2) establishing generative moments with clients; and (3) developing coaching presence and positive psychology.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSC 440 or NTR 530 or HSC 598 (Health Coaching Concepts and Skills)
NTR	532	Pathophysiology and Nutrition	Explores the etiology of various endocrine pathophysiological conditions. Throughout the course, students learn the etiology of common conditions and are responsible for finding and presenting evidence for nutrition-based treatments for these conditions. At the conclusion of the course, students gain an appreciation and understanding of current research in nutrition-based approaches to treat endocrine disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	533	Diet Ethics and Policy	Political and ethical issues inherent in the U.S. food system. Topics include food and agricultural policy, government dietary recommendations and regulations, food environment, current issues in food politics, ethical questions of food choice, issues of obesity and food security, sustainability, and investigation of how and why Americans eat the way they do.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student

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NTR	535	Nutrigenomics	Provides a sound foundation for promoting personalized nutrition by integrating and applying molecular nutrition and nutritional biochemistry to clinical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Medical Nutrition MS student, Nutritional Science MS student, or Nutritional Science (Dietetics) MS student
NTR	537	Evidenced-Based Nutrition	Reviews current evidence of the role of diet on disease prevention, development, and management.	N	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	539	Global Nutrition	Provides an overview of global nutrition issues, including the epidemiology, etiology, sociocultural and economic context, and program and policy responses to nutrition-related topics. Areas to be covered include childhood malnutrition, growth stunting, micronutrient deficiencies, parasites and nutrition, sanitation, and obesity and chronic disease incidence in developing countries. Course is participatory; students engage in a series of class activities, discussions, and presentations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
NTR	540	Adv Micronutrient Metabolism	Metabolism of vitamins and minerals, primarily as applied to humans, with research literature emphasized.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 440 or 540
NTR	541	Adv Macronutrient Metabolism	Metabolism of protein, fat, and carbohydrate, primarily as applied to humans, with research literature emphasized.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 441 or 541
NTR	544	Therapeutic Nutrition	Current theories of the nutritional prevention or treatment of various diseases.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 444 or 544
NTR	545	Mgmt/Instl Food Service System	Standardizes methods of quantity food preparation, operation of institutional equipment, institutional menu planning, quantity food experiences. May require field trips.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 445 or 545
NTR	546	Assess Techniques in Nutrition	Clinical and biochemical evaluation of nutritional status.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 446 or NTR 546
NTR	548	Advanced Community Nutrition	Planning, development, implementation, and evaluation of community nutrition programs, including the process of grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only NTR 448 or 548
NTR	550	Adv Nutrition Life Cycle	In-depth review of metabolic characteristics and nutritional needs during pregnancy and lactation, infancy, childhood, adolescence, adults and older adults. Analysis of cultural, environmental, behavioral, psychosocial, physical and socio-economic factors affecting nutritional status through the life span.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	551	Geriatric Nutrition	Explores the impact of nutrition on the aging process and how the aging process influences nutritional needs. Examines the physiology, demographics and economics of aging as well as issues such as end-of-life care. Addresses health promotion, disease prevention and disease management within the context of geriatric nutrition.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Nutritional Science MS or Nutritional Science (Dietetics) MS student
NTR	553	Nutrition and CVD	Reviews current evidence of the role of diet on cardiovascular disease prevention, development and management.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): NTR 541. Credit is allowed for only NTR 553 or NTR 598 (Nutrition and Cardiovascular Disease) or NTR 537 (Cardiovascular Nutrition)
NTR	555	Advanced Sports Nutrition	In-depth study of current practices in sports nutrition and review of scientific literature. Also investigates the application of sports nutrition methodologies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Clinical Exercise Physiology MS, Exercise and Nutritional Sciences PhD, Nutritional Science MS, Nutritional Science (Dietetics) MS, Physical Activity and Health MS, or Strength and Conditioning MS student
NTR	556	Thermo and Fluid Balance	Comprehensive overview of human thermoregulatory responses and fluid balance to exercise in the heat. Provides students with the opportunity to learn the in-depth thermoregulatory responses to heat and the complication related to exercise-induced hyperthermia as well as water and electrolyte imbalances.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only NTR 556 or NTR 598 (Thermoregulation and Fluid Balance)
NTR	557	Nutritional Epidemiology	Designed for graduate students interested in conducting epidemiologic studies, or learning how to interpret and evaluate evidence from epidemiologic studies relating diet and nutritional status to disease risk and health. Familiarizes students with concepts and methodologies used in nutritional epidemiologic studies, and current state of knowledge on diet in etiology of chronic diseases.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only NTR 557 or NTR 598 (Nutritional Epidemiology)
NTR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		

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NTR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
NTR	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	GNA	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): Exercise and Nutritional Sciences PhD student
NTR	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NTR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
NUR	300	Professional Nurse Concepts I	Introduces students to professional nursing attributes.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): enrollment into upper-division Nursing program; Pre- or corequisite(s): NUR 325; NUR 336; NUR 352
NUR	310	Nursing Concepts	Theoretical concepts related to health integrity focusing on the individual client across the life span.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre-requisites: BSN Nursing major in clinical program
NUR	311	Pharmacology in Nursing	Applications of pharmacologic interventions.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major

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NUR	312	Psychomotor Skills for Nursing	Theoretical foundation for application of psychomotor nursing skills to professional nursing practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing major in clinical program. Credit is allowed for only NUR 312 or NUR 394 (Psychomotor Skills For Professional Nursing Prac)
NUR	313	Nur Conc Adult Health	Nursing concepts related to selected alterations in health with focus on adult populations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; NUR 320 with Y passing grade; Corequisite(s): NUR 323; Credit is allowed for only NUR 313 or NUR 394 (Nursing Concepts for Adult Health)
NUR	315	Nursg Rsch Appl to Prac	Provides scientific and clinical inquiry and research methodology along with concepts needed for integration of evidence into practice.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): advancement into the upper-division traditional BSN Nursing program; ENG 101, 105, or 107 with C or better
NUR	316	Nur Conc Psych/Mental Health	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families, and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better if completed; NUR 311 with C or better if completed; NUR 330 with C or better if completed
NUR	317	Nursing Theory for Psych	Theoretical concepts related to select and/or prevalent psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 367
NUR	318	Nurs Rsrch & Evidence Translt	Explores the process of scientific and clinical inquiry, research methodology, critical appraisal of research findings, and the translation of current evidence into nursing practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; NUR 391 with C or better
NUR	320	Nursing Practice	Integrates knowledge and attitudes from theory into the nursing care of adults in a variety of health care settings.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing major in clinical program; Corequisite(s): NUR 310; NUR 311; NUR 312; NUR 330
NUR	323	Nursing Practice Adult Health	Applies nursing process with selected alterations in health with focus on adult populations in the acute care setting.	N	LAB	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 with C or better; NUR 311 with C or better; NUR 330 with C or better; NUR 320 or NUR 484 (Nursing Practice) with Y Grade; Corequisite(s): NUR 313 or NUR 394 (Nursing Concepts Adult Health)
NUR	324	Nur Prac Psych/Mental Health	Application of nursing process, critical thinking, clinical decision making with individuals, families, and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	SEM	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 310 and NUR 311 and NUR 330 all with C or better if completed; Corequisite(s): NUR 316; Credit is allowed for only NUR 324 or NUR 484 (Nursing Practice: Psychiatric/Mental Health)
NUR	325	Health and Illness Concepts I	Applies physiologic and psychosocial concepts in the client domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the traditional BSN
NUR	326	Hlth & Illness Cncpts II	Applies concepts related to health and illness and evidence-based principles in the care of clients experiencing alterations in health. The physiologic and psychosocial concepts focus on the leading causes of morbidity and mortality with emphasis on safe, competent and compassionate nursing care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	330	Professional Nurse Attributes	Professional nursing roles and responsibilities.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	HU	Prerequisite(s): Nursing major in clinical program OR postbaccalaureate Clinical Nursing Program major
NUR	336	Experiential Learning	Applies assessment and care concepts in the nursing domain.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	337	Experiential Learning II	Practices professional nursing interventions including medication administration, bio-psycho-social care of the adult and childbearing family, and basic developmental assessment of the child.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	346	Nur Prac:Geriatric & Adult Hlt	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program

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NUR	347	Nur Prac Psych/Mntl Hlth & Fam	Applies concepts learned in previous courses to assist with developing plans, providing care and implementing teaching strategies to obstetric, gynecological and psychiatric/mental health clients and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	348	Intrmte Nursing Practice:Adult	Practices skills for professional nursing focusing on providing care for adult clients experiencing acute and chronic physiologic and/or psychiatric alterations in health in multiple acute and community clinical settings. Emphasizes providing safe, competent, compassionate and evidence-based care to individuals and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	349	Nursing Prac: Psych MH--Pre	Applies concepts related to bio-psycho-social care of adults experiencing psychiatric alterations in the nursing domain.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311; NUR 325; NUR 330; NUR 336; NUR 352 all with a C or better if completed; NUR 346 with a Y if completed
NUR	352	Fndmntl Cncpts in Nrsng	Applies care concepts in the client and nursing domain.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	353	Integrtn Cncpts Acrss Lifespan	Focuses on the physical, cognitive and socio-emotional development of individuals and families using a life cycle approach. Concepts reside in the client domain of health and wellness and include development, reproduction, family roles, spirituality and end-of-life/palliative care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	356	Nursing Concepts: Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing program; Pre- or corequisite(s): NUR 311 with C or better if completed
NUR	366	Nursing Practice Adults/Elders	Applies knowledge and skills essential to maintaining health and wellness in clients across the lifespan.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	6		Prerequisite(s): Nursing major - Postbaccalaureate Clinical Nursing Program student; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 356 with C or better if completed
NUR	367	Nursing Prac:Psych MH--Postbac	Applies nursing process, critical thinking, clinical decision-making with individuals, families, and groups experiencing acute and/or chronic alterations in mental health and/or psychiatric disorders.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 317
NUR	384	Gerontological Nursing	Focuses on optimizing the health of older adults and the management geriatric syndromes and chronic conditions.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade
NUR	391	Professional Nursing Theory	Analyzes the multiple dimensions of contemporary professional nursing.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	L	Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Pre- or corequisite(s): General Studies Literacy (L) course with C or better if completed
NUR	392	Hlth Prom Across the Life Span	Examines concepts and theories involved in health promotion across the lifespan and their application for nurses.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	404	Prof Nrse Cncpts:Intrmtd	Explores concepts related to quality of care, quality improvement, safety, innovation and communication within health care.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	405	Prof Nrs Cncpts:Advnced	Focuses on preparing to become active members of the nursing profession, including developing strategies for successful transition into professional practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	410	Nur Conc Comm Pub Health	Examines concepts related to health promotion, disease prevention, and health maintenance within the global community.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y grade if completed; Corequisite(s): NUR 420 or 484 (Nur Pract: Comm/Pub Hlth); Credit allowed for only NUR 410 or 494 (Nur Concepts Comm & Pub Hlth)

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NUR	411	Nur Conc Child bearing Ped	Concepts related to care of individuals and families within the childbearing and pediatric populations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and 315 and 316 all with C or better if completed; NUR 323 and 324 with Y passing grade if completed; Corequisite(s): NUR 421; Credit is allowed for only NUR 411 or 494 (Nursing Concepts Childbearing Individ & Families)
NUR	412	NUR Conc Pediatric Patients	Examines essential concepts related to the nursing care of pediatric patients and their families. Provides a nursing care approach for the pediatric patient and family across the healthcare continuum.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 with C or better; NUR 315 with C or better; NUR 316 with C or better; NUR 323 with Y grade; NUR 324 with Y grade; Corequisite(s): NUR 422; Credit is allowed for only NUR 412 or NUR 394 (Nursing Concepts: Pediatrics)
NUR	413	Nursing for Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412 all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 423
NUR	415	Nur Conc Childbearing Family	Examines the care of childbearing clients and their families. Embedded content focuses on providing care to clients along the healthcare continuum.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Corequisite(s): NUR 475; Pre- or corequisite(s): NUR 311 with C or better if completed; NUR 330 with C or better if completed; NUR 356 with C or better if completed; NUR 366 with Y grade if completed
NUR	416	Nur Conc: Com Pub Health	Examines selected concepts, theories, and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing locally and globally.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 476
NUR	417	Nur Conc: Ped Clients	Concepts related to care of individuals and families within pediatric populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 477
NUR	418	Nur Conc: Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	419	Managing Nursing Org Sys	Analyzes selected concepts and theories related to leading and managing nursing in organizational systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 478
NUR	420	NUR PRAC: Comm Pub Health	Applies community/public health nursing concepts in the delivery of primary, secondary, and tertiary care in a variety of community settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; Corequisite(s): NUR 410; Credit is allowed for only NUR 420 or NUR 484 (Nursing Practice: Community and Public Health)
NUR	421	Nur Prac Child-bearing / Famil	Applies nursing care concepts related to the child-bearing woman and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y grade if completed; Corequisite(s): NUR 411; Credit is allowed for only NUR 421 or NUR 484 (Nursing Practice: Childbearing Clients)

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NUR	422	Nursing Practice: Pediatrics	Focuses on clinical care of the pediatric client and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Pre- or corequisite(s): NUR 313 and NUR 315 and NUR 316 all with C or better if completed; NUR 323 and NUR 324 with Y passing grade if completed; Corequisite(s): NUR 412; Credit is allowed for only NUR 422 or NUR 484 (Nursing Practice: Pediatrics)
NUR	423	NUR PRAC: Comp Care/Clin Imm	Students perform nursing practice in a variety of clinical settings, laboratory and simulated patient care environments. Students provide nursing care to patients who are physiologically unstable in advanced medical-surgical, and critical care clinical environments. Students perform advanced psychomotor skills in the clinical, laboratory and simulation environments. Students also complete a clinical immersion experience in a selected clinical setting. During the clinical immersion experience, students have the opportunity to apply leadership and management principles, and work in interprofessional healthcare teams to provide nursing care to clients experiencing health alterations across the lifespan.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Pre- or corequisite(s): NUR 410 with C or better; NUR 411 with C or better; NUR 412 with C or better; NUR 420 with Y grade ; NUR 421 with Y grade ; NUR 422 with Y grade; Corequisite(s): NUR 413
NUR	425	Hlth & Illnss Cncpts III	Applies and integrates interrelated concepts related to health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	426	Hlth & Illnss Concepts IV	Applies and integrates interrelated concepts related to advanced health and illness concepts. Integrates evidence-based principles into the care of clients experiencing acute alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	430	Prof Nur Attrib Ldrshp & Mgmt	Applications of theories and concepts of organizations, management, and leadership with focus on nursing management and leadership in healthcare organizations.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre- or corequisite(s): NUR 410 and NUR 411 and NUR 412 all with C or better if completed; NUR 420 and NUR 421 and NUR 422 all with Y passing grade if completed; Corequisite(s): NUR 431
NUR	431	Prof Nur Attrib Innov Prof	Focuses on the process of transition to the professional nursing role, and the gathering, interpretation, and evaluation of evidence that serves as a basis for improving client outcomes and professional satisfaction.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade
NUR	436	Experintl Lrng Advanced	Students practice skills for professional nursing including advanced medication administration and bio-psycho-social care of the child and acutely ill adult.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	437	Experintl Lrng Readnss to Prac	Students demonstrate readiness for interprofessional nursing practice including coordination of nursing care of multiple patients.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	440	Community&Public Health Nursin	Examines selected concepts, theories and applications of epidemiology, community assessment, and population-centered health education for community and public health nursing in the United States.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better
NUR	444	Innovation in Nursing	Examines the role and behaviors of an innovator in the nursing profession.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better
NUR	445	Nursing Management	Examines selected theories and concepts of organizational behavior and the management of people and resources. Focuses on the application of selected management theories and concepts to nursing practice and health care systems	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 495; TWC 361; Pre- or corequisite(s): NUR 460 with C or better if completed
NUR	446	Nur Prac Ped &Cmplx Care Adult	Prepares learners in the application and demonstration of advanced theoretical knowledge, professional nursing practice, and interprofessional collaboration and referral in the management and delivery of safe, competent care of pediatric and adult clients experiencing serious health alterations.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	447	Nursing Practice: Pediatrics	Applies previous nursing knowledge to develop plans of care and implement teaching strategies to pediatric clients and their families.	N	LAB	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 315 with C or better; NUR 326 with C or better; NUR 337 with C or better; NUR 353 with C or better; NUR 347 with Y grade; NUR 348 with Y grade; NUR 349 with Y grade

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NUR	448	Nursing Practice Readiness	Prepares the learner for the practice of professional nursing in diverse settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	452	Cncpts in Pop-Basd Health	Assesses and examines the management of health and disease in the community. Focuses on health promotion, disease prevention and identification of barriers that prevent populations from maintaining optimal health. Discusses public health theories and models including epidemiology, health education and health behavior theory.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	453	Intgrtn Cncpts in the HlthCare	Explores the impact of health care policy, systems, economics, law and informatics on the delivery of health care today and in the future.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3	L	Prerequisite(s): advancement into the upper-division traditional BSN Nursing program; ENG 101, 105, or 107 with C or better
NUR	458	Community Care & Collaboration	Focuses on the assessment and analysis of health and disease in the community and population. Provides the data for the IPE Seminar in Senior 2 where an Interprofessional Team of students utilizes the information to plan and implement interventions to improve the health status of communities and populations.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): advancement into the upper-division traditional BSN Nursing program
NUR	459	Interprof ED/Co Seminar: Adv	Focuses on the development, implementation and evaluation of a community action project.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 404 with C or better; NUR 425 with C or better; NUR 436 with C or better; NUR 446 with Y grade; NUR 447 with Y grade; NUR 452 with C or better; NUR 458 with C or better
NUR	460	The Art of Nursing	Explores the aesthetic, ethical, and personal patterns of knowing in nursing for the practicing RN.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	HU	Prerequisite(s): NUR 315 or 318 with C or better or CEP student; TWC 361 with C or better; Pre- or corequisite(s): NUR 391 with C or better if completed
NUR	464	Capstone Prof Nursing	Synthesizes theories and concepts for professional nursing practice with a focus on role transition.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s) with C or better: BIO 202; CDE 232 or PSY 101 or PSY 341; CHM 101; MIC 205; General Studies MA course; NUR 315 or 318; NUR 391; NUR 392; NUR 440; NUR 444; NUR 445; NUR 460; NUR 495; TWC 361
NUR	475	Nursing Practice-Childbearing	Applies nursing care concepts related to the childbearing woman and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 415
NUR	476	Nur Prac: Comm Pub Health	Applies community and public health nursing concepts in the delivery of primary, secondary, and tertiary prevention from a population-centered perspective.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Pre- or corequisite(s): NUR 416
NUR	477	Nur Prac: Pediatrics	Focuses on clinical care of the pediatric client and family.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 311 with C or better; NUR 330 with C or better; NUR 356 with C or better; NUR 366 with Y grade; Corequisite(s): NUR 417
NUR	478	Nur Prac: Complex Care	Applies advanced psychomotor and leadership skills, nursing care delivery management, and interprofessional referral and collaboration for clients experiencing health alterations across the lifespan in advanced care settings.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 418
NUR	479	Nur Prac: Clinical Immersion	Builds on the knowledge and skills obtained in the nursing curriculum and integrates the curriculum concepts in varied and diverse practice settings. Supports the student's transition into the role of the professional registered nurse.	N	PRA	N	YGB	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 315 with C or better; NUR 317 with C or better; NUR 415 with C or better; NUR 417 with C or better; NUR 367 with Y grade; NUR 475 with Y grade; NUR 477 with Y grade; Corequisite(s): NUR 419
NUR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6		Prerequisite(s): Barrett Honors student

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NUR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
NUR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-4		Prerequisite(s): Upper Division Nursing Program students
NUR	495	Public & Global Health in Nurs	Analyzes public health concepts, theories, and practice with a focus on the health of all clients in a global environment. Includes core public health functions, domestic and international health care delivery systems, public health and health policy, conceptual and scientific frameworks for community/public health nursing practice, epidemiology, and global health issues.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4	G	Prerequisite(s): NUR 315 or 318 with C or better; NUR 391 with C or better; General Studies Literacy (L) course with C or better
NUR	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-7	L	Prerequisite(s): Upper Division Nursing Program students; ENG 101, 105, or 107 with C or better
NUR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-3		
NUR	501	Individual&InnovationLeader	Examines the role and behaviors of an innovator in nursing and the interprofessional role. Explores the skills required to create a compelling vision to influence others through innovation and ethical leadership. Examines and correlates different situational challenges utilizing principles of complexity and emotional intelligence to advance innovation in nursing and the interprofessional health care roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree-seeking graduate student
NUR	502	Adv Health Assessment & Promo	Uses lifespan developmental and social determinates frameworks to integrate advanced nursing concepts applied to health assessment and promotion.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): admission to a Nursing MS program
NUR	503	Adv Phy Assess Patho Pharm II	Uses an at-risk population framework to present, integrate and interrelate advanced concepts, practices and principles applied to the biological, cognitive and psychosocial domains of pathophysiology, pharmacotherapeutics and health assessment for health promotion among vulnerable populations appropriate to master's level nursing practice and roles.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 502 with B- or higher
NUR	508	IPCareCoordination Practicum	Care coordination practicum (90 approved contact hours) preceptored by a practitioner and/or faculty member. Practicum builds on care coordination and interprofessional collaborative practice core competencies, and theories, with an emphasis on the design, delivery and evaluation of culturally relevant and linguistically appropriate clinical prevention interventions, population health strategies and/or services that incorporate broad ecological, global and social determinants of health. Includes principles of epidemiological data; communication, quality improvement and health information technologies appropriate to master's level practice and roles within the context of team-based interprofessional clinical prevention and population health care and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Interprofessional Care Coordination MS student
NUR	509	Prevention & POP Health Prac	Preceptored practicum appropriate to master's level nursing practice and roles within the context of team-based interprofessional clinical prevention and population healthcare and/or services.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): NUR 501 with B- or better; NUR 502 with B- or better
NUR	510	Foundations Care Coordination	Focuses on the theoretical concepts of care coordination and case management, including current models, intervention components, evaluation methods and financing. Provides the foundation for understanding care coordination and the roles nurses have played in the evolution and implementation of the care coordination models.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): admission to Nursing (Care Coordination) MS degree or certificate program
NUR	511	Care Coord Interprofessional	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, care coordination, communication and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 501; NUR 510
NUR	512	Qual/Safety Outcomes CareCoord	Focuses on the nurse's role in care coordination, and how care coordination programs are used to provide cost-effective and patient-centered care, improve quality and safety outcomes for patients and families, and use health information technology to advance the goals of care coordination.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better

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NUR	513	I/PCP and HC Policy	Examines the nurse's role in communicating, collaborating and leading interprofessional teams to advance innovative care coordination models. Prepares nurses to influencing health policy through care coordination research and leadership.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 510 with B- or better; NUR 511 with B- or better
NUR	514	Nursing Theory Fundamentals	Focuses on the knowledge and skills essential to maintaining the health and wellness of clients across the lifespan and the concepts related to selected alterations in health in the adult population.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	5		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	515	Nursing Concepts Psychiatric MH	Theoretical concepts related to select psychiatric/neurobiological disorders as they affect nursing practice, with focus on individuals, families and groups. Applies knowledge and skills essential to maintaining health and wellness in Psychiatric Mental Health clients.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	516	Nurse Practice Psychiatric MH	Applies nursing process and critical thinking/clinical decision-making with individuals, families and groups experiencing acute/chronic alterations in mental health and/or psychiatric disorders.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	517	Nursing Practice Pediatrics	Focuses on clinical knowledge and skills essential to maintaining health and wellness in pediatric clients and their family unit.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	518	Nursing Practice Adults	Maximizes knowledge and skills essential to maintaining health and wellness in adult and geriatric clients.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	4		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	519	Prac: Care Coord Nurse Leader	This mentored practicum provides the learner with opportunities to apply care coordination (CC) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address care coordination initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 509 with B- or better
NUR	520	Pat Safety HC Qual Princ	Focuses on the application of core principles of patient safety and health care quality to patients. Explores current and historical factors that contribute to quality health care outcomes. Examines the influence of financial, legal and regulatory factors on patient safety and health care quality. Applies various theories, concepts and tools to promote patient safety and health care quality. Describes the principles of just culture and the relationship to analyzing errors. Discusses the nurse's role in advancing patient safety and health care quality. Infuses the Quality Safety Education in Nursing (QSEN) competencies into course activities.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Health Care Simulation MS, Nursing MS, or Nursing (Entry to Nursing Practice) MS student
NUR	521	HC Evidence Informatics Analysis	Focuses on applying information technology and research methodology to safety and quality initiatives. Students learn the role of technology related to select human factors engineering concepts and related clinical application (e.g., medication administration, clinical decision making). Focuses on determination of outcome measures related to evidence-based practice (EBP) and quality improvement (QI). Discusses survey methods including construction, data collection methods, and data analysis.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing MS or Nursing (Entry to Nursing Practice) MS student
NUR	522	Design Systems Pt Safety	Focuses on the design, implementation, evaluation and sustainability of patient safety and health care quality initiatives. Uses innovation and change theories, as well as high reliability and just culture principles, to support data collection, analysis and reporting within complex health care systems.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	523	Interprofessional Collaboration	Focuses on developing skills and strategies for interprofessional collaboration, team leadership, communication, and project management to improve patient safety and health care quality outcomes in an interprofessional health-related setting. Theory and evidence-based strategy for team building, maintenance and conflict resolution for improved team-based practice and performance.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	524	Nursing Prac/Childbearing Family	Applies nursing care concepts essential to maintaining health and wellness in the childbearing woman and family.	N	LAB	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student

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NUR	529	Prac:PT Safety&HC Quality Lder	Mentored practicum provides opportunities to apply patient safety and health care quality (PSHQ) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3-7		Prerequisite(s): NUR 520 with B- or better; NUR 521 with B- or better
NUR	530	Foundntl Cncpts Nursing Info	Focuses on the foundational concepts of nursing informatics. Analyzes the scope and standards of practice; ethical and privacy principles; relationships amongst biomedical, health and nursing informatics; and models, concepts and theories that support nursing informatics practice. Appraises accreditation and legal and regulatory requirements for health and nursing informatics practice.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): BMI 601 with B- or better; BMI 603 with B- or better
NUR	531	Advncd Cncpts Nursng Info	Focuses on advanced concepts in nursing and health informatics practice. Analyzes the health informatics metastructures, relationships between nursing and multidisciplinary standardized terminologies, trends in nursing and health informatics, ethical, privacy and legal issues, and the emerging role for the nurse informaticist.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530
NUR	533	NursingConceptsChildbearingFam	Concepts related to care of individuals and families within the childbearing populations.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student; Corequisite(s): NUR 524
NUR	539	Practicum: Nursing Informatics	Learners complete 135 hours of mentored clinical practice during this practicum applying nursing informatics (NI) concepts and principles in a practice environment at the unit, organization or systems levels. Tailored to the prior experiences and level of the learner and may include working in intra- and interprofessional teams to address informatics initiatives at the unit, organizational or systems levels.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 530 with B- or better; NUR 531 with B- or better
NUR	542	Readiness to Practice	Applies concepts that prepare nurses to deliver innovative, safe and quality client care in a dynamic health care paradigm. Prepares learners for their roles in professional nursing.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	544	TheoreticalFoundationsNursing	Analyzes the multiple dimensions of contemporary professional nursing and the interrelationships among theory, philosophy and practice	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College graduate student
NUR	545	Advanced Pharmacology	Provides advanced knowledge of pharmacology with an emphasis on the professional nurse's role in medication therapy and administration. Presents medication classifications within the framework of the patient's psychological and physiological function. Applies pharmacological principles to treatment of specific diseases and symptoms. Examines legal, cultural and ethical aspects of medication theory.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	546	Nursing Concepts Complex Care	Advanced theoretical knowledge and interprofessional collaborative care required for the delivery of safe and competent care of the adult client experiencing acute and complex alterations in health.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	548	PSHQ & Informatics	Focuses on the application of core principles of patient safety and health care quality to patients. Explores current and historical factors that contribute to quality health care outcomes. Examines the influence of financial, legal and regulatory factors on patient safety and health care quality. Students apply various theories, concepts and tools to promote patient safety and health care quality. Students describe the tools used to prevent errors, such as human factors, care coordination, informatics and patient engagement.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing MS or Nursing (Entry to Nursing Practice) MS student
NUR	550	Health Assessment	Provides knowledge and skills basic to health assessment in nursing. Emphasizes critical thinking skills required for accurate collection and analysis of client health information and provides opportunities for enhancement of physical assessment skills.	N	LEC	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	2		Prerequisite(s): Nursing (Entry to Nursing Practice) MS student
NUR	579	NED Practicum	Mentored teaching practicum includes application of teaching/learning principles in a specialized area of interest. Tailored to the teaching experience and level of the student. May include classroom, online or clinical teaching, attendance at approved conferences, relevant meetings or other activities that provide opportunity for the learner to gain expertise in the selected area of interest.	N	PRA	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 579 or NUR 580 (Teaching Practicum)
NUR	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing student

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NUR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Pre-requisites: Nursing Graduate student
NUR	601	Scientific Role Development I	First in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Analyzes current trends in the development of innovative scientists and leadership characteristics needed for future roles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	602	State of Science in Nursing	Focuses on research synthesis and critiques of the scientific literature as a basis for knowledge generation related to a focal area of research interest.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Corequisite(s): NUR 605
NUR	603	Soc Context Issues Nurs Hlthcr	Analyzes nursing practice and the healthcare system for an identified population using social-ecological approaches.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	604	Phil of Science Perspectives	Analyzes the history and philosophy of science as a basis for knowledge and academic scholarship in nursing and healthcare innovation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	605	Theory Analysis	Examines theoretical perspectives and approaches guiding research in nursing and healthcare innovation across the lifespan. Includes the historical evaluation, social contextual factors, implicit assumptions, and bias that influence nursing and healthcare innovation knowledge generation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	606	Scientific Role Development II	Second in a series that focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Posits the knowledge, skills and resources needed to expand one's career as an educator and scientist in a health-related leadership role in the context of a future health care environment. Explores strategies for progressive and creative approaches in preparing leaders for innovative change in education, research and health care policy affecting healthcare delivery.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student
NUR	607	Scientific Role Developmnt III	Focuses on the development of a scientific role identity in nursing and health care innovation, including the areas of education, policy and research. Students study the career trajectories of key leaders in nursing and health care innovation as a basis for development of their own personal plans for success, including research trajectories and marketing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1		Prerequisite(s): NUR 606
NUR	608	Qual Research Design Methods	Explores and critiques selected qualitative research approaches. Includes fieldwork exercises as an integral part of course expectations.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	609	Quant Research Design Methods	Examines multiple research approaches in clinical and health policy research from a quantitative perspective.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	610	Genomics and Population Health	Covers genetics and genomics, diverging into two tracks of subject matter interest. Emphasizes the effects of social determinants on population health and genetic expression, ethical, social and legal implications in the doctoral track; and emphasizes the planning and operational aspects of clinical trials and precision health care in the master's degree track.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 605; Credit is allowed for only HCR 610 or NUR 610
NUR	612	Advanced Analysis of Variance	Introduces theory, methods, and practice of analysis of variance.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		

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NUR	613	Prin of Regression&Correlation	Introduces theory, methods, and practice of regression analysis.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	614	Des & Implem of Theory-Based	Focuses on the knowledge related to advanced methods for intervention research. Examines methodological, ethical, and practical issues in the design and implementation of theory-based intervention studies.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		
NUR	615	Qual Data Management Seminar	Qualitative research methods applied to thesis, dissertation or qualitative research reports, focusing on data reduction, analysis, interpretation, credibility, ethics and dissemination.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 503 or CRJ 613 or EDP 503 or NUR 608 or PAF 610
NUR	616	Community-Based Partcpt Rsrch	Overview of Community-Based Participatory Research (CBPR). Familiarizes participants with key historical underpinnings of CBPR, principles of CBPR practice, as well as methodological CBPR considerations in building community partnerships, issue analysis, research planning, data gathering and data sharing.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only NUR 616 or NUR 691 (Community-Based Research)
NUR	617	Foundation in Science	Provides basic skills necessary for health-related research specifically geared toward (1) understanding concepts of widely used statistical methods with examples from health care; (2) ethical knowledge of human subjects research; and (3) processes of research including research design, interpretation and presentation of results and critiquing research articles.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): COE 502 or EDP 502 or EXW 501; Credit is allowed for only NUR 617 or NUR 691 (Foundational Concepts in Science and Statistics)
NUR	618	Research-Based Health Policy	Integrative synthesis course in which students apply values and knowledge from previous PhD core courses in philosophy of science, theory analysis, state of the science, quantitative and qualitative methods, and the art and science of teaching. Examines the role of scholars and scientists in health policy reform. Using tools from leadership and innovation science, advances strategies to accelerate the use of interprofessional research in policy decisions and advances the national agenda for improving health and the quality and affordability of health care.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 602, 603, 604, 605, and 609
NUR	628	Palliative Care in Older Adult	Focuses on theory and research underlying end of life and palliative care for the older adult utilizing current practice guidelines and research.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
NUR	629	Research Geriatrics	Gaining knowledge and skills in critical appraisal and synthesis of evidence to guide best practice in gerontology.	N	LEC	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only DNP 629 or NUR 629
NUR	630	Mechanisms of Disparities	Analyzes and applies the complex issues underpinning culture and health disparities related to a specific health outcome to research with a selected cultural group.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Mechanisms of Culture), 598 (Mechanisms of Disparities) or 630
NUR	631	Leveraging Culture	Analyzes the complex issues underpinning the development of evidence-based interventions among various cultural groups. Also analyzes methods of leveraging culture to optimize the development, delivery, effect and evaluation of health interventions for various cultural groups.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 630 (or NUR 598 Mechanisms of Disparities); Edson College of Nursing and Health Innovation PhD student; Credit is allowed for only NUR 598 (Leveraging Culture in Intervention Development) or 631
NUR	640	Integrative Theories of Innov	Analyzes cross-disciplinary theories of innovation for improving health and quality of health care.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Advanced Nursing Practice or Advanced Nursing Practice (Innovation Leadership) DNP student or NUR 605; Credit is allowed for only NUR 640 or NUR 691 (Integrative Theories of Innovation in Healthcare)
NUR	641	Theories of Emergent Leadership	Analyzes cross-disciplinary theories of leadership. Emphasizes leadership frameworks that describe, explain and predict the relationships among leadership and healthcare innovation and outcomes.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 640. Credit is allowed for only NUR 641 or 691 (Theories of Emergent Leadership in Healthcare Innovation)
NUR	650	Human Lactation in Post-Modrn	In-depth exploration of the complex and multifaceted social, cultural and environmental contexts that affect the public health goal of improving successful breastfeeding during the first years of life.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only NUR 650 or 691 (Human Lactation in the Post Modern World)

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NUR	670	Curriculum Development	Includes analyses of historical, philosophical, societal, environmental, cultural, technological, and educational factors of curriculum development in academic and practice settings.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): Nursing (Nursing Education) MS or Graduate Certificate in Nursing Education; Pre- or corequisite(s): NUR 671 with B or better
NUR	671	Teaching: Academic & Practice	Analyzes theories, issues, research related to teaching in nursing and educational leadership. Focuses on the process of teaching and learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program.
NUR	672	Design/Delivery:Mediated Instr	Addresses instructional design issues, theory, and practices related to online and electronically mediated learning.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	673	Produce & Evaluate Programs	Critical examination of standards, regulatory environment, administrative systems, leadership requirements, technological infrastructure, human factors, future trends regarding mediated education planning, production, and evaluation.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Pre-requisites: Nursing Graduate student or Certificate program; NUR 670
NUR	677	Teaching Intensive	Designed as a mentored teaching experience in nursing and a mentored exploration of the concept of scholarly citizenship as applied in the educator role in interdisciplinary, university-level education. Includes opportunities for students to examine different philosophies and theories of traditional and mediated teaching and learning; design content and learning experiences for selected topics; compare and contrast various culturally relevant, learner-centered strategies, technologies, media and Web-based tools for classroom and clinical use and analyze evaluation methods. Includes opportunity for exploring educational policy and translation of policy into best practices.	N	SEM	N	GNA	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): NUR 670; NUR 671; Credit is allowed for only NUR 677 or NUR 691 (Scholarly Citizenship: Teaching Intensive)
NUR	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	688	Geriatric Syndrome Management	Focuses on diagnosis and management of complex diseases and syndromes in the geriatric population.	N	SEM	N	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only DNP 688 or NUR 688
NUR	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	N	IND	N	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		Pre-requisites: Nursing Graduate student
NUR	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-12		
NUR	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Edson College of Nursing and Health Innovation	Edson College of Nursing and Health Innovation	1-15		
OBS	501	Obesity Prevention Management	Helps students understand the complex etiology of obesity and enhances their ability to work with individuals and populations at risk of obesity to develop effective behavior change-based strategies for prevention and management of the condition across the lifespan.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Obesity Prevention and Management MS major; Credit is allowed for only OBS 501 or OBS 598 (Obesity Prevention and Management)
OBS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		

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OBS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
OBS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OGL	10	Leadership Development	Trains and manages the student team leads for the Jump Start Program. Students learn ways to effectively manage, facilitate and lead group discussions and activities.	N	LEC	Y	YGB	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	0		
OGL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
OGL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	200	Intro to Org Leadership	Basic introduction to leadership by focusing on what it means to be a good leader. Examines topics such as the nature of leadership, recognizing leadership traits, developing leadership skills, creating a vision, setting the tone, listening to out-group members, handling conflict, overcoming obstacles, and addressing ethics in leadership. Gives attention to helping students understand and improve their own leadership performance.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	220	Behavioral Dynamics in Org	Explores the different theories, strategies and skills in the fields of organizational behavior and interpersonal relationships. Covers critical skills and perspectives associated with cross-cultural relationships, personality and values-driven behaviors, empathy, perspective-taking, learning and motivation, conflict resolution, stress management, effective communication, group dynamics, and diagnosis of performance-related issues in organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
OGL	240	Intro to Project Management	Examines various theoretical project management approaches as well as gives hands-on experience of project management tools and steps.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Credit is allowed for only OGL 240 or OGL 320
OGL	260	Resource Allocation in Org	Introduces the decision-making framework of resource allocation within the broader context of organizations and society. Students learn that resource allocation decisions are regularly guided by values, organizational purpose, and fundamental principles of value creation and sustainability. Primarily focuses on the development, management, and allocation of tangible and intangible resources; accounting statements; profit and loss drivers; risk, return and tradeoffs; and stakeholder accountability.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): MAT 117 or any course with General Studies MA designation OR Visiting University Student
OGL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	300	Theory Practice of Leadership	Students perform an in-depth study of leadership theories and their practical applications in formal organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	320	Foundations Project Management	Covers effective project management skills. Investigates components of project management and the project life cycle such as: creating charters, developing a project plan and schedule, managing clients and stakeholders, analyzing risk, creating project teams, and exploring other tools needed to effectively manage projects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only OGL 240 or OGL 320 OR Visiting University Student
OGL	321	Project Leadership	Explores how an organization's leaders are responsible for conceiving, designing, implementing and managing the overall objectives, culture, environment and processes as part of the project management process. Within this context, primarily focuses on understanding project management, aligning project management within an organization, project management oversight, projects as capital investments, globalization and resource optimization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 45 hours OR Visiting University Student
OGL	322	Project Time Management	Explores project scheduling and time management within the broader context of the planning effort. Students learn how important the determination of the timing and sequence of project activities is to the planning process--and ultimate project success. Primarily focuses on understanding bar charts, basic networks, the critical path network, precedence networks, resource allocation, schedule updating, schedule compression, scheduling and schedule risk management.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student

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OGL	323	Project Cost Management	Concepts and complex processes of effective project cost management. Primarily focuses on project needs assessment, cost estimation, project cost control, project budgeting, cash flow management, financial management, value management, configuration management and supply chain management. Students also learn to appreciate the importance of integrating cost and value management processes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	324	Resources Project Management	Major elements of project resource management as well as the broader context of this critical planning function. Students learn that sound resource management is an important part of developing a sustainable competitive advantage in the emerging global marketplace. Primarily focuses on operations and productivity, resources in project management, product design, process strategy, layout strategy, human resources and job design, supply chain, inventory management and scheduling.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	326	Project Procurement Management	Concepts and processes of procurement management. Primarily focuses on sourcing management, supplier selection, contracts and legal requirements, risk management, negotiation, project management, quality, supplier management and financial decisions. Effective procurement requires the use of good business practices capable of maximizing value to the organization through the acquisition of goods and services. Students learn that procurement professionals control the entire sourcing and acquisition process.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 240 or 320; minimum 56 hours OR Visiting University Student
OGL	340	Organizational Skills	Develops and enhances skills needed in effective organizations such as communication and the use of technology.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
OGL	343	Social Processes in Orgs	Examines social processes and human interactions within different organizational contexts and engages in experiential learning through team-based projects.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 343 or OGL 343 OR Visiting University Student
OGL	345	Organizational Ethics	Explores and considers normative and applied ethics within a variety of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 345 or OGL 345 OR Visiting University Student
OGL	350	Diversity and Organizations	Students engage in a critical analysis of individual, cultural and organizational diversity.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 56 hours; Credit is allowed for only BIS 350 or OGL 350 OR Visiting University Student
OGL	355	Leading Org Innovation	Processes and methods to ensure current organizational success and sustainable relevance in changing domestic and global environments. Presents an introduction of strategic management with primary emphasis on situation analysis, strategy formulation, and long-term strategy evaluation. Covers the strategic leadership context using external and internal analysis to inform functional and competitive strategies that can be applied across multiple sectors and industries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	357	Assessment in Organizations	Considers the role and function of assessment in effective organizations. Provides the knowledge and tools required to identify, collect and analyze information to assess organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum junior standing or minimum 56 hours; Credit is allowed for only BIS 357 or OGL 357 OR Visiting University Student
OGL	360	Assessment of Leadership	An analysis of effective leadership and a guide for developing the competencies most likely to produce effective leaders. Utilizes examples from contemporary and historical sources and peer-mentoring sessions to enhance leadership development with self-reflection, creative and critical thinking, effective teamwork, and achievable future visions.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OGL	365	Organizational Contexts	Explores how organizations function by analyzing in depth a specific organizational context such as: health care, technological innovation, family, education, government, community, religion, nongovernmental organizations, the economy, or country/country groups.	Y	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student

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OGL	375	Corporate Ldrshp - Starbucks	Examines leadership from the perspectives of the leaders of one of the most trusted and respected companies in the world, Starbucks.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Starbucks College Achievement Plan student; Credit is allowed for only OGL 375 or OGL 394 (Corporate Leadership: Starbucks)
OGL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	421	Project Risk Management	Philosophy, principles, practices and techniques for managing risk in projects. Covers risk identification, qualitative risk management, risk treatment, monitoring and review, project processes, risk allocation, environmental risk and quantification of project risk. Students learn that risk management assists project managers in setting priorities, allocating resources and implementing actions and processes that reduce the risk of the project not achieving its objectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student
OGL	422	Project Quality Management	Process and theory of total quality management with primary emphasis on the total quality approach, ethics and corporate responsibility, strategic alliances, quality culture, employee empowerment, leadership and change, team building, effective communication, and tools and techniques. Students understand how continual improvement of people, processes, products/services, and environments can enhance the process and outcomes of project management. Students have the opportunity to develop practical total quality management skills as they apply theory and practice to real-world cases.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): OGL 321; minimum 55 hours OR Visiting University Student
OGL	481	Org Leadership Pro-Seminar I	In part one of their pro-seminar experience, students reflect on their experiences in the organizational leadership program, focusing on the key competencies they have learned. Applying the organizational frames concept, students synthesize key learnings across their education and explore organizational leadership through multiple perspectives such as: structural, human resources, political, symbolic or ethical.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): BIS 340 or OGL 340; BIS 345 or OGL 345; BIS 350 or OGL 350; OGL 240 or OGL 320; OGL 300; minimum 90 hours
OGL	482	Org Leadership Pro-Seminar II	In part two of their pro-seminar series, students explore how their personal background experiences, individual characteristics, knowledge, skills and abilities can inform career choices that maximize their strengths, values and passions. Students explore strategies for career management and work/life integration from a variety of perspectives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; OGL 481 with C or better
OGL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
OGL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
OGL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
OGL	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
OGL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7	L	Prerequisite(s): Organizational Leadership major; minimum 90 hours; BIS 343 and 345; ENG 102 or 105 or 108 with C or better; OGL 200, 220, 240, 260, 300, 321, and 350
OGL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		

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OGL	520	Social Psychological Perspecti	Social psychology is defined by the social influence that all people have on the beliefs, feelings and behavior of others. Studies social influences, the behavioral ramifications associated with the psychology of social processes and the ramifications for organizations and organizational leadership. The foundations of the field of social psychology, methodological approaches, interdisciplinary perspectives and application-oriented ideas and innovations form the basis for this course that integrates scholarship and applied social psychology to gain an enhanced perspective on the social influences associated with organizational and interpersonal behavior. From a leadership perspective, explores ideas as diverse as interpersonal influence, attitude formation and differentiation, stereotyping and prejudice, attraction, persuasion, obedience and aggression.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	530	Critical Perspctv Ldshp Theory	Engages the normative and epistemological underpinnings of many of the theories of organizational leadership studies. This critical engagement explores how assumptions about leadership and leadership theories may challenge or reinforce, overtly or not, oppressive social relations. Places leadership studies as an academic field in a broader social, political, cultural and ethical context to best address the embedded assumptions in leadership relations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	540	Evidence Based Inquiry	Provides a broad understanding of the methodological issues involved in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of research methods, whether inductive, deductive or abductive. Largely hands on with a focus on discussion and exercises.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	550	Leading Organizational Change	Organizations are a combination of structures, processes and relationships that bring people together to achieve a common goal. However, organizations do not operate in isolation—they are embedded in complex social, political and financial contexts. Leadership requires individuals to discern and balance competing demands and tensions inherent in organizations. Provides an overview of organizational theories to help leaders understand and be effective in these contexts. By looking at organizations through metaphorical lenses such as machines, brains and organisms, students learn how to create new options for organizational success in ever-changing operating environments. Applies theories to case studies to develop insights and innovative approaches to organizational change. A student deliverable is the creation of a plan to map out the student's capstone project in preparation for the applied project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 520; OGL 530; OGL 540
OGL	551	Ldshp Emotional Intelligence	Encourages greater knowledge of self through personal reflection, participation in experiential activities and numerous opportunities to make sense of discoveries. All of this occurs within the context of expanding knowledge of leadership skills and abilities. Encourages students to take every opportunity to learn about and bring insights to bear in classroom discussions. Shapes the leader within so that students are best positioned to lead in all areas of life. Over the next few weeks, explores the essential knowledge, abilities and values relevant to effective leadership. By the end of this course students have a greater understanding of their own leadership style and developmental plan for acquiring new leadership-related knowledge and abilities throughout their careers.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	552	Leading Diverse Teams	Helps students build more effective working relationships and improve their ability to lead, influence, cooperate and work effectively with others in today's increasingly team-oriented organizations. This course may differ from previous courses taken. At the center of the course is an intensive, unstructured learning group experience. The primary educational tool in this class is experience in a group (in this class referred to as a T-Group or Training Group). Other educational resources are readings, brief theory discussions, personal journals and a personal reflection paper after the class sessions conclude. These are fundamental for helping students to frame learning group experience and for facilitating learning. Emphasizes learning about oneself in the context of others based on the here-and-now experience of the group.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	553	Intercultural Leadership	In today's increasingly global and interconnected world it is important for leaders to understand the role that culture plays in one's leadership and communication style. Students obtain the knowledge and skills necessary to lead in culturally diverse environments. Through readings, discussions, video and interactive simulations, students gain a concrete understanding of a variety of leadership and communication styles that are found throughout the world. Students also increase their intercultural competencies and global awareness.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	554	Learning & Development in Orgs	Focuses on adult learning interventions and professional development within the context of a learning organizational setting. Integrates motivation and adult learning, current neuroscience, Bohm dialogue and instructional design. Develops the knowledge and skills needed to plan, design, develop, implement and evaluate adult learning interventions (materials, courses, curricula, programs) within different forms of organizations.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	555	Leading Beyond Conflict	Today's leaders are increasingly confronted with conflicts that escalate into issues that could result in costly litigation. Comprises a review and analysis of contemporary methods of alternative dispute resolution, including arbitration, negotiation and mediation, with a strong focus on mediation. Students learn about the alternatives to costly litigation and develop working strategies to take advantage of these alternatives.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	556	Ldrshp Wcked Envrnmntl Problms	Environmental leadership promotes a societal change such that we move away from the perspective where economic growth is valued and takes precedence above all to one that both recognizes the limits and value of natural resources in our environment and embraces just conservation practice. The environmental challenges we are faced with today (e.g., climate change, renewable energy) are described as "wicked." Wicked problems are difficult to explain, plainly define, have no one solution, and are often the result of other indefinable problems. Environmental leadership focuses on engaging followers to jointly and creatively confront wicked challenges and promotes environmental justice addressing the relationship between social inequality and environmental quality among various stakeholders. Course critically evaluates these leadership dimensions. This examination is not limited to Western ideals found in corporate organizations but also extends to conservation practice in the developing world.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	558	Leading Organizational Innovat	Every modern organization, regardless of sector or mission, needs leaders who understand the impacts of continuing innovation on organizational success and sustainability. Examines how leadership can facilitate innovative activities within every level of an organization. Students conduct independent research for integration into a collaborative team project in the development of a graphical conceptual model that includes factors such as culture, structure and collaborative activities that enhance organizational innovation.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	559	Modelng Systms and Stkhldrs	Studies how leaders can use systems theory and stakeholder theory to assess the inputs from external stakeholders and their impacts on internal organizational systems. Using current literature, students work independently and in teams to build and apply a conceptual model of the significant relationships among organizational systems and stakeholders. Results highlight relationships among variables that can be tested using quantitative and/or qualitative research methods.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	561	Collaborative Governance	Exposes students to the opportunities and challenges of the non-market, non-state realm of nongovernmental organizations and how they facilitate private-public partnerships. Assesses the realm of action, appropriateness of their missions and where they find their limitations. Requires students to think globally and consider the roles of various actors of civil society with a critical eye.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	562	Resource Development in Orgs	Many types of resources are needed for organizations to achieve long-term sustainability. Surveys various capital resources firms need to succeed. Covers tools such as the International Integrated Reporting Council's six capitals framework (financial, manufactured, intellectual, human, social, natural) and theories that undergird these models. Through readings, case studies, and assignments, students learn about the process of value creation; the relationship between resources and an organization's business model; how the various forms of capital can be measured and reported; and what leaders can do to intentionally develop multiple forms of capital in a way that creates financial returns for the organization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	563	Leading Social Change	Focuses on methods used to reform social, cultural or political norms, beginning at the local level and connecting with movements for broader social change. Grassroots movements arise on all sides of the political spectrum, and local movements can unite activists around common goals despite larger ideological differences. The term "grassroots" is a misnomer, however, in that it implies the lack of leaders or of institutional support, whereas in reality, leaders attempting to change society must learn to network with a variety of stakeholders, from the level of individual neighbors to political leaders and large institutions. Students look critically and creatively at the ways local leaders have worked on a daily basis to promote community-based causes, in order to become more effective local activists, organizers, and civic and community leaders.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	565	Future of Wrk and Organization	Focuses on the dynamic nature of work, labor and occupations related to social and technological change; the impacts on workers, management and society. Also addresses new and changing occupations and leadership roles related to new economies of scale.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	568	Women and Leadership	Investigates how gender is produced, operationalized and reified in the workplace. Course content is specific to the role of women at work and in leadership. Emphasizes understanding the reproduction of gender inequality with a focus on how commonly shared beliefs about gender and other social categories operate through interaction to differentially affect the experiences of men and women in ways that often disadvantage women. Despite majority representation across a range of public and private sectors, women continue to be visibly absent from leadership roles. Although, some purport that progress has been made to narrow the existing leadership gap for women, more men than women achieve leadership roles and assume these positions at a faster pace than their female counterparts. What contributes to this ongoing phenomenon? What are the results of the underrepresentation of women in leadership? How might organizations intervene and cultivate equity in the workplace?	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	569	Indigenous Ldrshp Diplomacy	Offers critical insights into how indigenous peoples around the world have responded to challenging issues in both historical and contemporary contexts by drawing from case studies, primary source materials, and emerging scholarship on indigenous leadership and diplomacy.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student

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OGL	570	Analyzing Organizations	Focuses on the qualitative and quantitative research methods that are commonly used to assess organizations. Explores how best to frame organizational assessments and explore possible methodological choices for assessment design. Discusses both quantitative designs and qualitative approaches to organizational assessment. Focuses on planning assessments, making informed research decisions, understanding the ethical implications of organizational assessment, carrying out research and reporting finding.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	571	Advanced Leadership Assessment	Students reflect on and assess their advancement as leaders while also critiquing and assisting with the development of leadership abilities in colleagues. Leadership effectiveness and social dynamics are analyzed in contexts ranging from students' own experiences to narratives in historical, literary, anthropological, political and sociological contexts. Hands-on practice with leadership assessment surveys is central to the course, and students are trained in creating their own versions of qualitative and quantitative questions on 360-degree surveys.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	574	Qualitative Data Analysis	Research design and research methods in leadership using qualitative approaches.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 540
OGL	575	Quantitative Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in basic data analysis in leadership research. Exposes students to the assumptions, principles and applications of basic quantitative research methods and analytical techniques, such as t-test, ANOVA and simple regression. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student; OGL 540
OGL	576	Adv Multivariate Data Analysis	Provides a broad understanding of the theoretical and methodological issues involved in applied multivariate data analysis in leadership research. As such, exposes students to the assumptions, principles and applications of a selected set of multivariate techniques, from multiple regression to mediation, moderation and conditional process analysis. Uses the SPSS statistical software.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	577	Struct Eqtn Model Org Ldr Rsrch	Provides a broad understanding of the theoretical and methodological issues involved in structural equation modeling in leadership research. As such, exposes students to the assumptions, principles and applications of structural equation modeling. Uses SPSS and AMOS statistical packages.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	578	Agent-Based Modeling	Leadership is a complex process that involves multiple stakeholders, including followers, organizations and communities. Students learn to think about leadership processes systematically and learn to use NetLogo to build agent-based models capturing phenomena of interest. Also examines how the interactions among individual agents in the system create dynamics and emergent collective outcomes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Organizational Leadership MS student
OGL	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OGL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): Organizational Leadership MS student

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OGL	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): Organizational Leadership MS student
OGL	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): Organizational Leadership MS student
OMT	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
OMT	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 OR Visiting University Student
OMT	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
OMT	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
OMT	343	Occupational Safety/Ergonomics	Health and safety movement, accident theories and effects, OSHA standards and liability, safeguarding, hazards, workers' compensation, ergonomics, and safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
OMT	402	Legal Issues for Technologists	American legal system and impact on technology management issues: contracts, torts, intellectual property, white collar crime, antitrust, environmental, and employment.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	430	Ethical Issues in Technology	Topics in social responsibility for industrial technology and engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours; Credit is allowed for only OMT 430 or OMT 504 OR Visiting University Student
OMT	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431
OMT	440	International Business	International business principles and operations, including partnerships, trade agreements, currency issues, international sales, and cultural differences between countries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3	G	Prerequisite(s): MGT 300 or TMC 330 with C or better; minimum 56 hours OR Visiting University Student
OMT	452	Industrial Human Resource Mgmt	Explores the management of workplace issues and contemporary events as it relates to human capital within an organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better
OMT	480	Organizational Effectiveness	Explores the interaction of individual and group behavior with organizational efficiencies, strategies, structure and culture so organizations can work more effectively.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): MGT 300 or TMC 330 with C or better OR Visiting University Student
OMT	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		
OMT	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Pre-requisites: Minimum Junior standing; Minimum 2.25 GPA
OMT	503	Marketing Management	Modern methods and industrial case studies of planning, pricing, promoting, and distributing goods and services in the global marketplace.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	504	Ethical Issues in Technology	Analyzes legal and ethical framework for making managerial decisions in the corporate environment of engineering- and technology-related industries.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only OMT 430 or OMT 504
OMT	520	Strategic Mgmt of Technology	Analyzes entrepreneurial dynamics and technology development, methods of research and development management, new technology implementation, and start-up organization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	548	Statistical Methods for Rsrch	Multivariate statistical techniques to analyze research data. Uses statistical software and applications.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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OMT	549	Research Techniques & Apps	Selection of research problems, analysis of literature, individual investigations, preparing reports, and proposal writing.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	560	Managerial Decision Making	Focuses on structural thinking to make informed and optimal managerial decisions.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	570	Advanced Project Management	Planning, organizing, coordinating, and controlling staff and project groups to accomplish the project objective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only OMT 570 or TMC 470
OMT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
OMT	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	112	Identity Service America Democ	Introduces the history of American democracy and civic engagement, while developing civic identity through hands-on democracy-in-action assignments. Examines the rich history of civic engagement as it applies to different races, sexes, genders and religions to unpack the what, why and how of getting involved and making a difference in public service. Examines cultural identity, including diversity of race, sex, gender and religion, as it contributes to social, civic, political and democratic life. Understanding how to participate in civic society culminates in the creation of a plan to contribute to the ongoing mission of sustaining a vibrant, healthy and unifying American democracy.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3	SB & C	Credit is allowed for only CPP 112 or CPP 194 (National Service and American Democracy) or PAF 112 OR Visiting University Student
PAF	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
PAF	200	Public Serv & Policy in 21st C	Provides a broad introduction to the field of public service and leadership. Topics include an overview of management, policy, urban studies, and leadership in the public sector. Covers the history and development of the public sector, as well as how it serves contemporary society.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	201	Economics and Public Policy	Introduces the terminology and methods of analysis in microeconomics. In particular, examines the behavior of individual consumers and firms, with a focus on market failures and the role of government policy in correcting those failures. Applies microeconomic principles to the distribution of income, policies for eliminating poverty and discrimination, the problems of environmental pollution, and the impact of different market structures on economic activity.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3	SB	
PAF	220	Introduction to Urban America	Investigates traditional and evolving forms of civic engagement and management. Examines leadership and organizational models to urban development and decision making.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	240	Urban Policy	Examines major theories about the purposes and processes of urban policy formulation, adoption, and implementation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3	C	
PAF	300	Public Management and Admin	Examines the context and role of the public manager and the development of the field of public administration.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FIS 351 or PAF 300 OR Visiting University Student
PAF	301	Applied Statistics	Focuses on statistical techniques used in social science research. Applies concepts such as measures of central tendency and dispersion as well as statistical techniques, including the following: one-sample z and t tests, two-sample t tests, chi-square, and correlation. Goals include helping students understand the mathematical and statistical concepts presented and assisting them in using these concepts in everyday life and in the study of social sciences.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3	CS	Prerequisite(s): MAT 142 or higher OR Visiting University Student
PAF	302	Public Service Research Method	The philosophy, scope, and methods of public sector research. Examines quantitative and qualitative research methods and research design.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): Urban and Metropolitan Studies BA or BS major OR PAF 301 with C or better OR Visiting University Student
PAF	305	Urban Governance	Examines major shifts and trends in urban America. Concentrates on the changing approaches to governance and policies of urban areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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PAF	311	Leadership and Change	The leader's role in bringing about significant organizational and societal change with special attention to group and organizational behavior dynamics, establishing a vision, mobilizing and empowering individuals and groups, and assessing outcomes of the change process in a variety of settings.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student
PAF	340	Contemporary Policy Challenges	Develops conceptual, critical, and practical understanding of public policy, the policy process, and policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 30 hours OR Visiting University Student
PAF	350	Intro Science & Tech Policy	Explores the variety of ways in which governments make policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	351	Urban and Metropolitan Studies	Examines the city using a multidisciplinary approach drawing from different historical, cultural, social, philosophical, and economic issues and concepts.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	352	Urban Theory	Examines the sociological, economic, and political theoretical positions underlying the development and evolution of metropolitan areas.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	360	Emergency Management I	Emergency management, including basic issues of all-hazards management, phases of emergency management and basic operational systems of incident command and the broader incident management system in the United States.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	361	Hazards and Risk Management	Overview of natural and technological hazards and disasters, including core concepts and evidence in the field. Introduces concepts of risk and risk management and how they are used in emergency and disaster preparedness, response and mitigation operations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	363	Tech in Emergency Management	Explores latest apps, software and social media used in planning (e.g., GIS for hazard mitigation), public crisis communications (via apps or social media platforms) and incident response platforms (for resource and operations coordination). Emphasizes hands-on experience with such tools.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): MAT 142
PAF	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
PAF	400	Senior Capstone Project	Teaches students to solve problems related to the public sector by applying theory, knowledge, and methods from previous courses to a hands-on project in the community. Seminars include guest speakers and discussions on professional development. Students work as individuals and as a team to prepare research papers and a professional report that is presented to the community.	N	LEC	Y	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): PAF 200 with C or better; PAF 201 with C or better; PAF 301 with C or better; PAF 302 with C or better; PAF 311 with C or better; PAF 340 with C or better; PAF 460 with C or better OR Urban and Metropolitan Studies BA or BS student
PAF	405	Citizen Engagement & Com Bldg	Develops a conceptual, critical, and practical understanding of urban dwellers' involvement in community affairs as citizens and as builders of vital neighborhoods and vibrant cities.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	406	Public Admin & Community Dev	Critically examines the concepts community and development and considers how important forces such as diversity, civic life, changes in social space, and globalization, affect our understandings about these concepts and influence our actions.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 30 hours
PAF	410	Building Leadership Skills	Introduces understanding and developing leadership skills, including an examination of leadership theories and models from multidisciplinary and crosscultural points of view, an assessment of the student's leadership capabilities, and practical applications to improve individual leadership capabilities.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3	SB	Prerequisite(s): minimum 30 hours; Credit is allowed for only PAF 410 or URB 410 OR Visiting University Student

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PAF	420	Managing Across Boundaries	Within the U.S. system of federalism, thousands of governments interact at different levels on issues ranging from taxation and education to zoning and water. Further, governments at all levels interact with nonprofit and industry sectors to provide public services and collaboratively address complex regional and, increasingly, global challenges. Finally, governments and other service providers interact across local, state, regional and national boundaries. Examines how to manage across boundaries (e.g., governmental, nongovernmental, stakeholders, communities, sectors). Emphasizes intergovernmental relations from the perspective of local and state governments; also exposes students to interstate and international forms of intergovernmental relations. Exposes contemporary public management frameworks and applies these frameworks to understand how leaders manage increasingly complex public challenges.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	421	Leadership Capstone	Builds upon leadership courses in the Leadership and Ethics certificate program by applying concepts and examples from the readings as well as individual experiences.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): CPP 301 or PAF 410; PAF 311
PAF	424	Emergency Management II	Accidents and emergency situations have plagued man since the beginning of history and will undoubtedly occur during our conceivable future. Armed with knowledge and skills for managing such occurrences can lessen their impact on society. Presents the theories, principles and approaches to emergency management. Discusses the philosophy of comprehensive emergency management with the four attendant steps which include mitigation, preparedness, response and recovery. Presents an analysis of past disasters along with their impacts on policy formation leading to the current FEMA all-hazards approach. Discusses the role, duties and importance of the emergency manager throughout the course. Reviews contemporary threats such terrorism. Finally, presents legal issues involving emergency management.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): PAF 360 with C or better
PAF	425	National Incident Mgmt System	Covers concepts, terminology, players, compliance requirements, including doctrine of National Incident Management System per HSPD-5. Discussion of National Response Plan.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours
PAF	426	Intelligence Analysis&Home Sec	Covers the role of intelligence in the United States with an emphasis on its application across homeland security and related agencies in the public sector and parallel private-sector organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	460	Public Service Ethics	Role, values, and issues of public management in democratic governance, citizen participation, power structures, and professional codes of conduct.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	461	Homeland Security	In-depth analysis of policies, procedures, and organizational structure for effective homeland security program. Covers all hazard/all risk philosophy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PAF 461 or CRJ 554 OR Visiting University Student
PAF	468	Planning and Exercises	Requirements, planning, conduct, and critique of exercises related to emergency planning. Emphasizes realism using moulage and props.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PAF	469	Terrorism Defense	Explores the background and evolution of terrorism. Presents specific tactics for preparation for and response to acts of terrorism.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ABS 598 (Terrorism Defense) or PAF 469 OR Visiting University Student
PAF	470	Topics Public Econ & Fin Mgt	Provides an analysis of public economic practices and problems in a federal system. Presents detailed descriptions, where appropriate, of significant institutions and applies modern economic theory to the ways that these institutions finance and deliver services.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): ECN 212 or PAF 201 with C or better
PAF	471	Public Policy Analysis	Provides further study in the concepts, models, and operational methods used in public policy decisions and analysis. Enables students to develop higher skills needed for defining policy issues, identifying alternative solutions, and predicting the potential impact of policy alternatives.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): PAF 301 with C or better; PAF 340 with C or better
PAF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		

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PAF	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-6		Prerequisite(s): Barrett Honors student
PAF	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PAF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
PAF	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-7		
PAF	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-3		
PAF	501	Public Service Research I	Covers research-based concepts and tools that can be used to diagnose and improve public programs and initiatives. Emphasizes understanding a program's logic and objectives; framing questions in a manner that facilitates investigation and collecting, analyzing and presenting quantitative and qualitative data from a variety of sources relevant to the practice of public administration and policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	502	Public Service Research II	Application of quantitative methods for inferring cause and effect relationships in public administration and policy. Interpretation, critique and execution of statistical analysis of data for effective evaluations, particularly multiple regression analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PAF 501 with C or better
PAF	503	Public Affairs	Development and context of American public administration and policy, role of administration in governance, and values and ethics in administration.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	504	Microecon of Public Policy I	Provides key principles of microeconomics. Places particular emphasis on developing the analytic tools of economic reasoning and using these tools to examine policy interventions of interest to public managers.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	505	Public Policy Analysis	Institutional and formal analysis of policy processes, decision making, and problem solving; values, ethics, and the uses of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	506	Public Budgeting and Finance	Legal, social, economic, political, institutional, and ethical foundations of governmental finance, budgets, and budgeting.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	507	Public Human Resource Mgmt	Personnel systems, behavior and management of people in public organizations, collective behavior, unionism, conflict management, motivation, productivity, and ethics.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	508	Organization Behavior	Theory and application in the management of organizational behavior with emphasis on leadership and the public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	509	Public Affairs Capstone	Capstone application of core course knowledge, skills, and abilities required for public service.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s) with C or better: degree- or nondegree-seeking graduate student; PAF 501; PAF 502; PAF 503; PAF 504; PAF 505; PAF 506; PAF 507; PAF 508
PAF	520	Public Management	Management process in government and public agencies, with emphasis on the executive leadership within the public sector.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	521	Managing Public Money	Overview of public financial management, including budget planning and execution; capital budgeting, debt management and administration; funds management and investment; and financial control.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): PAF 506
PAF	522	Adv Govt Financial Mgmt	Focuses on capital budgeting and infrastructure financing. Covers information required to finance a capital improvement plan, specifically for infrastructure items such as streets, parks, public utilities, airports, highways, bridges and tunnels, and other public works. Combining strategy as well as process, examines financial management from different perspectives.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): Public Administration MPA student
PAF	523	The City and County Manager	Provides an overview of the profession of local government manager including roles and responsibilities, the forms of government and administration, and review of management techniques and styles. Includes case study analysis of real-life manager issues, examination of current events about local government, and discussion of ethical issues.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		

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PAF	525	Public Entrepreneurship	Explores public and social entrepreneurship; students create solutions in cooperation with community partners to help address complex social challenges.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	529	Org Change and Development	Explores the nature and management of change and development as a tool to achieve organizational goals; effecting planned change.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	530	Mgmt of Urban Government	Examines the environment in which public administrators work and the major management challenges and functions for local government. Includes information on relationships between administrators and elected officials, and between officials and citizens. Focuses on effective and responsive service delivery by government, and the need for cooperation and coordination with other levels of government, including regional partners.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	531	Community Conflict Resolution	Interdisciplinary approach to understanding the dynamics of community conflict. Strategic considerations in policy design and advocacy; potential reaction to conflict. Relevant models and research findings generated by both case studies and comparative methods.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	534	Urban Services Infrastructure	Provides an overview of the services provided by local government with a focus on coordination, cooperation and overlap of services by cities, towns, counties, special districts, county, regional and state. Overview of how services are managed, evaluated, funded, including use of intergovernmental agreements, nonprofits and private businesses. Includes examination of leadership and management strategies, how to promote and establish cultural innovation, and to manage local priorities and expectations. Examines the context of regional issues and demands for cooperation, collaboration and coordination.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	540	Adv Policy Analysis	Covers data analytics and modeling methods for public policy analysis and management beyond those used for program evaluation. Topics include optimizing the allocation of resources; using machine learning to predict outcomes, target resources and detect outliers; and developing computational and social network models of policy and innovation diffusion and implementation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PAF 505 with C or better
PAF	541	Program Evaluation	Provides foundational and related methodological tools for the evaluation of public policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PAF 501 with C or better
PAF	544	Urban Policy	Understands major theoretical frameworks, methodological approaches and substantive issues emphasized in urban policy research. Hones skills in policy analysis.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545
PAF	546	Environmental Policy and Mgmt	Systems-level approach to environmental policy and management, emphasizing the societal, economic and political forces that influence the development and implementation of environmental policy. Topics include: defining environmental problems; environmental policy in congress; environmental policy in the courts; the Environmental Protection Agency; market principles in environmental policy; sustainable production, sustainable cities; global climate change; population and the developing world; energy policy; air pollution; water pollution; hazardous waste; ecosystem-based management and market-based solutions.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	547	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516

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PAF	548	Women/Politics/Public Policy	Explores how political philosophy, politics, and public policy affect and are affected by women.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	552	Integrated Emergency Mgmt	Theory and practice of comprehensive emergency management. Explores scope and function of Department of Homeland Security.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	555	Information Tech in Emerg Mgmt	Provides theory and application of computer-based programs in emergency management and the use of various emergency modeling programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	560	Community Resilience	Examines community resilience from a systems perspective, embracing governments, private, nonprofit and civic roles. Presents research, case studies, and strategies for policy planning and implementation. Provides an understanding of how community members respond to the need to prepare for, endure and recover from disasters and the ability to utilize multiple communication methods to help community members before, during and after these emergencies.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	561	Interoperability Emergency Mgrs	Enables understanding of the multiple technologies and skills utilized by emergency managers to enhance successful coordination and communication between all levels of emergency managers and responders during emergency mitigation, prevention, preparedness, response and recovery operations.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	562	Higher Education Policy	Broad overview of higher education policy. As used here, the term "policy" in higher education refers to government-produced policies (e.g., federal grants policy, state policies for university budgets) but also university-produced policies (e.g., strategic alliances, policies for faculty or student conduct). Despite the breadth of coverage, there is one theme permeating the course: universities as "public values-based institutions," including social impact, social engagement, outreach and economic impact.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PAF 562 or PAF 591 (Higher Education Policy)
PAF	565	Theories & Practices Democracy	Critically explores the wide range of ideas, issues, challenges, and promises related to democracy in theory and practice. Intended for all students interested in democratic leadership, public service, civic engagement, and participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	566	Part Govern & Civic Engagement	Examines classic and current theoretical debates on participatory governance and civic engagement, discusses theoretical and practical implications, and analyzes different models of participatory governance.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	570	Microecon of Public Policy II	Provides the policy tools to solve economic problems such as market concentrations, market failures and externalities, and asymmetric information. Increasingly, government interventions are moving away from a command-and-control-style of direct provision of goods and services and toward a large menu of indirect approaches implemented through a complex system of third-party actors. Government intervention in private markets now entails loans and loan guarantees, grants-in-aid, contracts, vouchers, social and economic regulation, and many other policy tools. Each of these instruments involves vastly different behavioral distortions, policy technologies, political considerations and technical sophistication. Analyzes the economics of four policy interventions: grants, tax expenditures, social regulation and vouchers. Provides an overview of each tool (including its key design features) and combines economic theory with background information on how public policies actually operate.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PAF 504 with C or better
PAF	571	Geographic Info Sys/Analysis	Provides foundational information related to application of GIS technology to meet various needs within governmental operations, administration, and public policy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	573	Applied Econometrics	Applied treatment of the most important modern econometric methods used to evaluate public policies. Help students become savvy consumers of econometric methodology and develops the methodological skills necessary for implementing quantitative evaluations of public policies. Accordingly, course stresses critical thinking and creativity.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PAF 502 with C or better
PAF	574	Diversity,Ethics,Public Change	Focuses on leading public change with a strong ethical foundation and commitment to engaging a diverse and inclusive workforce.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	579	Public Policy Capstone	Integrative, client-based project course.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		
PAF	582	E-Public Administration	Explores how new techniques and technologies for using, processing and managing information are changing how we interact, work and serve. As an example of this very concept, this course is offered online. During the semester, managers explore current trends, use a wide variety of information and communication tools, and have manager-created content consistent with new trends of online participation. By the end of the course, managers have experience with tools (including Wikis, Blogs, search engines, collaboration tools, reputation systems, social networks, virtual worlds); are familiar with current information issues (transparency, privacy, equal access, governance); and explore how they are relevant to a variety of contexts (local government, non-profits, public service).	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	585	Strat Planning Public Leaders	In an age of diminishing resources, the tools of strategic planning have become crucial for every public sector and non-profit manager. How can a public sector agency (or non-governmental organization) achieve its goals and advance its mission? How can it motivate its people given the absence of the sorts of incentives often found in the private sector? How can these organizations respond to a rapidly changing political, economic and social environment? These are among the questions that are addressed.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	586	Data Analytics for Public Good	Explores techniques used for data extraction, analysis and visualization. In particular, students engage with social media data, devise solutions to address data-poor scenarios, and explore the potential of sentiment analyses to elucidate opinion trends and predict future attitude shifts. Discusses data visualization techniques and engages students with Tableau software. Also explores the social, political and ethical considerations associated with building and managing data analytics programs in the public sphere. Explores issues-critical dilemmas when it comes to issues such as data privacy, data protection, predictive analytics, personalized service delivery and resource provision, algorithmic regulation, and large-scale data analytics for administrative efficiencies and resource management optimization, among others.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	587	Federal Budgeting & Tax Policy	Provides a broad understanding of federal budget and tax policy issues. The knowledge acquired in this class enable students to act as competent parties in the formulation of public policy within the federal budget and tax policy domains. Approximately one half of the class is devoted to federal budget processes and concepts including purposes, coverage, scoring, performance evaluation and proposed options for reform. The second half covers tax policy issues. Throughout the course, focuses on those budget and tax policy issues that are the current subject of political attention.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	588	Global Public Policy	The study of public policy has traditionally focused on the operations of government agencies within national borders. Increasingly, however, public officials at all levels of government must confront challenges and opportunities that exist across borders. Whether the issue is immigration, national security, trade and finance, or the environment, public managers must be aware of global pressures and, in many cases, respond to them. This course gives managers the analytical tools to understand how global issues are currently being managed and what they might do to make the most of global opportunities.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	589	Leadership in Public Orgs	Provides the foundation of theory and practice of administrative leadership. While students learn about all the major theoretical frameworks, focuses on an applied action research model that is useful in analyzing and developing oneself and others in organizational settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PAF	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
PAF	601	Advanced Public Policy Seminar	This advanced seminar in public policy has a single objective: to develop a critical thinking of theoretical perspectives developed to analyze several dimensions of public policy. Focuses on theories and perspectives across specific policy areas since the objective is to get used to analytical lenses, not a specific policy area. This objective is achieved by reading required books each week. This class requires the ability to critically analyze a body of literature as a prerequisite for advancing that literature. The general format of this course includes reviews of class material and discussion. Prior to each class, students are expected to read the required books listed in the syllabus. Students are responsible for contents included in the readings, even if it is not explicitly reviewed in class.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PAF	602	Adv Rsrch Desgn for Public Pol	The logic, design and conduct of applied social research for students interested in public management and policy. Traditional scientific explanatory research is a necessary prerequisite for any prescriptive research. The primary orientation of this course is to focus on development of social science explanations for public administrative phenomena and the development of research designs which permit testing of hypotheses derived from these explanations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	603	Adv Econ Public Admn & Policy	Theory of utility and demand, theory of the producer, organization, operation of product and factor markets, market equilibrium, regulation, risk and uncertainty, general equilibrium and welfare policy, market failure, public goods and taxation, and game theory.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): PAF 504 with C or better; doctoral major
PAF	604	Intellect Foundns Public Admn	Explores significant developments and themes in the theory of public administration, especially American public administration. Major foci in this seminar include the historical development of public administration as a body of thought and as a theory of politics; the enduring theme of public administration and democracy; various possible unifying themes, theories, and criteria; and prospects for future theory and research. Aimed at encouraging advanced students to refine their abilities to identify, analyze, interpret, critique, evaluate, and contribute to the literature and intellectual developments of this field of scholarship, as well as to place current and emerging trends in broader context. Builds on more basic courses in public administration and is intended in part to assist students in preparation for doctoral preliminary examinations in public administration. Assumes that students have a solid understanding of American government and bureaucracy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): admission to a doctoral program
PAF	605	Org. Theory and Behav. Seminar	Advanced survey of organization theory (OT) and organization behavior (OB) literatures for doctoral students. The seminar pursues multiple goals. It examines the intellectual foundations and historical progression of OT/OB research and explores the craft of conducting social science research related to OT/OB. Specifically analyzes how current literature in public management and administration applies organization theory for research. Develops a research-based understanding of main schools of organization theory so that students gain skills to enable them to engage OT/OB theories in their own research.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): admission to doctoral program

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PAF	609	Adv. Quant. Methods Sem.	Provides opportunity to learn the tools necessary for carrying out empirical work through hands-on data work and analysis. Students learn how to specify and estimate linear regression models and test hypotheses about model parameters under different statistical assumptions. Students become proficient in programming statistical routines.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Public Affairs	3		Prerequisite(s): admission to doctoral program
PAF	610	Adv Qualitative Methods	Explores a number of qualitative research approaches and methods, including ethnography, ethnomethodology, participant observation, interviews, focus groups, content analysis, discourse analysis, and some comparative/historical methods. Also exploreS the important theoretical and ethical issues that bear on these approaches.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Pre-requisites: PhD student
PAF	620	PA Prof Development Workshop	Prepares doctoral students to become productive and effective public administration scholars, teachers, and researchers.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	3		Pre-requisites: Doctoral PAF student
PAF	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
PAF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-15		
PAF	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Public Affairs	1		
PAF	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Watts College of Public Service & Community Solution	School of Public Affairs	1-15		
PAX	230	Intro to Peace Studies	Intensive, one-semester introductory course. Explores multidisciplinary approaches to the study of peace, conflict and human rights as well as the historical background of peace studies (trans)disciplinary orientation. Knowledge gained in peace studies can be applied toward education, policy, law, cross-cultural communication, community-based organizations, nongovernmental organizations and ethics.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G	
PAX	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
PBH	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	201	Economics for Health Majors	Introduces economics and demonstrates the relevance of economic principles to the study of health care delivery systems and public health. Combines elements of a traditional introductory economics curriculum with broad coverage of the history of economics, and specific application to current issues in health care delivery and public health policy. Prepares the student for further study of health economics.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 201 or PBH 201 OR Visiting University Student
PBH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	300	Biostatistics	Biostatistics and its use in health and health services research. Familiarizes students with statistical concepts and methods to analyze and interpret data and conceptually addresses statistical theory. Introduces Excel software to manage data and perform statistical tests..	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3	CS	Prerequisite(s): completion of General Studies MA requirement with C or better; minimum 30 hours; Credit is allowed for only HCD 300 or PBH 300

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PBH	310	Epidemiology in Public Health	Essential principles and practices of public health epidemiology. Increases an undergraduate student's ability to analyze problems and make decisions based on application of epidemiologic concepts and methods in a variety of settings. Students gain experience communicating epidemiologic findings in both written and oral formats. Includes applied hands-on exercises in analysis of epidemiologic data, case studies and critical review of epidemiologic methods used in scientific literature.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 300; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	355	Research Methods Public Health	Society incurs high opportunity costs when public health interventions which yield a high health return on investment are not implemented, or when resources are expended on interventions with low health returns. Public health practitioners should, therefore, incorporate the best scientific evidence in planning, implementing and evaluating public health policies and programs. Covers concepts and tools of public health research where the research objective is to provide evidence that informs and improves decisions regarding the allocation of public health resources. Covers basic components that inform evidence-based decision making, namely: accessing the best available scientific evidence; developing research questions, collecting and analyzing qualitative and quantitative data; using data and information systems methodically; and adhering to standards of ethical research.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 310; not open to Exercise and Wellness or Health Education and Health Promotion majors
PBH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PBH	402	Health Economics	Emphasizes clinical relevance and application of searching and interpreting the literature, using case studies as examples. Applies these skills through in-class activities and through written report at the conclusion of the course. These tools ultimately assist the student with critical thinking and application of concepts to clinical scenarios. Class is held in a computer lab to facilitate class engagement.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ECN 211, ECN 212, HCD 201, or PBH 201; minimum 45 hours; Credit is allowed for only HCD 402 or PBH 402
PBH	410	Public Mental Health	Explores public mental health research and practice. Considers social determinants, social theory, population assessment methods, ecological models, risk, resiliency, and behavioral health systems of treatment and prevention.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
PBH	422	Health Disparities	Racial and ethnic health disparities in the United States. Explores disparities in healthcare seen at the provider and system level and their effects on health in the community. Also considers the historical context of racial and ethnic health disparities and the demographic and conceptual issues surrounding health disparities research. Reflects on the effects of behavior, socioeconomic status and group-specific disparities on community health status.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only HCD 422 or PBH 422 OR Visiting University Student
PBH	435	Environ & Occupational Health	Environmental health designed to address public health issues.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 56 hours OR Visiting University Student
PBH	455	Pub Health Program Evaluation	Federal, state and local policies shape the nature of the public health programs implemented in communities. Public health professionals are often responsible for evaluating, at multiple levels, the programs that result from such policies. Provides public health students with the analytical tools necessary to manage the implementation and evaluation of public health programs. Program evaluation serves many important functions. It supplies information to managers who are charged with implementing public health programs and to policymakers who face decisions about which programs to fund, scale back, expand, modify or eliminate. Evaluation is an accountability tool: when a public health agency decides to finance a program, they have a right to ask what their funds bought. Evaluation is also a vehicle for improving public health programs. By identifying what works and what does not--and how new programs fare relative to existing practice--policymakers and managers can improve program designs.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 355
PBH	482	Capstone I	First course in capstone sequence wherein a student identifies a project to complete in Capstone II and conducts background research. Projects are related to broad topics explored during prior coursework in the student's program.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1-3		Prerequisite(s): minimum 45 hours

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PBH	483	Capstone II	Independent study in which a student, under the supervision of capstone coordinator, conducts research that is expected to lead to a specific project such as a thesis, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript. Capstone II projects can be done in conjunction with a health care organization or health agency.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PBH 482 (or HCD 482)
PBH	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
PBH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
PHI	101	Introduction to Philosophy	Explores issues that philosophers have traditionally considered, including morality, reality, and knowledge.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	103	Principles of Sound Reasoning	Fallacies, validity, and soundness of arguments. May include syllogistic, elementary symbolic, inductive logic, and scientific method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better OR Visiting University Student
PHI	105	Intro to Ethics	Philosophical examination of such questions as, How should we live? Is morality a social invention? Does anything matter?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	107	Intro Philosophy of Sex & Love	Examines philosophical views of the nature of sex and love, their relation to gender and sexual ethics. Focuses on the historical development of these concepts and contemporary moral and political debates over issues such as same-sex marriage, polyamory, pornography and free speech, objectification, cybersex, and consent to sex.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Credit is allowed for only PHI 107 or PHI 394 (Philosophy of Sex and Love)
PHI	120	Intro to Medical and Bioethics	Philosophical examination of moral problems that arise in medicine and biology, e.g., end-of-life, reproduction, and patient's rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman student; Maximum 25 hours
PHI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	300	Philosophical Argument/Exposit	Develops techniques of philosophical argument and exposition. Frequent written exercises. Course content may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): Philosophy major; ENG 102 with C or better; minimum 25 hours OR Visiting University Student
PHI	303	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Pre-requisites: ENG 102, 105 or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions), PHI 303 or REL 300
PHI	304	Existentialism	Covers such topics as absurdity, authenticity, the meaning of life and death, responsibility, and subjectivity. May include readings in phenomenology.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	306	Applied Ethics	Philosophical discussion of contemporary moral and political issues, such as abortion, euthanasia, animal rights, affirmative action, and sexual rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	307	Philosophy of Law	Nature and source of law and its relation to morality. Legal rights, legal enforcement of morals, civil disobedience, liability and responsibility, punishment, judicial reasoning, justice, property, and differences between theories of natural and positive law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student

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PHI	310	Environmental Ethics	Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only BIO 324 or PHI 310 OR Visiting University Student
PHI	311	Philosophy and Literature	In-depth study of selected literary and philosophic texts. Addresses philosophical problems such as the nature of moral goodness and human relations; the purpose of life; or the relations among beauty, truth and justice. Also addresses whether literary aspects of philosophical texts such as myth, image, metaphor or rhetorical devices contribute to meaning or promote ethical insight as well as interdisciplinary tensions and bridges between rhetoric and philosophy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	313	Probability, Evidence&Decision	Philosophical topics in epistemology and practical reasoning; probability and its use in representing and reasoning about belief, evidence, and rational choice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MAT 117 or 142 or higher; minimum 30 hours; Credit is allowed for only HPS 313 or PHI 313
PHI	314	Philosophy of Science	Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Credit is allowed for only HPS 314 or PHI 314 OR Visiting University Student
PHI	318	Philosophy of Religion	Classical arguments for the existence of God. Argument from evil against the existence of God. Justification of religious belief.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
PHI	319	Philosophy, Computing & AI	Philosophical problems surrounding artificial intelligence (AI). Thinking as computation and AI; the ethics, epistemology and metaphysics of computing.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	CS	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	320	Bioethics	Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 312 or IAS 340 or PHI 320 OR Visiting University Student
PHI	322	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
PHI	324	Existential Ethics	Ethical aspects of theistic and atheistic accounts of existentialist philosophy. Freedom and responsibility and their significance in human experiences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	
PHI	325	Philosophy of Social Science	Philosophical problems surrounding the aims, structure, and methods of the social sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU or SB	
PHI	326	Philosophy of Happiness	Examines ancient and contemporary philosophical models of happiness and consideration of criteria for living a life of human flourishing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	328	History of Ancient Philosophy	History of Western philosophy from its beginnings through the Hellenistic period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	329	History of Modern Philosophy	History of Western philosophy from the Renaissance through Kant.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	330	Theory of Knowledge	Nature, sources, and limits of human knowledge. Topics may include truth, a priori knowledge, empirical knowledge, perception, induction, and skepticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	331	Philosophy of Language	Problems pertaining to the nature of language, including meaning, reference, truth, definition, analyticity, translatability, synonymy, and contributions of contemporary linguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours
PHI	332	Metaphysics	Problems pertaining to the nature of reality. Topics may include nature of person, minds, substance, universals, space, time, causation, and modality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	333	Symbolic Logic	Studies symbolic techniques to represent knowledge, deductive arguments, refutation by counter-example, and model-theoretic representation. Covers propositional and first-order predicate logic and provides a deeper understanding of theories about the world and of reasoning in life generally. Students gain a valuable tool for any field or discipline in which rigorous thinking is necessary such as science, medicine, business and the legal profession.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 243 or MAT 300 or PHI 103 with C or better; minimum 25 hours OR Visiting University Student
PHI	334	Philosophy of Mind	Nature of consciousness. Common sense view of mind, behaviorism, materialism, dualism, functionalism, self-knowledge, and knowledge of other minds.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	335	History of Ethics	Major works of moral philosophy, both ancient and modern, such as those by Plato, Aristotle, Hobbes, Hume, Kant, and Mill.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student

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PHI	336	Social/Political Philosophy	Alternative principles and methods relevant to problems of human association and conflict; discusses justice and power, freedom and equality, and autonomy and order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	337	Ethical Theory	Theories in normative ethics about the nature of what is right and wrong, good and bad, virtuous and vicious. May include issues in metaethics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	338	Metaethics	Concerns questions about the nature of value, morality, and normativity in general, such as "Is morality objective, subjective, or relative?"	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 (or ENG 105 or 108) with C or better; minimum 25 hours. Credit is allowed for only PHI 338 or PHI 420 (Metaethics)
PHI	339	Philosophy of Art	Central problems in philosophy of art, e.g., the nature of a work of art, modern and traditional theories of art, aesthetic perception and experience, and objectivity and relativity in art criticism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours
PHI	347	Phil Theories of Constitut Law	In-depth study of the philosophical theories surrounding constitutional rights and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	360	Business & Professional Ethics	Examines moral theories applied to cases of corporate responsibility, property rights, environment, fairness, profit, employee rights, and responsibilities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	370	Sports Ethics	Studies moral issues in sports, including but not limited to the nature and application of sportsmanship, the prohibition of performance enhancing drugs, ethical issues in the economics of sports, the role of violence, and fandom.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 25 hours OR Visiting University Student
PHI	390	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 390, JST 314, PHI 390 or REL 314
PHI	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 30 hours; Credit is allowed for only HST 357, PHI 391 or REL 391
PHI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	401	Rationalism	Examines classical philosophical rationalism, as in Descartes, Spinoza, Malebranche, or Leibniz. Contemporary rationalist thought may also be examined.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours
PHI	402	Empiricism	Examines representatives of either classical or contemporary philosophical empiricism, e.g., Bacon, Hobbes, Locke, Butler, Berkeley, Reid, Hume, Mill, Carnap, and Ayer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy student; minimum 56 hours
PHI	403	Contemp Analytic Philosophy	Aims and methods of such 20th-century philosophers as Frege, Moore, Russell, Wittgenstein, Carnap, Ayer, Wisdom, Ryle, Austin, Strawson, Quine, and Sellars, with application to metaphysics and epistemology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): Philosophy BA major or Philosophy (Morality, Politics and Law) BA major; minimum 56 hours
PHI	405	Moral Psychology	Advanced study of key, contemporary authors and issues in moral psychology as a subfield of philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	406	Moral Dilemmas	Philosophical analysis of moral dilemmas arising in professional and public settings. Ethical decision making in business, educational, human service, and scientific communities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only FOR 406 or IAS 406 or PHI 406 OR Visiting University Student
PHI	407	Environmnt Philosophy & Policy	Ethical concepts and theories applied to environmental issues: biotic community, biodiversity, degradation, ecofeminism, ecology, economics, population, property rights, and wilderness. Not open to students with credit in PHI 310.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101 or 105 with C or better; Credit is allowed for only IAS 407 or PHI 407
PHI	408	Feminist Ethics	Philosophical exploration of the theoretical and practical aspects of ethical issues affecting women from diverse feminist viewpoints.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
PHI	409	Eco-Community Ethics	Traces human interaction with the Earth from hunters and gatherers to the present day, examining groups who have lived within ecological constraints and limits.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Credit is allowed for only IAS 409 or PHI 409

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
PHI	411	Continental Philosophy	Contemporary European thought emerges out of a crisis of the Enlightenment that unfolds throughout the 19th and 20th centuries. Kant's critique of the theoretical, practical, aesthetic and religious foundations articulates this crisis in Western philosophy, society and culture. Explores Continental thinkers and schools of thought in light of Kant's understanding of this crisis. Figures might be Nietzsche, Marx, Freud, Kierkegaard, Husserl, Heidegger, Benjamin, Adorno, Marcuse, Sartre, de Beauvoir, Irigaray, Kristeva, Spivak, Habermas, Lévinas, Marion, Derrida and others. Schools of thought considered may include existentialism, phenomenology, hermeneutics, critical theory, poststructuralism, deconstruction, feminist theory, critical race theory, postcolonial theory, and comparative philosophy. Continental philosophy dovetails with other fields like communication, cultural studies, law, political science, religious studies, literature and various social sciences.	N	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 30 hours. Credit is allowed for only PHI 411 or PHI 494 (Continental Philosophy & Religion) or PHI 494 (Studies in Continental Philosophy)
PHI	412	Philosophy & Lit Criticism	Explores dynamic tensions between philosophical and literary critical approaches to texts. Aims to identify distinct ways that literature and critical practices "philosophize" about truth, moral dilemmas or existential struggles. Probes the challenges that each form of inquiry, philosophical and critical, poses for the other. Seeks to enhance understanding of the philosophical underpinnings of key literary works. May address poetry, novels and other media.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; minimum 30 hours. Credit is allowed for only PHI 412 or PHI 494 (Philosophy and Literature) or ENG 401 (Philosophy and Literary Criticism) OR Visiting University Student
PHI	413	Advanced Symbolic Logic	Properties of formal systems axiomatizing propositional and 1st-order predicate logic. May also include modal logic, number theory, and limits of logicism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy student; minimum 56 hours; Credit is allowed for only PHI 413 or PHI 556
PHI	415	Philosophy & Film	Introduces philosophical themes via the medium of film. Students read classical and contemporary literature in philosophy, view films that portray philosophical concepts, and demonstrate their understanding through writing assignments and class presentations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only PHI 415 or PHI 294 (Philosophy and Film)
PHI	417	Philosophy of Censorship	Investigates philosophical concepts underlying instances of censorship, both in historical and in contemporary settings.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 30 hours; Credit is allowed for only IAS 417 or PHI 417 or PHI 494 (Censorship: Philoso/Relig/Soc Perspectives) or REL 494 (Censorship: Philoso/Relig/Soc Perspectives)
PHI	420	Topics in Philosophy	Advanced seminar featuring in-depth examination of some philosophical topic or area. Topics vary widely, and draw from major subfields of philosophy such as metaphysics, epistemology and ethics. Many seminars emphasize the social relevance of philosophy. Format may include peer discussion, class presentations, and/or term papers. Intended for students with prior background in relevant subfield of philosophy.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): undergraduate Philosophy major; minimum 56 hours OR Visiting University Student
PHI	421	Philosophical Topics	Focuses on important issues within the discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
PHI	422	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
PHI	439	Philosophy: Love & Sex	Advanced introduction to historical and contemporary philosophical writings and sociological case studies on the philosophy of sex and love.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only PHI 439 or PHI 494 (Philosophy of Love and Sex)
PHI	448	Justice and Reparations	Advanced study of the moral basis of reparations and reparative justice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy undergraduate major; minimum 56 hours; Credit is allowed for only PHI 420 (Jus/Reparations) or PHI 448 or PHI 527

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PHI	452	Philosophy of Bio & Medicine	Examines fundamental topics in the philosophy of biology and their implications for medicine. Examples include biological mechanisms and evidence-based medicine, species concepts and race, reductionism and the nature of individuality, and theories of function and health. Uses these topics throughout the semester to address two overarching questions about whether biology is fundamentally different from physics and whether medicine can be reduced to applications of biology.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum 25 hours; Credit is allowed for only BIO 452 or HPS 452 or PHI 452 or BIO/HPS/PHI 394 (Philosophy of Biology and Medicine Introduction) or BIO/HPS/PHI 494 (Philosophy of Biology and Medicine) OR Visiting University Student
PHI	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
PHI	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PHI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
PHI	520	Topics in Applied Philosophy	Selected topics in applied philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	521	Bioethics	Addresses current controversies and major topics in bioethics and biosciences.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Found-Bioethics) or PHI 521
PHI	522	Ethics of Sustainability	Explores the normative framework of sustainability.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Topics in the Ethics of Sustainability) or PHI 522
PHI	524	Disaster Ethics	Investigates moral and political questions connected to disasters and emergencies such as obligations of aid workers, responsibilities for preparedness and rebuilding, and related social justice questions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Ethics and Disaster) or PHI 524
PHI	525	Rational Choice	Recent philosophical work on rational decision making.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Rational Choice) or PHI 525
PHI	526	Evol and Strategic Interaction	Recent work on the philosophical significance of evolutionary models of social interactions and social structures.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	529	Feminist Philosophy	Examines contemporary feminist work in some of the subfields of philosophy, such as ethics, political philosophy, epistemology.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Feminist Philosophy) or PHI 529
PHI	530	Moral Psychology	Central issues and texts in moral psychology including the impact of psychological research on philosophical theorizing.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 405 or PHI 420 (Moral Psychology) or PHI 530
PHI	532	Experimental Philosophy	Examines experimental work taken to directly bear on important philosophical theories.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Experimental Philosophy) or PHI 532
PHI	540	Topics in Value Theory	Selected topics in value theory.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	541	Normative Ethics	Explores one or more leading normative ethical theories that inform the contemporary discussions in ethics, applied ethics, issues of justice and human rights, and public policy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Normative Ethics) or PHI 541
PHI	545	Studies in Philosophy of Law	Selected topics in the philosophy of law.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	546	Political Philosophy Studies	Selected topics or figures in political philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	555	Topics in Formal Methods	Selected topics in formal methods.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	556	Advanced Symbolic Logic	Advanced topics in logic relevant to philosophical theorizing such as modal, deontic and temporal logic.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	560	Topics in Epistemology	Selected topics in epistemology.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student

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PHI	562	Perception	Recent work on the nature and content of perception.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD major; Credit is allowed for only PHI 420 (Perception) or PHI 562
PHI	565	Probabilism	Recent work on rational belief, evidence and belief change.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	566	Studies in Phil of Science	Selected topics in philosophy of science.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	570	Topics in Metaphysics	Selected topics in metaphysics	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	571	Studies in Phil of Mind	Selected recent philosophical work in philosophy of mind such as the nature of sensation and perception, theories of consciousness, and the unity of the self	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	572	Studies in Phil of Language	Selected recent philosophical work in philosophy of mind language as theories of meanings, direct reference and vagueness.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): MA or PhD Philosophy major. Credit is allowed for only PHI 420 (Philosophy of Language) or PHI 572
PHI	576	Realism	Recent work on realism and anti-realism, starting with Michael Dummett, and including philosophers such as Hilary Putnam, Donald Davidson, John McDowell and Kit Fine. Global realism and anti-realism and more specific realisms/antirealisms about the past, the mind, theoretical entities, mathematics and ethics.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	581	Studies in Ancient Greek Phil	Selected topics in ancient philosophy from 585 BC to 529 AD.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student; Credit is allowed for only PHI 420 (Studies in Ancient Greek Philosophy) or PHI 581
PHI	582	Studies in Modern Philosophy	Selected topics and significant figures in the modern period.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	587	Topics in the History of Phil	Selected topics in the history of philosophy.	Y	SEM	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Philosophy MA or PhD student
PHI	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisites: Masters or Doctoral Philosophy student.
PHI	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
PHI	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
PHI	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PHI	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		

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PHI	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHI	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
PHI	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
PHS	110	Fundamentals Physical Science	One-semester survey of the principles of physics and chemistry. Presumes understanding of elementary algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHS	115	Science of Musical Instruments	Science class set in a musical context where students learn about music, musical instruments, and also about the underlying scientific and mathematical principles.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only PHS 115 or PHS 194 (Science of Musical Instruments)
PHS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	208	Patterns in Nature	Examines topics from optics to analytical techniques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Credit is allowed for only MSE 208 or PHS 208
PHS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHS	505	Energy and the Environment	Current problems in energy resources, production, consumption, and conservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	530	Methods of Physics Teaching I	Inquiry approach to high school physics teaching.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	531	Methods of Physics Teaching II	Extension of modeling techniques introduced in PHY 580.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	534	Teaching Phys Sci I, II, III	Design of curriculum and conduct of instruction for physical science courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	540	Integrated Physics & Chemistry	Collaborative inquiry methods for teaching and coordinating physics and chemistry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CHM 540 or PHS 540
PHS	542	Integrated Mathematics/Physics	Mathematical models and modeling as an integrating theme for secondary mathematics and physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	550	Physics and Astronomy	Astronomy curricula and projects for secondary school, with emphasis on the role of physics in astronomy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PHS	556	Astrophysics	Structure and evolution of stars, galaxies, and the universe. For secondary school teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	560	Matter and Light	Interactions of light with matter. Lasers and spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 560 or PHS 560
PHS	570	Spacetime Physics	Special and general theories of relativity with implications for space and time travel.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHS	581	Structure of Matter/Properties	Models of matter and its properties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CHM 581 or PHS 581
PHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		

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PHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	101	Introduction to Physics	Emphasizes applications of physics to life in the modern world. Presumes understanding of elementary algebra.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	
PHY	105	Basic Physics	One-semester survey of the principles of physics. Primarily for students who intend to take PHY 121, 131 but have not taken high school physics.	N	REC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	111	General Physics	Noncalculus treatment of the principles of physics for nonphysics majors. Students whose curricula require a lab course must also register for PHY 113. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 170 or higher with C or better or ALEKS score of 61 or higher or Corequisite(s): MAT 210 or higher OR Visiting University Student
PHY	112	General Physics	Continuation of PHY 111. Students whose curricula require a lab course must also register for PHY 114. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): PHY 111 with C or better OR Visiting University Student
PHY	113	General Physics Laboratory	Elementary experiments in physics. Requires outside preparation for experiments and report writing. May be taken concurrently with, or subsequent to PHY 111. Both PHY 111 and PHY 113 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 111 with C or better if completed OR Visiting University Student
PHY	114	General Physics Laboratory	See PHY 113. May be taken concurrently with, or subsequent to, PHY 112. Both PHY 112 and PHY 114 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 112 with C or better if completed OR Visiting University Student
PHY	118	Explorations in Sci Teaching	Examines the field of physical science education via in-class meetings and classroom settings. Discusses the theory, pedagogy and practice of teaching physical science. Reviews various curricula available for the teaching of physical science with a focus on state and national standards. Students work with course instructor(s) to design three lessons that work toward some of the objectives of each cooperating teachers' class. Students are aided in developing materials, guided in planning to teach the lesson, and given time to prepare and practice the lesson.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Pre-requisite: Mathematics or Physics or other science major
PHY	121	Univ Physics I: Mechanics	Kinematics; Newton's laws; work, energy, momentum, conservation laws; dynamics of particles, solids, and fluids. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	122	University Physics Lab I	Lab accompanying PHY 121. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 121 with C or better if completed OR Visiting University Student
PHY	131	Univ Physics II: Electrc/Magnet	Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
PHY	132	University Physics Lab II	Lab accompanying PHY 131. Both PHY 131 and PHY 132 must be taken to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	1	SQ	Pre- or corequisite(s): PHY 131 with C or better if completed OR Visiting University Student
PHY	150	Physics I	Introductory physics for majors. Kinematics, Newton's Laws, basic forces, energy, momentum.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed OR Visiting University Student
PHY	151	Physics II	Continuation of PHY 150. Electromagnetic fields; Ampere's and Faraday's Laws; Maxwell's equations; basic circuit elements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 266 or 271 with C or better; PHY 150 or PHY 121 and PHY 122 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed OR Visiting University Student
PHY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): freshman standing; maximum 25 hours OR Visiting University Student
PHY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		

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PHY	201	Math Methods Physics I	Differential equations, linear equations, vectors, matrices, Fourier series, and numerical methods.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	CS	Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	202	Programming for Physicists	Introduces programming in the Python programming language for physics majors.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	1		Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 with a C or better or PHY 131 and PHY 132 with C or better OR Visiting University Student
PHY	241	University Physics III	Thermodynamics, kinetic theory, physical and wave optics, relativity, photons, matter waves, atomic physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 OR Visiting University Student
PHY	252	Physics III	Thermodynamics, kinetic theory, physical optics and diffraction, modern physics, special relativity, quantum mechanics and Bohr atom.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	4	SQ	Prerequisite(s): MAT 267 or 272 with C or better; PHY 151 or PHY 131 and 132 with C or better OR Visiting University Student
PHY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	302	Mathematical Mthds Physics II	Vector calculus, complex variables, partial differential equations, special functions, numerical methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better OR Visiting University Student
PHY	310	Classical Parts/Field/Matter I	Particle kinematics, mechanics, conservation laws of single- and multi-particle systems, potentials, oscillations, Lagrangian dynamics, central force problems, dynamics in non-inertial reference frames, rigid body motion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s) with C or better: (PHY 201; PHY 252) or (PHY 201; PHY 202; PHY 241); Corequisite(s): PHY 302 OR Visiting University Student
PHY	311	Classical Part/Field/Matter II	Electrostatic and gravitational fields, Poisson and Laplace equations, dielectric materials, magnetic fields and materials, magnetic induction, Faraday's Law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 310 with C or better OR Visiting University Student
PHY	312	Mechanics and Electromagnetism	Covers two major topics in physics, both dealing with forms of energy and momentum and how they are transmitted in space. Covers mechanics and dynamics, describing how bodies with mass move under various types of forces. Also covers electromagnetism, which describes how electric charges and magnets, and their motions, generate fields of force. Also describes how time-varying electric and magnetic fields are associated with electromagnetic waves, which include light.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better; PHY 252 with C or better OR Visiting University Student
PHY	314	Quantum Physics I	Photons, models of the atom, wave properties of matter, introduction to wave mechanics, 1-D systems in quantum mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 201 with C or better; PHY 252 with C or better, or both PHY 202 and 241 with C or better OR Visiting University Student
PHY	315	Quantum Physics II	General principles of quantum mechanics, 3-D problems, approximation methods, spin, relativity, introduction to many-particle systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 314 with C or better OR Visiting University Student
PHY	321	Vector Mechanics and Vibration	Vector-based formulation of Newtonian mechanics of particles and rigid bodies, including oscillatory systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	331	Prin Modern Electromagnetism	Studies the unified description of electromagnetic phenomena provided by Maxwell's equations in differential and integral form.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	333	Electronic Circuits/Measuremnt	Basic principles of electronic circuit analysis and measurement techniques using modern instrumentation and computer-aided analysis of data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better OR MAT 267 or 272 with C or better; PHY 151 with C or better OR Visiting University Student
PHY	334	Advanced Laboratory I	Selected experiments from contemporary physics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report form writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 267 or 272 with C or better; PHY 151 (or PHY 131 and 132) with C or better; Pre- or corequisite(s): PHY 314, 361, CHM 345, or EEE 434 with C or better if completed OR Visiting University Student
PHY	361	Introductory Modern Physics	Special relativity and introductory quantum theory with applications drawn from atomic, nuclear, and solid-state physics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 131 or 151 with C or better; MAT 272 or 267 with C or better OR Visiting University Student

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PHY	371	Driving Forces in Biology	What are the stable states of biomolecules? How do molecules interact? What forces drive molecules to bond and associate, to adsorb, to permeate through membranes, to undergo chemical reactions, to undergo conformational changes? Why are some changes gradual, as in the weakening of a ligand interaction with temperature, and others sudden (cooperative) such as protein folding or the insolubility of oil in water? Addresses these questions by statistical thermodynamics, a collection of principles and models that when combined with thermodynamics, aim to explain molecular forces and flows.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346
PHY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	412	Classical Part/Field/Matter III	Electromagnetic fields of moving charges, Maxwell's equations, harmonic phenomena, oscillations, waves, electromagnetic radiation, covariant electromagnetism, introduction to general relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better OR Visiting University Student
PHY	416	Quantum Physics III	Introduces the quantum theory of atoms, molecules, solids and nuclei, Dirac's equation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 315 with C or better OR Visiting University Student
PHY	432	Comp Methods in Physics	Provides a practical introduction to using the computer as a tool to solve problems in physics. Students learn how to work in a scientific computing environment (including software engineering "best practices"), to analyze a physical problem, select appropriate numerical algorithms to solve the problem, and to implement them. Covers computer graphics and object-oriented design. Students work in teams, critically evaluate their approaches and results, and present them in a professional manner to their peers.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): MAT 267 or 272 with C or better; Pre- or corequisite(s): PHY 241 or 252 with C or better if completed; Credit is allowed only for PHY 432 or PHY 494 (Computational Methods in Physics) OR Visiting University Student
PHY	441	Statistical/Thermal Physics	Statistical and experimental basis of heat, temperature, and entropy. Mechanical and statistical basis of the laws of thermodynamics. Applies macroscopic thermodynamics. Phase equilibrium.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better OR Visiting University Student
PHY	444	Fundamentals of Nanoscience	For senior science majors and beginning graduate students teaching the cross-disciplinary subject of nanoscience. There is a strong emphasis on basics, so the course starts with a fairly rigorous introduction to quantum mechanics, statistical mechanics and chemical kinetics, though enough material is provided to allow nonphysics majors to come up to speed in these areas. This is followed by a survey of experimental techniques in nanoscience: microscopy, optical spectroscopy and scanning probe methods, and nanofabrication methods including "top down" and self assembly. Finally we survey applications: electrons in nanostructures, molecular electronics, nanomaterials and bio-nanoscience.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): junior or senior standing; Credit is allowed for only PHY 444 or PHY 494 (Intro to Nanoscience)
PHY	452	Physical Optics	Principles of reflection, refraction, diffraction. Additional topics from contemporary optics may include Fourier transform spectroscopy, linear systems theory, holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 302 with C or better; PHY 311 with C or better OR Visiting University Student
PHY	456	Laser Optics	Theoretical and experimental aspects of applied optics including basic concepts of lasers, properties of optical beams, resonators and interferometry. Course consists of two parts: preparatory labs and applied projects. Preparatory labs provide theoretical and technical background for understanding of general features of electromagnetic wave propagation and technical features of optical lasers including high-power laser systems. Applied projects give students the opportunity to use laser optical systems to solve real-world problems.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	4		Prerequisite(s): PHY 361; Credit is allowed for only ABS 494 (Advanced Laser Laboratory), ABS 494 (Laser Optics) or PHY 456
PHY	460	Numerical Methods in Physics	Advanced numerical methods with an emphasis on electromagnetism, quantum mechanics and materials science with computer labs on a multiprocessor cluster.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): PHY 315
PHY	462	Particle and Nuclear Physics	Nuclear properties, models, decays and reactions; fundamental forces, field theories, symmetry principles; hadrons, quarks, and leptons; the Standard Model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better
PHY	465	Advanced Laboratory II	Continuation of PHY 334. Students may substitute a short laboratory research project for one of the elective experiments of the course, in consultation with a faculty sponsor and the course instructor.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 334 with C or better OR Visiting University Student
PHY	472	Advanced Biophysics Lab	Offers selected experiments from contemporary biophysics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report writing. Emphasizes the importance of good notebook keeping.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): CHM 346 OR Visiting University Student

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PHY	473	From Molecules to Cells	Offers selected subjects from biological physics covering the length scales from biomolecules to cells. Builds on knowledge acquired from thermodynamics and statistical mechanics to formulate basic principles behind the working of life systems. Free energy, entropic forces, chemical potentials and electrostatic interactions rule the "nanometer soup" of a living cell. Proton gradients across cell membranes are behind all the energy consumed by life. Random walks, dissipative dynamics, and hydrodynamic fluxes rule time-dependent phenomena. Covers systems including biomolecules, membranes, cells and nerves.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 371 with C or better; Pre- corequisite(s): PHY 472 with C or better if completed
PHY	480	Methods of Teaching Physics	Evaluates various approaches to the teaching of high school physics. Preparation of demonstrations and experiments. Organization of a lab. Designed for secondary school physics teachers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	481	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 311 with C or better; PHY 315 with C or better; Credit is allowed for only MSE 526 or NAN 511 or PHY 481 or PHY 511 OR Visiting University Student
PHY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		Prerequisite(s): minimum 45 hours
PHY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6		Prerequisite(s): Barrett Honors student
PHY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
PHY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	495	Project Research	Supervised project in physics or astrophysics.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PHY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-7		Prerequisite(s): minimum 45 hours
PHY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-3		Prerequisite(s): minimum 45 hours
PHY	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	511	Materials Physics I	Fundamentals of materials physics: crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Degree- or nondegree-seeking graduate: Credit is allowed for only MSE 526, NAN 511, PHY 511
PHY	512	Materials Physics II	Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): PHY 511; Credit is allowed for only MSE 525 or MSE 527 or MSE 598 (Fund of Elec, Optical, & Mag Matls & Device Apps) or NAN 512 or PHY 482 or PHY 512
PHY	521	Classical&Continuum Mechanics	Variational principles, Lagrange's and Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, introduction to chaos and nonlinear dynamics, fundamentals of elasticity theory and fluid mechanics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	523	General Relativity	Special and general theories of relativity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	531	Electrodynamics	Special theory of relativity, covariant formulation of electromagnetic interactions, Maxwell's equations, electrostatics and magnetostatics, dielectric media, inhomogeneous wave equations, Lienard-Wiechert potentials, interactions of charged particles and electromagnetic waves, scattering and diffraction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	541	Statistical Physics	Postulates of statistical mechanics, equilibrium ensembles, Bose and Fermi statistics, density matrix, modern theory of phase transitions, fluctuations, and linear response theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	542	Topics in Biophysics	Overview of modern biology, length scales: emphasizes molecular and cellular biology. Nonequilibrium systems: compare and contrast stochastic processes in biological and physical systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only NAN 542 or PHY 542

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PHY	544	Introduction to Nanoscience	Survey of nanoscience: quantum/ statistical mechanics/kinetics; measurement and fabrication methods; applications to materials, nano-electronics, molecular electronics and nano-biology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only CHM 544, NAN 544, PHY 444 or PHY 544
PHY	546	Surfaces and Thin Films	Thermodynamics and kinetics of surface structures and thin film processes. Ultra-high vacuum techniques for examining surfaces. Case studies of physics, chemistry and nanoscience applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 546, NAN 546 or PHY 546
PHY	552	Electron Microscopy I	Kinematical and dynamical electron diffraction and microscopy. Defect structure and composition using STEM imaging, x-ray and electron-energy-loss spectroscopy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 552, NAN 552, SEM 552, or PHY 552
PHY	553	Electron Microscopy Lab I	Lab support for PHY 552.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Corequisite(s): MSE 552 or PHY 552; Credit is allowed for only MSE 553 or PHY 553
PHY	554	Electron Microscopy II	Determination of structure and composition of materials using high-resolution imaging, convergent beam diffraction, and electron holography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE or PHY 554
PHY	555	Electron Microscopy Lab II	Lab support for PHY 554.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 555 or PHY 555
PHY	571	Quantum Physics	Review modern physics, chemistry, math. Differential equation, operator, matrix formulations. Free particle, bound state problems. Examples from physics, chemistry and nanoscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Credit is allowed for only MSE 571, NAN 571 or PHY 571
PHY	576	Quantum Theory	Operator methods in quantum mechanics, time-independent perturbation theory, variational methods, angular momentum and group representation theory, identical particles; quantum dynamics, including time-ordered operators, time-dependent perturbation theory, and Fermi's golden rule.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	577	Intro to Quant Field Theory	Explains necessity of generalizing quantum mechanics to a field theory viewpoint. Studies properties of scalar, spinor, and gauge fields; incorporates interactions; and learns to compute amplitudes, cross sections, and decay rates using formalism of Feynman diagrams.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PHY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	581	Quantum Theory of Solids I	Band structure models: pseudopotentials, density functional theory; optical and magnetic response; elementary excitations; transport theory, electron-photon interactions and superconductivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	582	Quantum Theory of Solids II	Continuation of PHY 581: broken symmetry; phase transitions; disorder, topological defects; nano-structures topics; soft condensed matter and current research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Physics	3		
PHY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-4		
PHY	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		

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PHY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Physics	1-12		
PHY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PHY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Physics	1		
PHY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	Department of Physics	1-15		
PIT	501	Prin PublicInterest Technology	Fundamentals of public interest technology. Identifies and analyzes stakeholders, value chains, societal dimensions, and legal and policy issues in the context of emerging technologies such as smart cities, the internet of things, robotics and autonomous systems, and artificial intelligence. Covers the importance of socio-technical change, responsible innovation, public values, accountability, oversight, corporate responsibility and other key concepts when considering technologies working for the public interest. Students work on critical issues such as data ownership, consent, governance, privacy, security, accessibility and the digital divide.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	502	Co-Designing the Future	Explores how new technologies for using, processing and managing information are changing how we interact and work. This practical learning and mentoring program helps students design and implement solutions to public interest problems using civic technology. Explores current trends, uses a wide variety of information and communication tools, and develops content to help develop a project from idea to implementation. Takes advantage of the latest innovations in open and participatory problem solving, including the application of open data, crowdsourcing, expert networks and systems. Unlike traditional accelerators, focuses only on public interest projects that work with real-world institutions and partners such as nongovernment organizations.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	503	Technology Impact Assessments	Trains students to conduct a technology assessment—a systematic effort to anticipate and understand the impact of a technology. Serves as an "early warning" for policymakers, forecasting technological change and its consequences, to facilitate the prudent procurement of technologies, to plan R&D more effectively, to create the basis for evidence-based regulatory approaches, and to achieve other purpose that serve the public interest. Covers the uses of technology assessment and practices various methods. Each student carries out an abbreviated technology assessment on a topic of his or her choice and communicates it to their colleagues.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	504	Public Engagement Strategies	Covers the concepts, tools, institutions and strategies to appropriately and effectively engage with a variety of stakeholders, including scientific and technical experts, policymakers and advocates for responsible research and innovation, and general publics. Students learn how to elevate the societal discourse about emerging and contemporary issues in science and technology through inclusive, informed, equitable, sustainable and democratic engagement with the public. Explores real-world case studies and provides students the opportunity to design and develop a public engagement strategy for stakeholders.	N	SEM	N	OPT	College of Global Futures	School for the Future of Innovation in Society	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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PIT	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	College of Global Futures	School for the Future of Innovation in Society	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Global Futures	School for the Future of Innovation in Society	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PIT	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School for the Future of Innovation in Society	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PLB	300	Plant Diversity and Evolution	An examination of the major groups of land plants, emphasizing evolutionary history, comparative data, and phylogenetic methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4	L or SG	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit allowed for only BIO 303 or ENV 300 or PLB 300 OR Visiting University Student
PLB	302	Plants and Civilization	Plants and plant products used by people throughout the world. Cultivation, processing, and uses in modern life (beverages, fibers, foods, medicinals, and perfumes).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3	L	Prerequisite(s) with C or better: BIO 181; BIO 182; ENG 101, 105, or 107 OR BIO 281; BIO 282; ENG 101, 105, or 107; Credit is allowed for only BIO 304 or ENV 302 or PLB 302 OR Visiting University Student
PLB	308	Plant Physiology	Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; CHM 116; Credit is allowed for only BIO 308 or PLB 308
PLB	310	The Flora of Arizona	Overview of Arizona's flora and plant communities; emphasizes identification, classification, and natural history of the state's native vascular species.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	4		Prerequisite(s) with C or better: BIO 181 (or BIO 188) and BIO 182 (or BIO 187 or both PLB 200 and 201) OR BIO 281 and 282; Credit is allowed for only BIO 313 or PLB 310
PLB	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
PLB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		Prerequisite(s): minimum 45 hours
PLB	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-3		
PLB	502	Perspectives in Plant Biology	Provides an overview of current topics and introduces some of the practical tools used in plant biology, ecology and conservation (e.g., field and lab methods, urban planning, federal land management, biodiversity bioinformatics, phylogenetics, and GIS).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PLB	558	Molecular Mech Photosynthesis	Structure and function of photosynthetic complexes; mechanism of energy conversion in plants, bacteria, and model systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	3		Credit is allowed for only BCH 568 or PLB 558
PLB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-4		
PLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Life Sciences	1-12		
PLB	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLB	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Life Sciences	1		
PLB	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Life Sciences	1-15		
PLC	101	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	102	Elementary Polish	Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	201	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		
PLC	202	Intermediate Polish	Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Pre-requisites: PLC 201 with D
PLC	311	Advanced Polish I	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 202 with C or better; Credit is allowed for only PLC 311 or PLC 394 (Polish Comp and Conversation) OR Visiting University Student
PLC	312	Advanced Polish II	Develops writing ability and oral expression.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): PLC 311 with C or better
PLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		

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POP	100	Intro to Population Health	Introduces population health in the United States. Familiarizes students with the broad discipline of population health and how it influences community and individual health status. Discusses the role of various agencies in population health, methods of measurement and evaluation, major population health issues in the United States, and factors that contribute to individual and community health. Solidifies concepts through the use of in-class discussion, group work and individual analysis.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only HCD 101 or POP 100 (or PBH 100) OR Visiting University Student
POP	333	Systems Thinking in Pop Health	Covers systems science and its application to population health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
POP	444	Pop Health Field Experience	Provides opportunity to gain experience working in community and population health settings. Course meetings provide guidance during the field experience and an opportunity for students to share their projects.	N	LEC	Y	YGB	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 450; HCD 101 or POP 100 OR Visiting University Student
POP	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	605	Pop Health Systems Science	Systems science theory and methodology and its application to population health. Systems science is an interdisciplinary field of research that seeks to understand the general characteristics, dynamics and behaviors of systems. While the theory and methodology presented is applicable to a wide range of academic disciplines (e.g., physical systems, social systems, economic systems), this course focuses on population health systems.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	610	Social Epidemiology	Social epidemiology considers how society's human activities and social interactions yield differential exposures that result in health disparities, including the identification of new disease-specific risk factors (e.g., social determinants of health) and how well-known exposures (e.g., cigarette smoking, lead paint, health insurance) emerge and are maintained by the social system. Considers dynamic social relationships and human activities that ultimately locate industries that pollute one neighborhood instead of another, make fresh foods available to some and not others, and permit some to enjoy resources such that they can purchase healthy environments and excellent health care.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	615	Organizational Behavior	Covers important questions and perspectives relevant to understanding organizational behavior and theory (OBT) across the population health arena, including health care and public health sectors. Covers active paradigms in OBT, particularly perspectives important for understanding how health organizations and systems adapt, evolve and respond. Students analyze strengths and weaknesses of different theories and examine how they can be used as a foundation for research on health care and public health organizations and implications for health management and policy. Examines empirical research to clarify how important organizational constructs have been operationalized and to highlight the methodology-related challenges of studying organizations in health care/public health.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	691	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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POP	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
POP	799	Dissertation	Supervised research focused on preparation of a dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
POR	101	Elementary Portuguese I	Introduces the Portuguese language. Encourages meaningful and contextualized use of the language through reading, writing, listening and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Students who have credit for POR 102 or 201 or 202 or 313 or 314 or 320 or 321 may not enroll in POR 101 OR Visiting University Student
POR	102	Elementary Portuguese II	Continues to develop students' abilities at the elementary level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 101; Students who have credit for POR 201 or POR 202 or POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 102 OR Visiting University Student
POR	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	201	Intermediate Portuguese I	Develops students' skills at the intermediate level of Portuguese language and culture through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 102 with C or better; Students who have credit for POR 202 or 313 or 314 or 320 or 321 may not enroll in POR 201 OR Visiting University Student
POR	202	Intermediate Portuguese II	Continues to develop students' skills at the intermediate level. Encourages meaningful and contextualized use of the language through reading, listening, writing and speaking tasks based on authentic materials with a focus on Brazil.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): POR 201 with C or better; Students who have credit for POR 313 or POR 314 or POR 320 or POR 321 may not enroll in POR 202 OR Visiting University Student
POR	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	313	Portuguese Conv & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on speaking and listening, and a focus on Brazilian culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student
POR	314	Portuguese Comp & Culture	Develops students' linguistic skills in Portuguese, bridging the intermediate and advanced levels. Encourages meaningful and contextualized use of the Portuguese language with an emphasis on reading and writing. Each class focuses on topics of personal and general interest, with a focus on Brazil.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): POR 202 or 321 OR Visiting University Student

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POR	320	Portuguese Spanish Spkrs I	Intensive introduction to the Portuguese language for Spanish speakers. Designed for students with an active competence in Spanish who wish to learn the essential elements of the Portuguese grammar at an accelerated pace, as well as acquire listening, speaking, reading and writing skills. Based upon the theory of "intercomprehension," which implies the speaker's ability to understand the speech of another speaker who communicates in a dialect of the same language or a related language. Due to the linguistic similarities with Spanish, students master the four basic skills of listening, speaking, reading and writing of in Portuguese at a faster pace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 202, 204, 210, 313, 314, 315, 316, or 412 with C or better; Students who have credit for POR 101 or POR 102 or POR 201 or POR 202 or POR 313 or POR 314 or POR 321 may not enroll in POR 320 OR Visiting University Student
POR	321	Portuguese Spanish Spkrs II	Intensive intermediate-level Portuguese language class designed for Spanish-speakers. Further develops the students' communication skills in Portuguese. Makes use of the many common elements between Spanish and Portuguese (particularly vocabulary and grammar) to achieve an accelerated learning of linguistic, sociolinguistic and pragmatic competences required for fluency. The class is mostly conducted in Portuguese; do not be afraid of making mistakes while speaking Portuguese because this is a natural part of the learning process.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): POR 102 or 320 with C or better; Students who have credit for POR 201 or POR 202 or POR 313 or POR 314 may not enroll in POR 321 OR Visiting University Student
POR	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	460	Brazilian Society Thru Music	Surveys Brazilian popular music in the 20th and 21st centuries, focusing on one main question: What images of Brazil have been imagined by Brazilian popular music in various socio-political contexts? Working with various genres, discusses how issues pertaining to race, social class, and citizenship have contributed to shape the Brazilian popular music scene and its representations of Brazil both at home and abroad. Taught in English. However, students who have completed POR 202 or POR 321 have the option of completing the assignments in Portuguese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only POR 460 or POR 494 (Contemporary Brazilian Popular Music) or SLC 460 or SLC 494 (Contemporary Brazilian Popular Music) OR Visiting University Student
POR	472	Luso-Brazilian Civilization	Lectures, readings, and discussion of important aspects of Luso-Brazilian civilization. Topics from music, art, folklore, literature, history, and politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): POR 313 with C or better; Credit is allowed for only POR 472 or POR 598 (Luso-Brazilian Civilization)
POR	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
POR	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
POR	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POR	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
POR	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
POR	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
POS	110	American Government & Politics	Major institutions of modern government and processes of individual and group political activity, with emphasis on the American experience. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	112	Foundations of Democracy	Introduces an interdisciplinary study of democracy with special attention to its historical development as a form of government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	Credit is allowed for only HST 112 or POS 112 or HST 194 (Foundations of Democracy)
POS	150	Comparative Government	Political institutions and processes in selected foreign countries, including origins, strengths, and weaknesses of contemporary political systems and political development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	

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POS	160	Global Politics	Nature of contemporary world politics through the study of both general theoretical topics and specific geographical areas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 360 or POS 362 OR Visiting University Student
POS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		Pre-requisites: Freshman status; Maximum 25 hours
POS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): maximum 25 hours OR Visiting University Student
POS	210	Political Ideologies	Leading political ideas and belief systems, e.g., Marxism, liberalism, conservatism, theories of democracy, and alternative futures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	211	Arizona Constitution/Governmt	Constitution and government of the State of Arizona. Meets the Arizona constitution requirement for teacher certification. May not be counted for the major or a teaching major or minor in Political Science.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	2		Credit is allowed for only POS 211 or POS 216 or POS 417
POS	216	State and Local Government	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	230	Curr Issues/Natl Politics	Major issues facing national governments in the domestic field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
POS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL240 or SGS 240 OR Visiting University Student
POS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
POS	247	Intro to Latin Amer Politics	General introduction to the politics and socioeconomic structures of Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	260	Curr Issues in Intl Politics	Analyzes major current problems in world politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
POS	270	American Legal System	Concepts, institutions, classifications, and functions of law. Role of the courts and impact of judicial decision making on social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	300	Contemp Global Controversies	Explores key controversies in global politics including security, economic stability, poverty, gender, race, and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	301	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
POS	305	Politics and Film	Examines portrayal of political events, ethnic groups, and sociopolitical situations in film, a major medium addressing questions of human values. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	310	American National Government	Powers, functions, and agents of American political institutions. Meets the federal government requirement for teacher certification.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 110 or POS 310 OR Visiting University Student
POS	313	The Congress	Lawmaking process in the U.S. Congress.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Credit is allowed for only POL 313 or POS 313 OR Visiting University Student
POS	314	The American Presidency	Office, role, and power of the American presidency in the American political system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	315	The Supreme Court	Role of the Supreme Court in American society and politics; examines decision-making process and impact of decisions; restraint versus activism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	316	AmericanPolitical Institutions	Explores current issues involving American political institutions including electoral systems, legislative bodies, executive agencies, executive leadership, judicial bodies, political parties, interest groups, social movements, the media, and their interactions.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 316 or POS 394 (American Political Institutions) OR Visiting University Student

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POS	317	Hist Postwar U.S. Conservatism	Traces the origins of U.S. conservatism as it developed in the work of U.S. and European thinkers, intellectuals and authors after WWII.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 317 or HST 294 (American Conservatism) or POS 317 OR Visiting University Student
POS	325	Public Policy Development	Examines one or more aspects of public policy development including agenda setting and policy formulation, implementation, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	331	Public Opinion	Formation, expression, and influence of individual and organized opinion on political institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	332	American Political Parties	Development of the American party system. Party organization and functions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	333	Interest Groups	Examines how minority, corporate, labor, farm, consumer, environmental, health, education and public interest groups, and single-issue movements influence government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)
POS	336	Voters in America	Voting behavior and the attitudes, perceptions, and activities of the citizenry in the political process.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	337	Political Psychology	Political psychology is an interdisciplinary field that applies theories from the study of human psychology to the study of politics. Focuses on how psychological processes influence political thoughts and actions. Thus, the initial portion of the course discusses the structure of political attitudes and opinions and some of the primary ways that politicians and the media can influence public opinion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 337 or POS 394 (Political Psychology) OR Visiting University Student
POS	338	Fake News:Identify & Refute	Critically analyzes the implications of fake news for our democracy and democratic way of life. Examines why we should care about whether or not citizens consume fake news and how it affects our individual lives and public policy. Looks at a variety of topics, rooted in social science research drawing from psychology and political science. Also examines students and how they process fake news, the origins of fake news, elected officials' reliance on false information, fake news and statistics, fact-checking, and fake news and political bias. Additionally, students analyze elected officials' communications, including U.S. Presidents' State of the Union addresses.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 338 or POS 394 (Fake News) or POS 394 (Fake News: How to Identify and Refute it)
POS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339 OR Visiting University Student
POS	340	History Political Philosophy I	Western political philosophers and their theories to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	341	History of Political Phil II	Western political philosophers and their theories from the 17th to the 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H	
POS	342	Political Theory	Surveys ancient, modern, and contemporary political theorists and ideas in European and American contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU or SB	
POS	346	Problems of Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	348	Do You Want to Build a Nation	Requires students to critically assess their assumptions about nation-states through a series of debates and simulation games. Through in-class, interactive games, students answer: What are the sources of legitimacy and defining elements of statehood? How do those defining elements, such as democratic structures, support or challenge certain functions of the nation-state? How does a nation's purported moral basis affect its foreign policy decisions and negotiations with other nations?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum junior standing or minimum 45 hours OR Visiting University Student

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POS	350	Comparative Politics	Theoretical approaches and political institutions, such as parties, pressure groups, legislatures, and executives, from a cross-national perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	351	Democratization	Examines the consolidation of democracies in postauthoritarian and postcommunist settings (e.g., Latin America, Eastern Europe, Asia).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	352	European Democracies	Addresses questions such as, How has the relationship between European citizens and the democratic process changed in the post-WWII period? How do domestic political institutions influence this process? Explores different approaches to some of the most important questions facing the study of comparative and European politics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 25 hours OR Visiting University Student
POS	353	Compar Politics of Middle East	Examines the historical, social, and economic context of contemporary Middle East politics; explores political dynamics of selected Middle Eastern regimes; and offers a comparative examination of key political trends and themes.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing or minimum 45 hours; Credit is allowed for only POS 353 or POS 360 (Politics of the Middle East) OR Visiting University Student
POS	354	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
POS	356	European Union	History and workings of EU member states, including single market, Euro, legal system, ethnonationalism, immigration, expansion, trade wars, and defense.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	357	South Asia Politics	Political culture and systems of South Asia examined through study of political writings, novels, and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	358	Southeast Asia	Political background, governmental institutions, political dynamics, and developmental problems of Southeast Asian nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	359	African Politics and Society	Comparative analysis of socioeconomic forces, political processes, government institutions, and political novels in Sub-Saharan Africa.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	360	World Politics	Theory and practice of statecraft as applied to selected issues, regions, or eras. Emphasis may vary with instructor, but cannot be repeated for credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 160 or POS 360 OR Visiting University Student
POS	361	American Foreign Policy	United States in world affairs; foreign policy since World War I. Techniques in formulating American foreign policies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	362	World Politics Theory	Theoretical examination of one or more aspects of international politics, e.g., foreign policy, negotiations, alliances, crises, wars, and international systems.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only POL 160 or POS 160 or POS 362
POS	364	Natl Security/Intell/Terrorism	Theoretical and empirical assessment of U.S. national security policy in the post-cold war era.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	365	Terrorism & Insurgency	Insurgency, civil war, revolution and terrorism are traditionally thought of as domestic events or "intrastate" conflicts between one violent domestic political group and the state. However, recent conflicts in Afghanistan, Libya and Syria, as well as the 9/11 attacks on the U.S. demonstrate that insurgencies often spill across borders and draw in actors far removed from the original conflict site. These conflicts also demonstrate that insurgencies and terror campaigns necessitate global policy responses. The international character of insurgency, therefore, requires students of political violence to consider a wide array of both international and domestic factors in order to better understand the origins, dynamics and resolution of modern insurgencies and terror campaigns.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 365 or POS 394 (Terrorism and Insurgency)
POS	367	World Pol & Global Inequality	Examines the topic of global inequality and the numerous challenges that arise from it, including perspectives and theories pertaining to third world development, the historical background to the political and economic relations between the wealthy countries of the world and the poorer countries, and policies and strategies designed to promote development and alleviate poverty. Studies some contemporary issues that are related to global inequality including ethics and third-world development, sweatshop labor, corporate responsibility, and the tension between globalization and the movement of people across sovereign borders.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 25 hours OR Visiting University Student

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POS	368	Ethics and Human Rights	Explores issues of ethics, morality, and human rights in the global community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	370	Law and Society	Analyzes debates among social scientists and legal theorists concerning the relationship between law and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
POS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
POS	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only POS 378, REL 378 or REL 394 (Religion, War and Peace)
POS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
POS	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
POS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): DAT 401, POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
POS	410	Governing American Cities	Reviews modern urban problems, their sources, and potential solutions, including structural and policy alternatives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	414	Political History & Leadership	Research seminar in political values and leadership. Combines lecture, readings and guest lectures by leaders in business, public affairs and the media. Culminates in a substantial written research effort.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 55 hours; Credit is allowed for only HST 414 or POS 414
POS	417	Arizona Politics	Surveys the operations, problems, and policies of state and local governments in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 25 hours; Credit is allowed for only POS 211 or POS 216 or POS 417 OR Visiting University Student
POS	426	Elements of Public Policy	Each section may cover one of the following topics: consumer protection, natural resources, criminal justice, environmental protection, science and technology, or theories of public policy. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours
POS	427	Social Welfare & Health Policy	Examines the political conflicts and debates that underlie social welfare and health policy, and the provisions of major welfare-state programs in the U.S., with comparisons to other developed democracies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for POS 427 or POS 394 (Social Welfare & Health Policy)
POS	431	Campaigns and Elections	Examines campaigns from a multitude of perspectives including the politician, reporter, campaign strategist, and voter.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	434	Media and Politics	Studies mass media and politics in the United States, e.g., media and elections, media and government.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	
POS	435	Women and Politics	Focuses on the uniqueness of women in modern political systems and political thought. Emphasis may vary with instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	
POS	436	Gender/Sexuality/Nation-States	Issues and problems related to the interface of gender, sexualities, nationalisms, and states in various world contexts.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
POS	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437 OR Visiting University Student
POS	438	Latino Politics	Examines contemporary political issues in the diverse Latino community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours

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POS	439	Minority Grp Politics America	Role of minority groups in American politics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & C	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	442	American Political Thought	Political theories and movements from the colonial period to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	443	Contemporary Political Theory	Major problems and theories in contemporary political thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU	
POS	446	Democracy	Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	HU	
POS	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
POS	452	China	Background of the Communist revolution, political processes, and developmental problems in China from a comparative perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	453	Latin America	Political institutions, process, and developmental problems of South American states examined through comparative analysis, novels and poetry.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 25 hours
POS	454	Mexico	Politics, economy, institutions, and cultures in Mexico in historical and contemporary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	456	Latin American Cities	Urban studies of Latin American world cities, e.g., Mexico City, Santiago, emphasizing integration with U.S. cities, including Los Angeles, Phoenix.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	464	Border Cities:Action Rsrch/Glo	Examines the effects of globalization on U.S.-Mexico border cities and towns with particular emphasis on Mexican border cities.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
POS	465	International Organization/Law	History, practical political significance, and future of international institutions, transnational regimes, and international law.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	466	Migration Environ&Gbl Security	Human mobility within and across borders is on the rise with rapid globalization and infrastructural investments. National concerns over human security and resource allocation have prompted discussion over the drivers and consequences of emerging migration patterns related to environmental stressors. The objective is to gain perspective on the environmental refugee debate and learn how governments, donors, and international agencies are currently tackling the problem. Students are introduced to cross-disciplinary concepts of migration and environmental stressors (e.g., natural disasters, climate change, water scarcity, soil erosion) in order to understand and discuss recent scientific work, and investigate the challenges in documenting this phenomenon and its consequences on global security.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 466 or SGS 466 or GCU/POS/PUP/SGS/SOS 494 (Migration, Environment, & Global Security) or GCU/GSC/PUP 598 (Migration, Environment, & Global Security) OR Visiting University Student
POS	467	International Security	Examines issues affecting the international security of states and peoples, e.g., military, economic, technological, environmental, and demographic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours
POS	468	Comparative Asian Foreign Pols	Foreign policies of the Asian states, emphasizing their security relations and movements toward regionalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	470	Law and the Political Order	Investigates concepts of justice, political rights, adjudication and legislation, legal ordering, constitutional law, law as an instrument of change.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 470 or CMN 598 (Law and the Political Order) or JHR 598 (Law and the Political Order) or MAS 598 (Law and the Political Order)
POS	471	Constitutional Law I	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; jurisdiction and organization of the federal courts; judicial review; separation of powers; federalism; the commerce clause; national taxing and spending power; state police power.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	472	Constitutional Law II	Development of the U.S. Constitution as reflected in decisions of the Supreme Court; due process; equal protection of laws; individual rights; civil liberties.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student

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POS	475	Morality and Politics	Should morality play a role in politics? Machiavelli gives us one sort of answer, urging politicians to be dishonest, deceptive and even cruel. Kant disagrees, arguing instead that politicians should adhere to their personal morality over political calculations. Explores this question in two ways. First, looks more at the disagreement between great thinkers in the Western political tradition. Second, investigates contemporary political actors who bring moral concerns to the fore, including dirty politicians and extremist citizens (for example, radical animal rights activists, militant environmentalists or global poverty zealots). Seminar course that incorporates in-class discussion and writing, options-based grading and creative assignments.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only POS 394 (Morality and Politics) or POS 475
POS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
POS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	485	Political Economy	Problems, policies, and possibilities of various political-economic systems and the interrelationship of capitalism, socialism, and democracy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
POS	486	Internat Political Economy	Contending approaches to historical and contemporary issues of international political economy, including global welfare, equality, ecology, and peace.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
POS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
POS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
POS	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
POS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
POS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
POS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	503	Empirical Political Inquiry	Research methods and techniques of the discipline, emphasizing empirical foundations and analytic methods employed in subfields.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Political Science student
POS	530	American Politics	Examines major debates in the study of American political processes and institutions. Covers parties, media, elections, public opinion, interest groups, and the three branches of government.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	540	Ancient Political Theory	Surveys the historical and philosophical developments in political thinking from the ancient Greeks up to the Renaissance. The world studied predominantly is one of profound political conflict and change. Moves from the Greek cities to the edge of modern political developments. The movement encompasses the political transformation from city-states to empires to the establishment of an overarching Christian world order that balances secular and sacred power, only to be challenged if not foundationally shaken by Machiavelli and realism.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisites: Graduate Political Science major

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POS	541	Modern Political Theory	Surveys the development of modern political thought from Machiavelli-through Hobbes, Locke, Hume, Rousseau, Burke, Kant, Montesquieu, Constant, Bentham, Mill, and Hegel—to Marx. Focuses on the primary writings of these thinkers as well as reading secondary literature. In addition to focusing on the distinctive contribution and relevance of individual thinkers, further explores certain recurring themes among which are the following: Are freedom and equality foes or friends? What allegiance do we owe the state and why? Do we have rights against the state? What is a just state? Is private property essential to individual liberty? Do laws enhance or threaten liberty? Is self-interest an adequate basis for political allegiance? Why should we pursue the common good, if at all? Are self-interest and the common good reconcilable?	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD major; Credit is allowed for only POS 541 or 591 (Modern Political Thought)
POS	550	Comparative Politics	Surveys major approaches across topical areas such as revolutions, authoritarianism, policy processes, interest groups, and electoral politics. Focus varies with instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	552	Women and Politics	Serve as an introduction to the comparative study of women and politics. Not a course on feminist theory; instead focuses on questions such as: Does the descriptive representation of women guarantee their substantive representation? Which electoral rules favor the election of women? Do the negative effects of gender quotas outweigh their impressive ability to increase the number of women in office? Have the news media helped or harmed female candidacies? Once in power do women govern differently than men? Focuses on the obstacles that women face in obtaining positions of power.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 552 or 598 (Women and Politics)
POS	560	International Relations	Surveys major theoretical approaches and debates in international relations.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	565	Games, Strategy and Politics	Provides an overview of game theory for graduate students in political science. Covers classical game theory, extensive form games, games of incomplete information and non-cooperative games. Applies game theory to international relations, political economy, comparative politics and American politics. Gives special attention to bargaining games, voting in elections and deterrence. Basic mathematical knowledge is helpful; reviews basic algebra and calculus in the class as needed.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 565 or POS 598 (Games, Strategy and Politics)
POS	570	Politics of Public Policy	Examines the political dimensions of public policymaking. Emphasizes major theoretical explanations of the policy process—particularly elements such as agenda setting, implementation, and policy change—rather than on the substance of particular policies. Focuses primarily on U.S. domestic policy, with some comparative reference to other developed democracies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only POS 570 or 598 (Politics of Public Policy)
POS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	586	Intl Political Economy	International political economy (IPE) focuses on the relationship between the pursuit of wealth and power during the development and evolution of the global political economy. Assigned readings take an analytical approach to the subject, drawing on methods and theories developed in political science, economics, history and sociology. In addition to an overview of the methods and theories employed in the study of IPE, also examines a variety of current empirical research programs in the subfield. This seminar should enable students to read the academic literature, conduct independent research in the subfield, and understand contemporary problems in the global political economy.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
POS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		

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POS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	596	Professionalization Workshop	Serves as a professionalization workshop and is intended for new political science doctoral students. However, graduate students at all levels in the program are welcome to take the course. Introduces the professional side of political science. Surveys topics such as attending conferences, applying for grants, publishing an article or a book, and going on the job market. Jointly builds a professional resource bank on our course page that serves as a resource for all students.	N	SEM	N	OP2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 596 or POS 598 (Teaching and Writing Worksh)
POS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
POS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	601	Advanced Experimental Research	Introduces experimental and quasi-experimental research designs in political research, including lab techniques and topics in the analysis of variance.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	603	Polimetrics I	Introduces theory and practice of linear regression analysis. Provides skills to read, understand, and evaluate professional literature using regression analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	604	Polimetrics II	Applies quantitative techniques to research topics producing publishable papers through exposure to time-series, logit and probit, and simultaneous equations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	652	Religion and Politics	Analyzes the complicated and often conflictual relationship among major religious faiths, religious activists, and the state in the 20th and 21st centuries. Cover topics: secularization theory and its problems; religion as a cultural or attitudinal variable in politics; the rationality of religion, organized religions and their activists; the bases for conflicts between religion and the state; religion's role in conflict; the terms of reconciliation and collaboration; the conditions under which religion is politicized and becomes the basis of a political movement or party; and the means by which organized religions and/or their adherents seek to maintain an influence in 20th- and 21st-century politics and society. Does not provide a survey of religion and politics for all major world religions, or other religions.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Pre-requisite: MA or PhD student; Credit is allowed for only POS 652 or 598 (Religion and Politics)
POS	663	Ethnic Conflict	Acquaints students with a variety of theoretical and empirical approaches to the study of conflict between nations and states, which is often called ethnic conflict. Aims to understand the nature of ethnic identity, the reasons it persists and changes over time, and the conditions under which it can be mobilized for political ends. Discussions are theoretical and comparative. Draws on empirical results and cases to support, qualify and refute propositions, and draw inferences. Prior social science course work preferred.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only POS 598 (Ethnic Conflict) or POS 598 (Deadly Ethnic Conflict) or POS 663
POS	664	War/Peace/Conflict Processes	Systematic analysis of the causes of war, the preconditions for peace, and approaches to the resolution of conflict.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
POS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		

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POS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
POS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
POS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		
POS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-15		
PPE	215	Teaching Team Sports	Practical application of biomechanical, physiological, psychological, and learning principles in the analysis of skill acquisition and performance.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	220	Teaching Lifetime Activity	Participating in and teaching sequenced activities K-12.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		
PPE	230	Teaching Group Exercise	Introduces instructional strategies appropriate for the teaching of group exercise classes in secondary school settings.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 230 or 294 (Teaching Group Exercise)
PPE	235	Tchng Strength Cond for Health	Fundamental principles, strategies and assessments of strength training and conditioning methodologies that are necessary to effectively operate in a school-based setting. Most secondary schools offer some form of strength training in a physical education setting, either as a stand-alone course or as part of a traditional class structure. Therefore, new physical education teachers should be well informed on the scientific rationale for the use of strength and conditioning programs in schools, and be able to design and implement these programs safely. Provides prospective physical education teachers with the knowledge and skills needed to safely and effectively operate in a school-based strength training setting, whether it is for physical education or sport performance.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Credit is allowed for only PPE 235 or PPE 294 (Teaching Strength Conditioning for Health)
PPE	240	Physical Activity	Recognizing individual interests and abilities, the program provides courses covering a wide variety of physical activities. We make an effort to address contemporary trends and student, faculty and staff interests. Offerings may include but are not limited to classes in the areas of: aquatics, artistic and social dance, fitness development, martial arts, mind/body, outdoor recreation, resistance training, sports and games.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		
PPE	300	Intro to PE, Fitness and Sport	Introduces the fields of physical education, exercise science, sports medicine, and related fields. Discusses the history and trends of physical education as well as key concepts, programs, problems, and issues related to teaching physical education. Teaches essential background knowledge, better preparing for career success. The online (blackboard) component of this class provides practical experiential learning and assesses knowledge and comprehension of the key concepts presented in the course.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Minimum 60 hours; Junior or senior standing; Credit is allowed for only PPE 300 or 394 (Intro to Physical Education, Fitness & Sport) OR Visiting University Student
PPE	310	Healthy Learning Communities	Prepares educators with the knowledge, skills and dispositions to support learners' overall health. Focuses on educator's roles in creating healthy and active learning communities and addresses a variety of educational settings and learner ages.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
PPE	315	Ped Movement Sci for PPE	Provides a general overview of the functional anatomy of the human body as it relates to movement and the biomechanical principles underlying the execution of a given motor skill. Also examines the influence of physical growth and maturation on the development of motor skills.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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PPE	320	Exercise Physiology Concepts	Provides an introductory-level understanding of how the body responds prior to, during, and after participation in dynamic and static exercise. Examines the physiological basis of human movement, with emphasis on reviewing what exercise physiologists have learned about the diversity of physical activity, specifically in children. Although many physiological responses to activity are predictable, the magnitude and pattern of responses are unique depending on the age, gender, and previous experience of the individual. Also examines the role an active lifestyle plays in the overall health and well-being of school-aged children and adolescents.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
PPE	335	Move & Phys of Child in PE	Provides an introductory-level understanding of mechanical principles underlying human movement, the developmental patterns reflected in human movement birth through childhood and adolescence, basic principles of motor learning and the physiological basis of human movement. Covers how these principles directly affect the development of physical activity opportunities in in community-based sport and recreation settings with a specific eye toward the role an active lifestyle plays in the overall health and well-being of children and youth between the ages of 6 and 18.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): junior or senior standing
PPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	396	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	397	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
PPE	450	Phys Educ for the Elem School	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 450 or PPE 550
PPE	455	Phys Educ in the Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 455 or PPE 555
PPE	460	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only PPE 460 or PPE 560
PPE	465	Teaching Phys Act Concepts	Focuses on teaching physical activity concepts in physical education settings and other settings such as fitness clubs or community health organizations. Analyzes and critiques state physical activity standards and national guidelines for promoting physical activity.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only PPE 465 or PPE 565 OR Visiting University Student
PPE	477	Student Teaching: PE EED	Student teaching in elementary physical education setting grades 1-8: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	478	Student Teaching: PE SED	Student teaching in middle/secondary physical education setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): admission to the Professional Program
PPE	480	Prof Seminar for Physical Educ	Methods of instruction, organization, and presentation of appropriate content in elementary and secondary physical education.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
PPE	485	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; Credit is allowed for only PPE 485 or PPE 586
PPE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
PPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
PPE	535	Intro to Sport Ed	Introduces a grade 5-12 school physical education curriculum that focuses on providing more complete and more authentic sport experiences.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (Degree or non-degree) students; Credit is allowed for only PPE 494, 596 (Sport Education) or PPE 535

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PPE	550	Physical Educ-Elementary Sch	Scope and values of physical education in elementary schools. Methods, materials, and practices in teaching for primary through upper grades.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Students who have credit for PPE 450 may not enroll in PPE 550
PPE	551	Innovative Programming in EPE	Provides an understanding of current trends and issues in elementary school physical education curriculum and how to implement the curriculum in a school environment. Students become familiar with a variety of best practices in curriculum and instruction specific to elementary children in physical activity settings. Emphasizes incorporating methods of effective teaching and activity organization, enhancing student learning, and effectively managing student behavior and the learning environment.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) students; Credit is allowed for only PPE 451 or 551
PPE	555	Physical Educ-Secondary Sch	Current trends and theories such as elective programs, coed classes, legal issues, contract teaching, curriculum, and administration.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and non-degree); Credit is allowed for only PPE 455 or PPE 555
PPE	560	Adapted & Inclusive Phys Educ	Teaching individuals with disabilities physical skills and activities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate students (Degree and Non-degree); Credit is allowed for only PPE 460 or PPE 560
PPE	565	Teaching Phys Act Concepts	Teaching physical activity concepts in PE settings. Analyzes and critiques state and national physical education standards.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisites: Graduate (degree or non-degree) student; Credit is allowed for only PPE 465 or 565
PPE	567	Clinical Experience: PE EED	Applies course content in elementary physical education classrooms grades 1-8; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	568	Clinical Experience: PE SED	Applies course content in secondary physical education classrooms grades 6-12; emphasizes observation, pupil management, planning and delivery of instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-2		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	586	Physical Activity Leadership	Explores the development of school leadership skills for physical educators specific to promoting physical activity throughout the school day for all K-12 students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PPE 485 or PPE 586
PPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	501	Fundamentals Political Psych	Core course focuses on the interdisciplinary study of political psychology and teaches the tools necessary to evaluate the application of political psychology to political marketing, campaigns and policy advocacy. Covers both the theoretical foundations underlying research in political psychology as well as foundational and contemporary applications. Examines topics including personality, emotions and genetic bases of behavior as well as approaches to the design and interpretation of experimental research.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	502	Cognition/Emotions Political	Focuses on key concepts in cognitive psychology and the scientific study of mental processes. Covers how people acquire, store, transform, use information. Topics may include perception, attention, language, memory, reasoning, problem solving, decision making and attributions. Also covers the relation between emotions and cognition.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	503	Prejudices and Politics	Interrogates various theoretical approaches to intergroup conflict; why stereotypes and prejudice exist; the different forms these attitudes take (e.g., ethnocentrism, racial attitudes); and their implications for politics. Also introduces social identity theory and demonstrates how this theory can elucidate group processes. Moreover, covers theoretical arguments for and concrete examples of how prejudice can be reduced and tolerance increased.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	504	Attitudes and Persuasion	Focuses on the individual and contextual factors responsible for changes in beliefs, attitudes and behaviors. First covers the concept of attitudes and their measurement before examining in depth various theoretical approaches that explain how people come to change their attitudes. Also covers meta-cognitive as well as implicit factors in persuasion. Ends with a more applied look at persuasion, focusing on how persuasive messages can be crafted.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	505	Biopolitics	Builds a foundational understanding of biological, evolutionary, genetic and neurobiological perspectives in political psychology. Draws on these perspectives to explain political attitudes and behavior, considering literature on nonhuman animals, developmental psychology, personality, psychophysiology, neurobiology, genetics, hormones, disgust sensitivity and mating.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	506	Experimental Design	Focuses on the experimental paradigm that permeates political psychology. Introduces the logic of experimentation and how to design and evaluate experimental studies. Focuses on a variety of different experimental designs, highlighting the various benefits and drawbacks of laboratory experiments, survey experiments and field experiments. Readings combine both theoretical and methodological pieces on the design, analysis and interpretation of experiments with empirical applications.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	511	Public Opinion	Provides an advanced examination of the political opinions of citizens. Covers how citizens structure their opinions and what factors can cause these opinions to change. In so doing, also evaluates various theoretical perspectives and methodological approaches used to study public opinion. Topics include political knowledge, ideology, partisanship and values. Moreover, provides insight into how these factors shape people's evaluation of government and how individual-level opinions are aggregated to produce public opinion.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	512	Political Polarization	Advanced exploration of the concept of political polarization from a political psychology perspective. Introduces the concept of political polarization and provides an overview of recent trends in polarization in the U.S. while covering debates such as whether polarization has increased over time, whether Americans are polarized around issues or social identities, and how value divergence can culturally conflict. Also explores how the media and other external factors can affect citizens in ways that can either fuel or attenuate polarization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PPS	513	Elite Decision Making	Provides a comprehensive examination of political psychology approaches to understanding and evaluating elite decision making. Introduces paradigms for analyzing elites' decisions that focus on the role of personality, leadership styles and prospect theory among others. Also focuses on covering frameworks that students can apply to systematically study how elite actors make decisions on the domestic and international stage. Combines conceptual readings explaining these approaches with applied readings that analyze the decision-making processes of elites through a range of case studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	514	Campaigns and Elections	Provides a political psychology perspective on campaigns and elections. Topics include the effect of election rules, campaigns, social networks and the media on turnout and vote choice. Students engage with research that addresses these topics through psychological lenses focusing on the role of emotions, negativity, persuasion and learning. Combines theoretical literature with applied papers leveraging a variety of experiments conducted in campaign contexts. Also discusses implications for campaign organization and management.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	515	Advances in Media Effects	Provides an advanced examination of contemporary research and debates on media effects. Covers the paradigms of agenda setting, priming and framing. Considers key issues in the field of media effects by paying particular attention to the underlying psychological mechanisms through which the media can affect citizens' attitudes and social judgment. Draws on a variety of examples to demonstrate both the power and limits of media to affect citizens.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	550	Capstone	Serves as the culminating experience of the Masters in Political Psychology. Students apply the theories, frameworks and evidence encountered during the course to explore a novel question or contribute to a contemporary research debate. In the process, students apply a multitude of tools to which they were exposed during the course of the program. Develops final products individually or in a small group based on consultation with course faculty.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		Prerequisite(s): Political Psychology MA student
PPS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PPS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PRM	120	Leisure and Quality of Life	Conceptual foundations for understanding the role of leisure in the quality of life. Social, historical, psychological, cultural, economic, and political foundations of play, recreation, and leisure.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	SB	
PRM	145	Special Events Management	Principles of programming and managing special events for diverse populations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
PRM	201	Community Sports	Examines the role of community sports at the local, national and international levels.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CSM 201 or PRM 201 OR Visiting University Student
PRM	203	Program Planning	Overview of the conceptual foundations and professional competencies necessary to effectively assess, plan, implement and evaluate programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only CSM 203 or NLM 203 or PRM 203 OR Visiting University Student

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PRM	210	Leisure Delivery Systems	Introduces development, management and organization of the public, nonprofit and private sectors for the leisure services professions.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre- or corequisite(s): NLM 160 or PRM 120 with C or better if completed OR Visiting University Student
PRM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
PRM	304	Rec Planning/Facility Develop	Surveys development and management of public, private, and commercial recreation areas and facilities with a focus on meeting program needs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	L	Prerequisite(s): CRD 210 with C or better; ENG 101, 105, or 107 with C or better; MAT 142 or higher with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
PRM	306	Adv Programming & Facilitation	Provides an experiential learning experience where students implement and reflect upon all aspects of an ongoing recreation program including program facilitation, budgeting, marketing, risk management, experience engineering and evaluation.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CSM 203 or PRM 203; Credit is allowed for only CSM 306 or PRM 306 OR Visiting University Student
PRM	310	Volunteer Management	Studies volunteer engagement practices integral to community organizations introducing management techniques such as program organization, recruitment, interviewing, placement, supervision, recognition and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only NLM 310 or PRM 310 OR Visiting University Student
PRM	315	Community Recreation Systems	Explores the nature of community building and attachment. Examines public, nonprofit and private sector services.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	335	Sports & Recreation for Youth	Provides an overview of definitions, statistics, theories and models, and types of programs surrounding youth development in relation to sports, recreation and leisure services. Addresses current trends related to youth development and collaborative partnerships in sports, recreation and leisure services at various levels within local, state, national and/or international systems.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisite: Minimum 45 hours. Credit is allowed for only CSM 335 or PRM 335
PRM	340	Outdoor Survival	Interdisciplinary approach to outdoor survival, including attitudes, psychological stress, physiological stress, preparation, hypothermia, navigation, flora, and wildlife.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
PRM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
PRM	364	Foundations of Rec Therapy	Overview of the fundamentals of therapeutic recreation. Introduces the delivery of treatment services for individuals with a variety of illnesses and disabling conditions experienced throughout the lifespan.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	370	Public Lands Management	Introduces outdoor recreation resource delivery systems; history of wilderness and outdoor recreation resources; the role of outdoor recreation in society; outdoor recreation agencies; related environmental issues.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	380	Wilderness & Parks in America	Examines the American Conservation Movement and the relationships between the environment and recreation behavior.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	SB & H	
PRM	384	Recreational Therapy Practicum	Facilitates a structured fieldwork experience with classroom instruction to integrate knowledge and develop skills and abilities in recreational therapy. Students gain direct service experience with health care, human services, education or recreation programs under the supervision of recreational therapists.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Pre- or corequisite(s): PRM 364
PRM	400	Intervention in Rec Therapy	In-depth analysis of theoretical and philosophical approaches to therapeutic recreation practice with emphasis on various facilitation techniques used in therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre- or corequisite(s): PRM 364 OR Visiting University Student
PRM	401	Managing Leisure Enterprises	Analyzes administrative function, structure, and policies. Successful application in administrative situations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; TDM 372 or CSM 203 or PRM 203; minimum 2.50 GPA; Credit is allowed for only CRD 401 or CSM 401 or PRM 401 OR Visiting University Student

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PRM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student
PRM	406	Program Dsgn&Admn in RecTherpy	Examines management strategies and standards of practice applied in a variety of therapeutic recreation programs. Students write a comprehensive program plan including methods of assessment, documentation, service planning, service delivery and evaluation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 364 with C or better
PRM	413	Ldrshp & Prof Devlpmt in RT	Examines therapeutic recreation leadership theory and strategies, current professional issues, and refinement of professional philosophy and competencies that enable transition from student to professional.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
PRM	422	Special Event Tech&Production	In-depth analysis of the theoretical and philosophical aspects of special event management relative to talent and entertainment, protocol, etiquette, ethics, and programming. Requires some field work in event management.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	423	Special Event Operations	Expands on the concepts of event programming with in-depth examination of the theoretical and philosophical aspects of event operations, festival site design, and working with subcontractors and vendors.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	427	Where's the Money: Spec Event	Examines theoretical and philosophical aspects of revenue generation relative to special events through in-depth exploration of budgeting, accounting, and sponsorship opportunities. Requires field work at an event.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better OR Visiting University Student
PRM	440	Advocacy in Therapeutic Rec	Explores trends and issues facing the field of therapeutic recreation and applies advocacy practices to promote awareness and access.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CRD 563 or PRM 440 OR Visiting University Student
PRM	450	Therapeutic Rec & Comm Health	Explores health and social needs among vulnerable populations through classroom instruction and field exposure to maximize understanding and skill mastery assessing, planning and facilitating recreational therapy activities to promote community well-being.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 450 or PRM 550 OR Visiting University Student
PRM	451	Grant Writing	How to increase grant funding: creating fundable ideas, identifying sponsors, following guidelines, writing effectively, constructing budgets, responding to reviewers.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Credit is allowed for only NLM 451, 565 or PRM 451
PRM	453	Inclusive Community Sport	Examines the foundations of competitive and cooperative inclusive recreation and sport in society from local, regional, national and global perspectives.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 453 or PRM 453 OR Visiting University Student
PRM	455	Rec Therapy & Play w/Children	In-depth study of the philosophical concepts, principles and techniques of play and recreation applied in practice to promote holistic health and well-being among children, youth and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre- or corequisite(s): CDE 244 or PRM 364 with C or better if completed OR Visiting University Student
PRM	460	Assessment&Documentation in RT	In-depth study of the therapeutic recreation assessment process, including examination of interview techniques, assessment instruments, treatment planning, outcomes, evaluation, research, and documentation.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Corequisite(s): PRM 364 OR Visiting University Student
PRM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; Credit is allowed for only CRD 463 or CSM 463 or NLM 463 or PRM 463 or TDM 463
PRM	470	Environmental Communication	Park interpretation and environmental education that includes theories, principles and techniques.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 60 hours
PRM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student
PRM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR Visiting University Student
PRM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): CRD 210, CSM 201, NLM 220, or TDM 205, minimum 72 hours; minimum 2.50 GPA

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PRM	485	Sports Events	Expands the basic concepts of recreation, leisure or tourism program planning and leadership as they are specifically related to sport events management.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 485 or PRM 485
PRM	487	Advanced Special Events Mgmt	Advanced principles of special event sponsorship, public relations, marketing, contracting, risk management, and financial management.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	488	Event Marketing and Promotion	In-depth look at the influence and role of print and social media in special event management. Studies theory, strategies, and planning relative to experience marketing, including the use of promotions.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 145 (PRM 486) with C or better
PRM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
PRM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PRM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
PRM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
PRM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		
PRM	550	Therapeutic Rec & Comm Health	Students gain an in-depth understanding of health and social needs among vulnerable populations. The interprofessional course combines field exposure and classroom instruction to maximize understanding and skill mastery assessing, planning and facilitating leisure education, and recreation therapy activities to promote community health.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PRM 450 or PRM 550
PSB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	501	Basic Principles of ABA	Fundamental principles of behavior including the history, theory, definitions, processes, concepts and characteristics of applied behavior analysis.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	510	Basic Principles Exp Analysis	Practical applications of research methodology to examine the effects and evaluate the efficacy of behavioral interventions. Provides an empirical science approach to designing, conducting and critically evaluating research involving applications of the experimental analysis of behavior in the use of graphic displays, single-case, ABAB, multiple baselines, changing criterion and alternating treatment designs.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	511	Advanced Research Methods	Focuses on research techniques such as time-series methods for single-case assessment, behavior measurement and the effectiveness of treatment interventions on behavior. Topics include conducting component and parametric analyses and use of experimental designs such as withdrawal, reversal, criterion and multiple baselines.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		Pre-requisite: PSB 501; PSB 510
PSB	520	Ethics & Prof Standards in ABA	Ethical standards and legal responsibilities including regulatory requirements and Arizona licensing statutes for ABA professionals who provide services to individuals with special needs and their families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	530	Behv Obs & Functnl Assessment	Focuses on how to conduct behavioral observations and functional analyses using various methods for assessment and for data collection, organization and interpretation.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSB 501; PSB 510
PSB	540	Dev of Appld Beh Intervention	Techniques for conducting task analyses; developing target intervention outcomes; determining alternative behaviors and environmental changes; use of behavior change procedures such as reinforcement, extinction, punishment, shaping, modeling, training and teaching.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSB 501, 510. Corequisite(s): PSB 530

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PSB	563	Basic Principles of OBM	Overview and the use of Behavioral Systems Analysis (BSA) and Performance Management (PM) as they relate to the identification and modification of environmental variables that can affect and improve individual and organizational performance as a system. Basic techniques include analysis of antecedents, behavior and consequences and development of interventions to support the desired performance improvements and increase system productivity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	2		
PSB	573	Adv Prin Learn & Analy of Behv	Provides an in-depth review of the philosophy and theory of behaviorism and its scientific application. Includes Skinner's conceptual framework plus fundamental elements of behavior change and procedures.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSB	578	ABA in Dev Disorders	Provides an overview of the major theories and research related to the development of psychological disorders of childhood and adolescence including autism, attention deficit disorder, behavior disorders and intellectual disabilities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MS Applied Behavior Analysis major
PSB	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSB	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSB	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSB	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		

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PSB	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		
PSB	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		
PSY	101	Introduction to Psychology	Major areas of theory and research in psychology. Requires participation in department-sponsored research or an educationally equivalent alternative activity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	
PSY	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): Freshman; maximum 25 earned hours
PSY	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	224	Intro Cognitive Neuroscience	Surveys topics relating brain activity to cognitive processes and behavior. Begins with an overview of neurophysiology and techniques to measure brain activity. Discusses perceptual and motor processes before investigating neural responses related to attention, memory and cognitive control. Concludes with a discussion of brain processes related to reward, decision making and social cognition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Credit is allowed for only PSY 224 or PSY 294 (Introduction to Cognitive Neuroscience)
PSY	230	Introduction to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): PSY 101 (PGS 101) with C or better; MAT 119, 170, 242, 243, 251, 260, 261, 262, 270, 271, 272, 274, 290 or 291 with C or better OR Visiting University Student
PSY	231	Honors Intro to Statistics	Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology for honors students. Lab includes learning to use statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	CS	Prerequisite(s): Barrett Honors student; MAT 119, 170, 242, 251, or higher with C or better; PSY 101 with C or better
PSY	244	Intro to Directed Child Study	Developmental theories and methods of social interaction with preschool children and supervised practicum in the Child Study Laboratory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		
PSY	290	Research Methods	Planning, execution, analysis, and reporting of experiments. Literature, procedures, and instruments in representative areas of psychological research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4	L or SG	Prerequisite(s): ENG 102, 105 or 108 with C or better; PSY 101 (PGS 101) with C or better; ECN 221, JUS 302, POS 401, PSY 230, 231, QBA 221, SOC 390 or STP 226 with C or better OR Visiting University Student
PSY	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
PSY	302	Psych of Positive Leadership	To thrive in the 21st century world requires innovation, collaboration and the ability to lead during times of change and complexity. There is increasing demand for leaders who can combine a high level of technical ability with the social skills that are necessary for groups of people to live and work productively and in harmony with each other. Focuses on helping students to understand and apply key psychological and social processes that create the conditions for leaders and teams to thrive in dynamic, collaborative environments. Students become familiar with foundational research insights through an "action learning" format that integrates theory with structured opportunities for self-reflection and individual- and group-level practice.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; PSY 101; Credit is allowed for only PSY 302 or PSY 394 (Positive Psychology) or PSY 394 (The Science Behind Well-Being and Happiness) or PSY 394 (Positive Psychology: The Science of Happiness)
PSY	304	Effective Thinking	Understanding and improving intellectual and behavioral skills; information analysis, inference, logic, problem solving, and decision making.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; MAT 119, 170 or higher or PSY 230 with C or better OR Visiting University Student
PSY	306	Environmental Psychology	Concepts and research strategies in the study of behavior in interaction with physical environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 (PGS 101) with C or better
PSY	315	Personality Theory/Research	Definition and description of personality in terms of theoretical and methodological approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student

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PSY	320	Learning and Motivation	Principles of conditioning and motivation; approaches to learning, including acquisition of verbal materials, concepts, and motor skills; memory and transfer.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	323	Sensation and Perception	Underlying processes of vision, audition, and the other senses. Integrates theory, research, and application.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	324	Memory and Cognition	Processes underlying information storage and retrieval, including different kinds of memory, forgetting, depth of processing, and control processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PSY	326	Fundamentals of Brain Research	Introduces the study of the mind through brain research. Students acquire foundational knowledge in functional neuroanatomy, brain-mind relationships and brain research methodologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 290 with C or better; Credit is allowed only for PSY 326 or PSY 394 (Fundamentals of Brain Research) OR Visiting University Student
PSY	330	Statistical Methods	Advanced application of statistics to psychology. Highly recommended for students interested in attending graduate school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	CS	Prerequisite(s): ECN 221, JUS 302, POS 401, PSY 230, PSY 231, SBS 304, SOC 390, or STP 226 with C or better OR Visiting University Student
PSY	341	Developmental Psychology	Analyzes behavior development in terms of psychological principles. Current research in human development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	344	Directed Child Study	Theories and methods of intervention with preschool children and supervised practicum in the Child Study Laboratory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): CDE 232, ECD 211 or PSY 341 (PGS 341) with C or better OR Visiting University Student
PSY	350	Social Psychology	Human social behavior, including such concepts as aggression, attraction, attribution, conformity, groups, helping, person perception, and persuasion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; Credit is allowed for only PSY 350 or PSY 351 OR Visiting University Student
PSY	351	Honors Social Psychology	Critical analysis of human social behavior for honors students; topics include stereotyping, social influence, attraction, aggression, helping, groups, and attitudes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): Barrett Honors College student; ENG 101, 105, or 107 with C or better; PSY 101; Credit is allowed for only PSY 350 or PSY 351
PSY	360	Cognitive Science	Examines cognition from the varied perspectives of philosophy, linguistics, psychology, computer science (artificial intelligence), and neuroscience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 101 with C or better OR Visiting University Student
PSY	365	Community Psychology	Mental health and psychological well-being in the community, emphasizing current issues and related research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 315 (PGS 315), PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	366	Abnormal Psychology	Historical and current definitions, theory, and research concerning abnormal behavior. Major categories of psychopathology, including related treatment approaches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better; minimum 45 hours or PSY 290 with C or better OR Visiting University Student
PSY	368	Forensic Psychology	Clinical practice of forensic psychology: the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101; PSY 290 or minimum 45 hours OR Visiting University Student
PSY	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
PSY	370	Interpersonal Relationships	Development of personal skills for competent functioning in interpersonal relationships across multiple social contexts. Principles of mental health adjustment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 101 with C or better OR Visiting University Student

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PSY	375	Psych of Addictive Behavior	Offers a psychological perspective on addictions, including those related to drug use, gambling, sex, eating and Internet use. Specific topics include basic pharmacology, behavioral processes in addiction, behavioral economics, impulsiveness, delay discounting, self-control, self-regulation, and prevention and treatment of addictions. Some of the data presented in the course derive from animal models; an evolutionary perspective is assumed throughout. Encourages students to think critically about drug use and dependence and about addictions in general. Students achieve these objectives through assigned readings (primarily empirical research), writing assignments, and active participation in, and facilitation of, class discussions.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PSY 375 or PSY 394 (Psychology of Addictive Behaviors) OR Visiting University Student
PSY	384	Psych Undergrad Teaching Asst	The UTA experience allows students to work with the faculty to contribute to the effectiveness of a particular class and provides them with a unique educational benefit commensurate with their receiving upper-division course credit. Provides students with experience in teaching and interacting with faculty and students. These experiences help students make a decision about whether to pursue a graduate degree in psychology and to develop a personal philosophy of learning and teaching.	N	PRA	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 101 with C or better; minimum 30 hours; Credit is allowed for only PSY 384 or PSY 394 (Undergraduate Teaching Assistant) OR Visiting University Student
PSY	385	Psychology of Gender	Examines, from a psychological perspective, the similarities and differences in beliefs, attitudes, and behaviors of women and men.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
PSY	390	Experimental Psychology	Continuation of concepts in PSY 290, with emphasis on multifactor designs and programmatic sequence of experiments.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 101 with C or better; minimum 30 hours OR Visiting University Student
PSY	399	Supervised Research	Experience within the context of current faculty research projects. Student is assigned responsibility depending on qualifications.	Y	RSC	Y	YGB	The College of Liberal Arts and Sciences	Department of Psychology	1-3		
PSY	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
PSY	414	History of Psychology	Historical development of psychology from its philosophical beginnings to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	420	Analysis of Behavior	Research, applications, and philosophy of the analysis and control of human behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better; PSY 320 with C or better OR Visiting University Student
PSY	424	Genetic Psychology	Introduces the concepts, methodologies, and findings of behavioral genetics for Psychology majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better and PSY 290 with C or better OR Visiting University Student
PSY	425	Biological Bases of Behavior	Critical study of physiological psychology, e.g., brain mechanisms underlying motivation, learning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 325 with C or better OR Visiting University Student
PSY	426	Neuroanatomy	Structure and function of mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): PSY 325 with C or better; Credit is allowed for only PSY 426 or PSY 526 OR Visiting University Student
PSY	430	Industrial Psychology	Organizations and management systems: motivation and work performance; human factors in systems design and evaluation; personnel selection and testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): MGT 301 or PSY 101 with C or better OR Visiting University Student

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PSY	432	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines makes it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better; Credit is allowed for only PSY 432 or PSY 498 (Embodied Cognition) or PSY 529 OR Visiting University Student
PSY	434	Cognitive Psychology	Human organism as a processor of information, from perception to cognition. Abstract concepts, semantic memory, attention, and mental imagery.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 323 or 324 with C or better OR Visiting University Student
PSY	437	Human Factors	Emphasizes human factors in high-technology systems. Specific topics include systems development, systems analysis techniques, displays, and controls.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	440	Industrial/Org Psychology	Examines personnel selection, performance assessment, job and workplace design, job satisfaction, organizational behavior, management systems, and industrial safety.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): PSY 101 with C or better
PSY	441	Cognitive Development	Experimental and theoretical literature in child development and behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 341 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	443	Abnormal Child Psychology	Covers the major disorders of childhood and adolescence (e.g., autism, hyperactivity, phobias, and delinquency), including cause, diagnosis, treatment, and prevention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 315, 341, or 366 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	444	Adolscent Psych/Psychopathology	Advanced-level survey of normal adolescent psychological development and psychological disorders of this age period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 341 with C or better
PSY	446	Social Development	Discusses theory, research, and issues regarding social development. Topics may include formation of attachments, prosocial development, and gender-role development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 341 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	447	Psychology of Aging	Analyzes loss, maintenance, and gain associated with cognitive and affective aging. Individual differences in coping with normative life transitions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	451	Stereotyping/Prejudice/Discrim	Critical investigation of the processes underlying, and the factors contributing to, stereotyping, prejudice, and discrimination.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PSY 350, or 351 with C or better; PSY 290 with C or better OR Visiting University Student
PSY	453	Organizational Behavior	Surveys psychological theory and research as applied to the behavior of individuals in organizational settings.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): PSY 350 with C or better; Credit is allowed for only PSY 453 or PSY 598 (Organizational Behavior) OR Visiting University Student
PSY	458	Group Dynamics	Theories and methods of group leadership, group effectiveness, communication within groups, and relations between groups and individual members.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 350 (PGS 350) or PSY 351 (PGS 351) with C or better; PSY 290 with C or better
PSY	461	Interpersonal Influence	Principles and procedures that affect the process of social influence; consideration of attitudinal, compliance-inducing, and perceptual influences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3	SB	Prerequisite(s): PSY 290 with C or better; PSY 350 (PGS 350) or 351 with C or better
PSY	462	Health Psychology	Contributions of psychology to health promotion and illness prevention, adaptation to acute and chronic illness, and to the healthcare system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	465	Psychology of Stress & Coping	Readings in theory and research in the area of stress and coping. Lecture, discussion, class presentations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 315 (PGS 315), 350 or 351 with C or better; PSY 290 with C or better
PSY	468	Psychology and Law	Theories, research, and practice in psychology as related to law, including criminal, civil, domestic relations, and professional issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): CRJ 302; Law and Human Behavior certificate student OR PSY 290 with C or better OR Visiting University Student
PSY	470	Psychopharmacology	Basis of drug action at physiological and behavioral levels. Psychological and medical applications and limitations of drugs used in the treatment of mental illness.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 325 or one of the following: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only PSY 470 or PSY 570 OR Visiting University Student

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PSY	471	Psychological Testing	Methods and theory of psychological testing; various types of psychological tests; consideration of ethical, social, and legal aspects of testing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better
PSY	472	Clinical Psychology	Clinical psychology as a science and profession. Historical development, methods of interviewing, assessment, and therapeutic intervention.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 290 with C or better; PSY 366 (PGS 466) or 443 with C or better OR Visiting University Student
PSY	474	Correctional Psychology	Covers the basic principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings, establishing successful relationships with correctional staff and inmates, and the various career opportunities in correctional psychology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 366; Credit is allowed for only CRJ 474 or PSY 474 OR Visiting University Student
PSY	475	Multicultural Clinical Psych	Discussion-based course that focuses on cross-cultural conceptions of mental illness, diagnosis and treatment approaches, and beliefs and practices of specific ethnocultural groups in the United States. Encourage students to critically think about diversity issues in clinical psychology, one's own attitudes, and culture and psychology more broadly. Students achieve these objectives through reading empirical articles and chapters; taking quizzes and exams; completing hands-on exercises, essays and other writing assignments; and actively participating in and facilitating class discussions.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Minimum 45 hours; Credit is allowed for only PSY 475 or 498 (Clinical Psychology; Multicultural Issues)
PSY	482	Soc Influence/Consumer Behav	Discusses social influence principles, emphasizing strategies employed by professionals that affect consumer behavior. Analyzes consumer defenses against manipulations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): PSY 350 with C or better
PSY	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): minimum 45 hours
PSY	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PSY	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): PSY 290 with C or better OR Visiting University Student
PSY	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-6		Prerequisite(s): Barrett Honors student
PSY	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-7		Prerequisite(s): PSY 290 with C or better
PSY	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-3		Prerequisite(s): PSY 399
PSY	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	Dean, New Interdisciplinary Arts and Sciences	1-12		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	501	Supervised Teaching	Experience in and examination of perspectives on teaching undergraduate psychology.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	502	Professional Issues in Psych	Introduce graduate students to various aspects of the professional roles of psychology, as well as to the ethical standards of the profession.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only PSY 502 or PSY 598 (Seminar on Professional Issues in Psychology)
PSY	512	Advanced Learning	Principles and theories of learning, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	513	Fundamentals in Quant Methods	Fundamental concepts in quantitative research, with an emphasis on basic statistical knowledge and skills.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 513 or PSY 598 (Fundamentals in Quantitative Methods)
PSY	514	Forensic Psych Research	Overview of analyses and methods of forensic psychology research. Focuses on literacy and skills in assessment and scale development, experimentation and RCT, prediction and modeling, and presentation and synthesis of data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	515	Quantitative Analysis I	Introduces advanced experimental and quasi-experimental analysis. Focuses on group-based design and analysis of variance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Criminal Justice MA student, Forensic Psychology MA student, Psychology MA student, Law and Psychology MIP MSP student, or Law and Psychology PhD student
PSY	516	Quantitative Analysis II	Advanced experimental and quasi-experimental analysis. Focuses on principles underlying linear regression and related statistical techniques.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 515 with B or better; Credit is allowed for only PSY 516 or PSY 598 (Psychological Methods II)
PSY	517	Quantitative Analysis III	Covers basic multivariate statistical techniques currently utilized in psychology with a primary focus on factor analysis and structural equation modeling.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): PSY 516 with B or better; Credit is allowed for only PSY 517 or PSY 598 (Quantitative Research Methodology & Statistics III)
PSY	526	Neuroanatomy	Covers the structure and function of the mammalian brain, including sheep brain dissection.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): graduate; Credit is allowed for only PSY 426 or PSY 526
PSY	528	Sensation and Perception	Principles of sensory and perceptual processes, emphasizing research literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	529	Embodied Cognition	Do left-handers think differently from right-handers? Do paraplegics perceive the world differently from those who can walk? If you say about a potential date, "He leaves me cold," do you literally feel cold? And does a Botox treatment to alleviate frown lines make it difficult to understand sentences about sadness? The surprising answer to all of these questions is YES! Embodied cognition proposes that thinking is based on neural and bodily systems of perception, action and emotion. Explores this claim through readings, discussions, debates and embodied interactions, and considers implications of embodied cognition across areas of psychology and applications in education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): graduate standing in Psychology; Credit is allowed for only PSY 432 or PSY 529 or PSY 591 (Embodied Cognition)
PSY	530	Intermed Statistics	One-way and factorial designs; contrasts; post-hoc tests; probing of interactions; mixed designs; power; computer applications; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only HSE 530 or HSE 598 (Statistics for Human Systems Research III) or PSY 530
PSY	531	Multiple Regression/Psych Res	Multiple regression and correlation; hierarchical regression; interactions; curvilinear relationships; categorical predictors; ANOVA in regression; regression diagnostics; regression graphics; and statistical programming in SAS, R or SPSS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	532	Analysis of Multivariate Data	Matrix algebra for multivariate procedures, component and factor analysis, canonical and discriminant analysis, classification, MANOVA, logistic regression, hierarchical linear model.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	533	Structural Equation Modeling	Path analysis; exploratory and confirmatory factor analysis; recursive and nonrecursive latent variable models; mean and covariance structures; latent growth models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	534	Psychometric Methods	Theory and practice of psychological measurement using classical and modern test theories. Reliability assessment, test validation, test construction, test usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	535	Cognitive Processes	Theoretical/empirical treatment of the human organism as a processor of information, including abstraction, memory structure, problem solving, and thinking.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	536	Stat Mthds Prevention Research	Statistical methods used in prevention research including epidemiological methods, logistic regression, program effect estimation, estimation, and mediation analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	537	Longitudinal Growth Modeling	Growth modeling methodology to describe individual variation in development over time. Employs multilevel and structural equation modeling frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	538	Adv Structural Equation Model	Mean and covariance structure analysis. Includes multiple-group modeling, two-level hierarchical modeling, longitudinal growth modeling, analysis with categorical outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	539	Multilevel Models Psych Resrch	Multilevel (i.e., hierarchical linear) modeling, as described by Raudenbush and Bryk (2002) and others. Covers analytic strategies for analyzing a variety of different nested data structures (e.g., couples data, clients nested within group therapy settings, children nested within classrooms, longitudinal data). Covers two- and three-level models for cross-sectional and longitudinal data and also addresses related topics such as centering and estimation. Students perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 531; Credit is allowed for only PSY 539 or 591 (Multilevel Modeling)
PSY	540	Missing Data Analysis	Covers analytic strategies for analyzing data with missing values, with a special emphasis on modern approaches for dealing with missing data, in particular maximum likelihood missing data handling and multiple imputation, maximum likelihood estimation and multiple imputation. Familiarizes students with missing data theory, traditional analysis methods (e.g., deleting incomplete cases, single imputation methods), maximum likelihood estimation, multiple imputation, planned missing data research designs, and the inclusion of auxiliary variables. Students learn how to perform and interpret the results of these models using a variety of statistical software packages.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Department of Psychology	3		Pre-requisite: PSY 532; Credit is allowed for only PSY 540 or 591 (Missing Data)
PSY	541	Research Cognitive Development	Theoretical and empirical issues in the study of children's knowledge and cognitive processes. Comparison of research in Piagetian and other traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	542	Social Development	Reviews and critiques major issues in the area of social development. Covers theory, research, and content.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	543	Stat Mediation Analysis	Specifically covers the substantive motivations for mediating variables and third-variable effects (interaction, confounder, covariate and mediator) in general. Mediation represents a chain such that one variable causes a mediating variable and the mediating variable causes a dependent variable. Describes the single mediator model in detail including assumptions, estimators and geometric interpretations. Once the details of the single mediator model are understood, analysis is extended to multiple mediator models, path analysis, and models with moderators and mediators. Discusses modern causal inference approaches for mediation along with latent variable models, multilevel models and special models for longitudinal data. Also describes research designs for investigating mediating variables. Students learn how to perform and interpret the results of analysis using a variety of statistical software packages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 530; PSY 531; Credit is allowed for only PSY 543 or PSY 591 (Mediation) or PSY 591 (Statistical Mediation Analysis)
PSY	544	Adv Psy of Crim Investigation	Reviews the different types of evidence that state and federal governments use to investigate crimes and incriminate suspected criminal offenders, with a focus on understanding psychological factors that affect the reliability of criminal evidence and the accuracy of criminal justice outcomes.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	545	Advanced Legal Psychology	Surveys psychological theory and research as applied to the cognitions, feelings and behavior of individuals in the legal system. Explores the implications of several subfields of psychology (e.g., social, cognitive, clinical) for legal settings, such as police departments, courtrooms, jury rooms. Provides foundation for those who are considering a career in forensic psychology, law, social work, criminal justice and should also be interesting to those who want to know more about the social and psychological issues at play in the legal system.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	546	Advanced Forensic Psychology	Advanced overview of the clinical practice of forensic psychology: the assessment and treatment of people who interact with the legal system. Focuses on the ways in which psychologists do clinical work (assessment and treatment) to help courts make informed decisions about cases.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	547	Correctional Psychology	Principles of correctional psychology, including psychologists' roles in prisons and jails, the unique challenges of working in these settings and with incarcerated populations, establishing successful relationships with correctional staff and inmates.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	549	Capstone in Forensic Psych	Culminating experience for students in the Master of Science in Forensic Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Forensic Psychology MS student
PSY	550	Advanced Social Psychology	Theory and research concerning interpersonal perception, decision making, attitude formation and change, group processes, social motivation, and interaction processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	551	Advanced Social Psychology	Continuation of PSY 550.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	553	General Psychology Capstone	Culminating experience for online students only in the Master of Science in Psychology program. Students review and synthesize current literature in the field and make actionable research and policy recommendations through written exams.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): Psychology MS student
PSY	554	Item Response Theory	A collection of measurement models based on item response theory (IRT). The models express the probabilities of responses to test or questionnaire items as a function of latent respondent characteristics and item properties. IRT models form the basis for measurement in standardized educational testing, but generally are also now used in clinical, social and personality measurement in psychology, medicine and the social sciences. Assumptions underlying IRT models, methods of parameter estimation and fit evaluation. Also covers important applications of the models in computerized adaptive testing, the detection of measurement bias and multidimensional IRT. Uses several software tools useful in IRT modeling.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): PSY 534; Credit is allowed for only PSY 554 or 591 (Item Response Theory)
PSY	555	Experi/Quasi-Experiment Designs	Reviews research techniques. Analyzes lab and field research; applications to specific topics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	560	Advances/Theoretical Psych	Covers new empirical and theoretical work in psychology with emphasis on its applicability.	N	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
PSY	563	Prev Plan & Eval Serv Setting	Provides the foundational and theoretical knowledge necessary for prevention planning and evaluation in service settings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	564	Prev Educ, Comm, Serv Delivery	Provides the foundational and theoretical knowledge necessary for aspiring professionals planning to serve as a resource to community members and organizations regarding prevention education, the promotion of programs, services and activities as well as maintaining good public relations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	567	Prev Organization & CC	Provides the foundational and theoretical knowledge necessary for affecting organizational and community change to promote and engage in evidence-based prevention practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	568	Stress and the Brain	Covers the fundamentals of stress and brain interactions. Presents a foundation from a historical perspective, then the basics of an organism's stress response, including the activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. The stress response is highly conserved and allows organisms to respond and adapt to their environment. A highly effective and robust stress response facilitates adaptation and behavioral flexibility. However, a maladaptive stress response can produce detrimental outcomes. The ultimate goal is to understand the dynamic and reciprocal processes by which the stress response and brain interact to produce behavioral flexibility and resilience or detrimental outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s) degree- or nondegree-seeking graduate student; Credit is allowed for either BIO 568 or PSY 568
PSY	569	Prof Ethcs, Grwth, Responsbty	Provides the foundational knowledge necessary for engaging and maintaining practices in prevention that are ethical, culturally responsive and adhere to the beneficence and non-maleficence principles.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	570	Psychopharmacology	Provides a broad overview of numerous classes of both psychotherapeutic and addictive drugs (which are sometimes overlapping). Focuses on the classification, mechanism of action, pharmacokinetics/pharmacodynamics, and clinical efficacy of medications that are currently used for the treatment of various psychiatric disorders including mood disorders, anxiety, schizophrenia, ADHD and other conditions. The latter portion of the class focuses on therapeutic drugs that also have abuse potential, including some psychostimulants, opiates, sedative/hypnotics, cannabinoids, steroids and hallucinogens.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 470 or PSY 570 or PSY 591 (Psychopharmacology)
PSY	573	Psychopathology	Theory and research relating to the contribution of psychological, social, physiological, and genetic factors to the development and persistence of abnormal behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	574	Psychotherapy	Detailed survey of the theoretical and empirical literature relating to verbal psychotherapy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	576	Dynamical Systems in Psych	Analyzes patterns of behavior change in psychological systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	578	Developmental Psychopathology	Covers major theories and research related to the development of psychological disorders of childhood and adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	601	Assessment & Diagnosis	Discusses scientifically informed approaches to assessment. Reviews research-based practical strategies for assessing the clinical symptoms, treatment needs and clinical outcomes of individuals who have problems with substance use. Students examine and explore how sociocultural views of substance use relate to patterns of use, and impacts individuals with substance use disorders, and their families. Uses a biopsychosocial approach to discuss the processes involved in addictive behaviors. Addresses how to weave assessment through the entire process of care, from initial screening, through treatment, to relapse prevention. Examines various screeners and assessments, and diagnostic interviews used to detect substance use disorders, along with the strengths and limitation of each. Also reviews how to communicate findings of assessments and diagnoses to individuals, parents and legal entities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	602	Comorbidity Substance Use	Reviews common co-occurring psychiatric, medical and legal problems with substance use related disorders. Discusses scientifically informed approaches to assessment and treatment. Examines and explores how mental illness in combination with chemical dependency and/or substance abuse plus other challenges, such as disabilities and legal problems, impacts individuals, families and society. Uses a biopsychosocial approach to explore and identify evidence-based practice and research in dual diagnoses. Addresses all of the DSM 5 major disorders, including mood, anxiety and psychotic disorders occurring with substance abuse. Examines various screeners and assessments used to detect the presence of and severity of co-occurring disorders. Students learn about the efficacy of psychopharmacology and psychosocial treatments in the treatment of dual diagnoses disorders.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	603	Evidence-Based Interventions	Provides a comprehensive review of the evidence-based psychosocial and pharmacological treatments for substance use related problems. Although the current evidence base for the effects of psychosocial interventions is sizable, subsequent steps in the process of bringing a psychosocial intervention into routine clinical care are less well defined. This course details the reasons for the gap between what is known to be effective and current practice and offers recommendations for how best to address this gap by applying a framework that can be used to establish standards for psychosocial interventions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	604	Multicultural Issues	Cultural competence refers to an ability to interact effectively and respectfully with people of different cultural and socioeconomic backgrounds. Developing cultural competence results in an ability to understand, communicate with and effectively interact with people across cultures. Within the substance use field, programs with culturally responsive policies, assessments and treatment practices have been associated with higher retention of minorities in substance use treatment. Reviews the historical and cultural context of the most prominent cultures in the state of Arizona such as Hispanic Communities, Native Americans, African Americans, Asians and Pacific Islanders. Also reviews the historical and cultural context across sex, gender and sexual orientation as it relates to substance use. Spends the majority of the course time discussing the development of culture-centric approaches in practice, barriers to treatment and integrating diversity into treatment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	605	Grp Thrpy for Subst Rel Probl	Provides a comprehensive review of group dynamics and processes as they relate to addictions and substance use disorders. Reviews theories, research and evidence-based treatment interventions related to group therapy for addictions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PSY	606	Case Management	Successful treatment of substance use disorders requires a comprehensive approach in order to be effective. Case management provides support for clients throughout the treatment process by assessing needs and then arranging, coordinating, monitoring, evaluating and advocating for a package of multiple services to meet the specific client's complex needs. Reviews the principles, knowledge, skills and attitudes necessary to provide evidence-based case management services.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student
PSY	607	Family & Adolescent Treatment	Surveys topics of treatment modalities, interventions, psychoeducation, crisis management, trauma-informed care and continuing care for families and adolescents. Covers empirically validated and evidence-based treatments. Students learn to implement interventions based on the assessment and guided by the treatment plan.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student
PSY	608	Supervision Addiction	Supervision provides a bridge between the classroom and the clinic, and it is necessary to improve client care, develop the professionalism of clinical personnel, and impart and maintain ethical standards in the field. Provides an overview of the fundamentals, principles, models and methods of clinical supervision. Examines the roles, functions, skills and competencies of clinical supervisors with consideration for the unique aspects of supervising addiction counselors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): Addiction Psychology MS student
PSY	678	Prev Psychsoc Intervntions	Provides the foundational knowledge necessary for identifying evidence-based protocols.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of Psychology	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OP3	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Department of Psychology	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PSY	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Department of Psychology	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PTX	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		
PTX	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
PTX	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		

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PTX	301	Basics Pharmacology&Toxicology	Human pharmacology and toxicology focusing on mechanisms of drug action, clearance systems and dose response.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 181 with C or better; BIO 182 with C or better; CHM 234 with C or better OR Visiting University Student
PTX	325	Physiological Psychology	Relationships of physiological processes to behavior. Emphasizes nervous system functioning.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 290 with C or better or two of the following courses with C or better: BIO 181 (or 188), 182 (or 187), 201, 202; Credit is allowed for only LSC 325 or PSY 325 or PTX 325 OR Visiting University Student
PTX	369	Biology of Human Sexuality	Multilevel perspective on human sexuality and reproduction. Integrates psychological with evolutionary, physiological and neuroscientific approaches.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): PSY 101 with C or better; one semester of biology; Credit is allowed for only LSC 369 or PSY 369 or PTX 369 OR Visiting University Student
PTX	386	STEAM Service Learning	Guided process in which students deepen their understanding of their STEAM content area through knowledge-based problem solving that provides a service to others in the community.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 386 or ENV 386 or FOR 386 or LSC 386 or PTX 386 or LSC 494 (Service Learning in the Life Sciences)
PTX	388	STEM Research Fundamentals	Teaches research skills in the natural sciences. Topics covered include the basic research techniques of the study organism and system, experimental design, literature searches, statistical analysis and preparation of scientific papers and posters.	N	LEL	Y	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	L	Prerequisite(s): ACO 320, BIO 182, or MAT 272 with C or better; ENG 101, 105, or 107 with C or better; Credit is allowed for only ENV 388 or FOR 388 or LSC 388 or PLB 388 or PTX 388 OR Visiting University Student
PTX	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	401	Forensic Toxicology	Focuses on toxicology as it pertains to forensic science. Topics include: the history of toxicology; the pharmacodynamics and pharmacokinetics of drugs and alcohol in the human body; as well as the legal applications of toxicology. Also discusses ethics, quality control and quality assurance, and courtroom testimony (as they relate to forensic toxicology). May address other topics such as environmental toxicology, poisons, and current topics related to forensic toxicology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed OR BIO 353 with C or better if completed; LSC 347 with C or better if completed; Credit is allowed for only FOR 401 or PTX 401 OR Visiting University Student
PTX	404	Forensic Toxicology Lab	Focuses on best practices and contemporary protocols and practices used by forensic toxicology labs. Offers topics and exercises dealing with drugs of abuse including alcohol, prescription medications, over the counter medications, and other substances which may be found in the body by the forensic toxicologist.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Pre- or corequisite(s): BIO 305 or FOR 286 with C or better if completed; FOR 401 with C or better if completed; Credit is allowed for only FOR 404 or PTX 404 OR Visiting University Student
PTX	432	Fundamentals of Pharmacology	Aspects of pharmacology using an integrated approach to familiarize students with natural and synthetic therapeutic agents used in medicine.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BIO 340 or LSC 347 with C or better; BIO 353 with C or better; CHM 231 or 234 with C or better; Credit is allowed for only LSC 432 or PTX 432 OR Visiting University Student
PTX	450	Pharmacology & Toxicology Lab	Provides experimental and laboratory experience in conducting toxicology tests to determine the ED50 and LD50 for chemicals. Covers the pragmatic considerations of experimental design, implementation and data analysis. Experiments include whole organism tests as well as cell assays and numerical modeling experiments.	N	LAB	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): BCH 372 or BIO 354 with C or better; Pre- or corequisite(s): FOR 475, LSC 432, LSC 475, PTX 432, or PTX 475 with C or better if completed OR Visiting University Student
PTX	475	Principles of Toxicology	Presents the fundamental principles of toxicology and its application to both human and environmental situations. Starts with the means of defining and quantifying toxic effects through dose response curves (e.g. LD50, EC50, LOEL, NOEL). Then focuses on absorption pathways for toxicants as well as the degradation metabolism pathways for toxicants. Finally focuses on the mechanism of toxic action for common poisons and environmental pollutants. Emphasizes toxicants that students are likely to encounter in forensics and environmental fields.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): BCH 361 or BCH 371 with C or better; Credit is allowed for only FOR 475 or LSC 475 or PTX 475
PTX	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		Prerequisite(s): minimum 45 hours

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PTX	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
PTX	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		Prerequisite(s): minimum 45 hours
PTX	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-6		Prerequisite(s): Barrett Honors student; minimum 45 hours
PTX	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-7		Prerequisite(s): minimum 45 hours
PTX	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-3		Prerequisite(s): minimum 45 hours
PTX	565	Lab Leadership,Policy&Practice	Focuses on essential laboratory management functions, knowledge and skills required to successfully function as a laboratory manager and/or senior-level scientist in clinical, academic, research and applied science laboratories (e.g., forensic science laboratories). Topics include quality assurance and quality control; laboratory accreditation and audits; standards for specific accrediting bodies including but not limited to CLIA, CAP, ASCLD/LAB, OSHA; documentation and sample accessioning; laboratory safety and chemical hazard programs; validation studies and protocol development; certification of individual scientists; and overall laboratory management "best practices."	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FOR 565 or LSC 565 or PTX 565
PUP	190	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student
PUP	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
PUP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	200	Cities in Cinema	Environmental, aesthetic, social, economic, political cultural, and other factors influencing global cities seen through films from around the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU & H & G	
PUP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	301	Introduction to Urban Planning	Theoretical and practical aspects of city planning. Interrelationships among physical planning, environment, government, and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
PUP	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
PUP	360	Urban Geography	External spatial relations of cities, internal city structure, and spatial aspects of urban problems in various parts of the world, particularly in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 361 or PUP 360 OR Visiting University Student

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PUP	361	Planning Workshop	Basic site planning and design techniques. Collection and analysis of information and basic planning research. Report writing and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better; Minimum 45 hours
PUP	362	Journey Stories	Explores journeys, storytelling and geographies--real and imagined. Draws on novels, novellas, short stories, film and video in illuminating stories and storytelling as transformative of self, place and culture in human and more-than-human worlds. Enjoins journey stories through the trilogy movement, place and identity; signature themes in cultural geography that resonate across the arts, humanities and social sciences. Students respond to artfully rendered journeys in personal ways via word, image and sound, creating their own journeys en route.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only GCU 362 or PUP 362 or PUP 394 (Journey Stories: People & Place in Motion) OR Visiting University Student
PUP	363	History of Planning	Historical overview of western urban and regional planning and planning theory, focusing on the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	410	Public Participation Planning	Theory and practice of public participation in planning. Examines and critiques participation techniques and roles of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	412	History of the City	The city from its ancient origins to the present day. Emphasizes European and American cities during the last five centuries. Requires advanced critical thinking and evaluative skills appropriate to students at the junior or senior level as analytical essays and an in-depth research paper are required in addition to regular tests and quizzes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	(L or HU) & H	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better
PUP	420	Theory of Urban Design	Analyzes the visual and cultural aspects of urban design. Theories and techniques applied to selected study models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	424	Planning Methods	Methods for urban planning research. Emphasizes research design, quantitative and qualitative methods, survey research, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	4		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	425	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	SB	Prerequisite(s): PUP 301 with C or better; Credit is allowed for only PUP 425 or PUP 525
PUP	430	Transport Planning/Environment	Overview of transportation planning from the perspective of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	432	Planning/Development Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	434	Economic Development Planning	Provides a broad overview of urban economic development planning in the U.S. This overview includes the role and goals of economic development planning in today's global information economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	436	City Structure and Planning	Political structure and organization of government as it relates to planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student
PUP	442	Environmental Planning	Environmental planning problems, including floodplains, water quality and quantity, solid and hazardous waste, air quality, landslides, and noise.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	445	Women and Environments	Examines the role women play in shaping the built environment; ways built/natural forms affect women's lives. Focuses on contemporary U.S. examples.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	C	Prerequisite(s): junior, senior, post-baccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or post-baccalaureate graduate
PUP	451	Geodesign and Urban Planning	Geodesign is a design and planning method which tightly couples the creation of design proposal with impact simulations informed by geographic contexts, systems thinking and digital technology. Covers the fundamental theory, concepts and frameworks of geodesign. Students become familiar with the geodesign process by reviewing case studies including specific case study applications from University of New South Wales and Arizona State University.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or PUP 301 with C or better; Credit is allowed for GIS 451 or GIS 551 or PUP 451 or PUP 551 or GIS/PUP 494 (Geodesign and Urban Planning) or GIS/PUP 598 (Geodesign and Urban Planning) OR Visiting University Student
PUP	452	Ethics and Theory in Planning	Ethics and theory of professional planning practice in urban and regional communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 301 with C or better OR Visiting University Student

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PUP	462	Graphic Design for Planners	Covers a synthesis of graphic design concepts for communication of complex data as well as advanced report production and public presentation skills.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): PUP 301 with C or better OR Visiting University Student
PUP	465	Sustainable Urbanism	Examines the history, practice and core ideas of "sustainable urbanism," including leading thinkers, tools and strategies up to the present day. Topics include codes, metrics, certifications, charters, the Sustainable Development Goals and the New Urban Agenda.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prereq(s) w/C or better: Sustainability major or in a sustainability concentration; SOS 110; SOS 111 or PUP 190; min 45 hours OR non-Sus major, non-sus conc; PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student
PUP	481	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path, and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): GIS 205 or 211; MAT 170, 270, 271, or 272 with C or better; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581 OR Visiting University Student
PUP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban Planning undergraduate student
PUP	485	International Field Studies	Organized field study, culture and language in specified international locations.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12	G	Pre-requisite: Junior standing; Credit is allowed for only GCU 485 or GPH 485 or LAP 485 or POR 485 or PUP 485 or 585
PUP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6		Prerequisite(s): Barrett Honors student
PUP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
PUP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		Prerequisite(s): junior, senior, postbaccalaureate undergraduate student, degree- or nondegree-seeking graduate student, or postbaccalaureate graduate OR Visiting University Student
PUP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-7		
PUP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-3		
PUP	501	Planning, History and Theory	Comprehensive review of planning profession within a political, governmental, multicultural, and gender framework.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	505	GeoDesign Principles	Systematic exploration and evaluation of alternative complex human-environmental systems using spatially and temporally explicit theories, data and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): GIS 601 and 602, or PUP 576; Credit is allowed for only GIS 505 or PUP 505
PUP	510	Public Participation Planning	Explores the history, theory and practice of public participation in urban planning, including the emergence and uses of participation in the planning field; how to manage different types of processes; and the relationship between participation and social equity. Starts by addressing foundational concepts, the political context of planning, and the history of public involvement in planning decision-making. Next, delves into the process of preparing a public participation plan and explores a range of commonly used information sharing and consensus building techniques. Covers how to effectively lead public meetings and analyze information gathered. The latter part of the class focuses on special topics pertaining to public participation. These include bottom up, community-led processes, overcoming communication issues, changing opportunities for participation in the information age, engaging diverse groups, and participatory processes in the Phoenix region.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PUP 510 or PUP 598 (Public Participation Planning)

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PUP	515	International Planning & Dev	Introduces globalization, international development, international planning practices and policies, urbanization and urban and regional planning in developing nations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	520	Plan Practice, Ethics & Proces	Reviews past and current theoretical developments related to social change perspectives, the role and ethics of planners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking)
PUP	525	Urban Housing Issues	Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisites: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only PUP 425 or 525
PUP	531	Planning/Develop Control Law	Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	535	Water Law and Planning	In-depth study of legal materials providing substantive knowledge of water law, water management issues, and land use planning options.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	542	Environmental Planning	Environmental policies and their relationship to environmental planning practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 442 or PUP 542
PUP	544	Urban Land Use Planning	Theory and methods of urban land use planning, including the rational planning process, comprehensive, functional, and neighborhood plans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	548	Global Perspectives Urban Res	Theory and applications connecting sustainability sciences and practice to urban environmental planning. Sustainable urban development, restoration, and preservation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	550	Transportation/Environment	Examines transportation planning from the perspectives of land use planning, economic development, environmental planning, and social needs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	551	Geodesign and Urban Planning	Geodesign is a design and planning method which tightly couples the creation of design proposal with impact simulations informed by geographic contexts, systems thinking and digital technology. Covers the fundamental theory, concepts and frameworks of geodesign. Students become familiar with the geodesign process by reviewing case studies including specific case study applications from University of New South Wales and Arizona State University.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for GIS 451 or GIS 551 or PUP 451 or PUP 551 or GIS/PUP 494 (Geodesign and Urban Planning) or GIS/PUP 598 (Geodesign and Urban Planning)
PUP	553	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)
PUP	561	Urban Design Workshop	Workshop course focuses on applying knowledge and skills in a "real world" setting, developing meaningful planning and design proposals for existing urban areas.	N	STO	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	562	Tribal Community Planning	Study of tribal planning and best practice including underlying social, political and environmental issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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PUP	564	Transportation Systems Pro Sem	Provides a cross-disciplinary exploration of multimodal transportation systems, with particular emphasis on those issues affecting the state of Arizona. Designed for graduate students in the interdisciplinary Transportation Systems Certificate program (though open to all graduate students), the course offers a broad overview of key concepts; transportation modes (road, rail, air, transit, non-motorized); geographic settings (rural, urban, parks, tribal lands, international trade); and issues (economics, equity, planning, safety, finance, regulation, environment, public participation and alternative fuels). Features speakers from various fields and academic disciplines related to transportation, introducing a variety of perspectives, terminology and methods. Designed as a graduate-level seminar, emphasizes active participation by all students in group discussions based on required readings and information presented by guest lecturers and the instructor.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 564 or PUP 591 (Transportation Systems Pro Sem)
PUP	565	Sustainable Urbanism	Examines the history, practice and core ideas of "sustainable urbanism," including leading thinkers, tools and strategies up to the present day. Topics include codes, metrics, certifications, charters, the Sustainable Development Goals and the New Urban Agenda.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PUP 465 or PUP 565 or SOS 465
PUP	571	Planning Methods I	Theory, methods, and techniques of demographic and economic analysis utilized in urban planning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	576	GIS Workshop	GIS as a tool to address large, multifaceted problems.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	577	Communctn & Visualization Tools	Covers graphic and verbal skills required to effectively communicate planning information and ideas. Emphasizes digital graphics and other computer-based tools and presentation formats, focusing on applying visual strategies and tools most often used by planners to make a persuasive argument.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	2		Prerequisite(s): degree- seeking or nondegree- seeking graduate student; PUP 570 and 571 with C or better
PUP	579	Planning Methods II	Covers key qualitative skills and techniques that planners require, including research design and the understanding of validity and reliability issues, case study research approaches, qualitative data collection strategies, and strategies for analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; PUP 571 with C or better
PUP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	581	Spatial Optimization Fndmntls	Covers the fundamentals of optimization for spatial analysis. Introduces math-based optimization methods, specifically linear programming, integer programming, and branch and bound. Provides the basics for use and application of GIScience and spatial analysis methods for suitability analysis and network analysis. Objectives include: reviewing basics of linear algebra; formulating and solving optimization problems using linear and integer programming; applying raster and vector GIS methods to site suitability analysis, shortest path and service area problems; and integrating GIS into problem formulation and result visualization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GIS 461 or GIS 561 or PUP 481 or PUP 581
PUP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Urban/Environmntl Planning MUEP student
PUP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisite: Graduate student
PUP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student

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PUP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Pre-requisites: Urban and Environmental Planning graduate student
PUP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-4		
PUP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		Pre-requisites: Urban and Environmental Planning graduate student
PUP	642	Urban & Regional Economic Analysis	Land use and locational impact of economic activity and the urban real property market.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-12		
PUP	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		
PUP	701	Urban Planning Colloquium	Presents and discusses new research findings and methods in urban planning.	N	SEM	Y	YGB	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	710	Planning Theory	Explores and critically evaluates planning theories and approaches with the objective of articulating new ideas for planning research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	724	Planning Methods	Tools useful for urban planning research; emphasis on research design and survey methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking)
PUP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
PUP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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PUP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Geographical Sciences and Urban Planning	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
QBA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Economics	1-12		Pre-requisites: Graduate Students only (degree and non-degree seeking)
RDG	291	Children's Literature	Focuses on the reading, comprehension, interpretation and analysis of traditional, classic and contemporary children's literature. Provides an overview of the historical development of these texts. Explores the aesthetics of children's literature as a type of literature and its value as an art form. Deepens students' awareness of the role that children's literature plays in the social and cultural context in a multicultural American society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
RDG	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
RDG	322	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
RDG	323	Literacy Process/Content Areas	Principles and practices for planning subject matter units of instruction that explicitly address learning with texts across academic disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
RDG	413	Lang Literacy 2 in Elem Schls	Applies effective practices for literacy instruction in authentic classroom settings. Prepares teacher candidates to plan and deliver balanced literacy approaches with diagnostic assessment strategies and adaptations to support second language learners and struggling readers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
RDG	505	Lang and Lit Across Lifespan	Provides a foundational understanding of language and literacy development over the course of the lifespan. Addresses early literacy skills, decoding, comprehension, and affective factors of literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate student
RDG	507	Content Area Literacy	Theory, teaching strategies, and practical application concerning learning from text across subject matter disciplines.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	508	Elem Content Area Lit	Presents theory, rationale, and teaching strategies concerning learning from oral, print, and electronic texts across subject-matter disciplines. Emphasizes practical application of content area literacy principles. Familiarizes participants with the literate lives of today's youth, facilitate participants' inquiry into strategies to motivate students in content learning, and provide strategies to improve students' comprehension and application of content material. Readings, online inquiries, and assignments focus on application of course content. Emphasizes implications of recent research and theory in content literacy and adolescent literacy.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	510	Literacies, Dig Tech, Lrning	Explores how literacies are changing as a result of emerging digital media and technologies, and the implications of these cultural and technological shifts for literacy teaching and learning.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	512	Theory Foundns-Lang/Literacy	Introduces theoretical lenses useful in understanding issues in language and literacy education and research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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RDG	515	Mltimdl Lit for Chld & Adlscnt	Designed for classroom teachers, librarians and other interested literacy educators as part of the Masters of Arts degree in Literacy Education. Focuses on the analysis of children's, young adult and multimodal literature; understanding the modes of representation and communication used in these texts; and the various sociocultural roles these texts play in contemporary society. Provides participants with the opportunity to read, enjoy, analyze and discuss a wide variety of children's and young adult literature. Also explores numerous authors, illustrators, genres, formats and themes of children's and young adult literature.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	518	Lang & Lit for Diverse Lmrs	Provides a foundation of theory and research related to literacy instruction for culturally and linguistically diverse learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	519	Writing Thru The Lifespan	This language and literacy course provides a foundational understanding of writing development, instruction and assessment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	520	Ess Elemnts EED Lit	Intended for practicing teachers, focuses on the development of a comprehensive approach to Reading and Writing Instruction K-8.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	530	Lit Mthd, Asst, Reflectn PreK-5	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for children in pre-kindergarten through fifth grade.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	531	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538
RDG	532	Language and Literacy II	Builds on the theoretical knowledge and pedagogical skills presented in the previous course. Uses diagnostic assessments in the planning and implementation of intervention literacy lessons for struggling readers/writers in a classroom setting as part of the course case study assignment. Includes differentiated instructional and assessment strategies to address the needs of diverse learners to include English language learners. Also includes an emphasis on writing and composition to ensure future teachers have the knowledge necessary to teach all forms of writing in the elementary classroom. Includes an overview of the historical development of children's literature and the criteria necessary for analyzing and selecting all genres of quality children's literature.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Pre- or corequisite(s): RDG 531
RDG	540	Lit Mthd, Asst, Reflectn 6-Adlt	Literacy methods and assessment course with a nine-week practicum experience utilizing assessment and instructional techniques for individualized reading instruction for adolescents (grade 6-12) and adults (age 16 and above not in K-12 setting).	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	6		Prerequisite(s): RDG 505; RDG 510; RDG 512
RDG	550	Practicum Exper-Elem/Sec Read	Practicum experience utilizing assessment and instructional techniques for classroom settings. See RDG 557 for State of Arizona reading endorsement.	N	PRA	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	555	Formal Measures of Lit	Understanding the attributes of standardized tests and applying this information to analyze, select, and explore their use.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
RDG	556	Assess/Proc-Elem/Sec Reading	Techniques for classroom and clinical reading/literacy assessment and instruction. Emphasizes continuous assessment. May be taken concurrently with RDG 550 or 557. Recommended for State of Arizona reading endorsement.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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RDG	563	Children's Literature	Selects and uses children's literature and related nonprint media to support the elementary school curriculum.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student or undergraduate postbaccalaureate
RDG	572	Literacy Teacher Leader	Provides a foundation in educational and instructional leadership that support continuous school literacy improvement. Also provides opportunities to apply these fundamentals by creating and conducting literacy workshops/professional development for a group of teachers or other literacy educators. Meets the leadership requirement for the AZ Reading Endorsement and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Curriculum and Instruction (Literacy Education) MA student; Credit is allowed for only RDG 572 or RDG 598 (Literacy Teacher Leader)
RDG	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	597	Capstone	Provides a foundation in practitioner action research and literacy leadership with opportunities to apply these fundamentals by creating, conducting and researching literacy professional development for literacy educators and other community practitioners. Meets the leadership requirement for the AZ Reading Endorsement, addresses the International Literacy Association Standards for Literacy Professionals, and serves as the capstone class for the Master of Arts in Curriculum and Instruction with a concentration in Language and Literacy.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Literacy Education MA student
RDG	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student

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RDG	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
RDG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Graduate student (degree seeking or nondegree seeking) or Postbaccalaureate Undergraduate student
REA	380	Real Estate Fundamentals	Real estate for the student/consumer with an emphasis on the applied aspects of each area of real estate specialization. Not open to Real Estate majors.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR nondegree-seeking student; minimum 2.00 GPA, OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	401	Real Estate Appraisal	Factors affecting the value of real estate. Theory and practice of appraising and preparation of the appraisal report. Appraisal techniques.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): FIN 300, 302, 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	411	Real Estate Law	Legal and ethical aspects of land ownerships, interests, transfer, finance development, and regulations of the real estate industry.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prereq(s): W.P. Carey BA or BS BUS mjr or non-BUS stdnt w/ min 56 hrs & min 2.50 gpa; FIN 300, 302, or 303 or REA 380 w/ C or better OR degree- or nondegree-seeking grad stdnt; Credit allowed for only LES 411 or REL 411 OR Visiting University Student
REA	441	Real Estate Land Development	Neighborhood and city growth. Municipal planning and zoning. Development of residential, commercial, industrial, and special purpose properties.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): W.P. Carey BA or BS Business major or non-business student with minimum 56 hours and minimum 2.50 GPA; FIN 300, 302, or 303 or REA 380 with C or better OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	456	Real Estate Investments	Analyzes investment decisions for various property types. Cash flow and rate of return analysis.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): FIN 300, 302, 303 or REA 380 with C or better; minimum 2.50 GPA; minimum 56 hours OR Visiting University Student
REA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	GNA	W. P. Carey School of Business	Department of Finance	1-12		
REA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		Prerequisite(s): W.P.Carey BS or BA major or non-business major with minimum 56 hours and 2.50 GPA OR degree- or nondegree-seeking graduate student OR Visiting University Student
REA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
REA	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		

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RED	501	Urban Econ & RE Dev Principles	Explores the basic principles of urban economics and their application to real estate decision making.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	1		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	502	Real Est Valu-Fin & Capt Mkts	Addresses the concepts of valuation applied to real estate and teaches how to apply these principles. Intermediate- to advanced-level course in mortgage finance, and associated capital market innovations.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	503	Real Estate Market Analysis	Focuses on market analysis and market data gathering methods, means, and techniques necessary in identifying market opportunities and developing specific market strategies for successful real estate development.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	504	RE Site Analy Mstr Plan Design	Analyzes the physical characteristics of a property, including the site and physical area, legal, political, economic, and financial facts that impact the highest and best use of a property and what can be built upon the property.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 504 or 591 (Real Estate Develop Principles)
RED	505	Land Use&Public Entitlement Pr	Covers a basic understanding of the legal and practical zoning and governmental land entitlement process. Examines the legal history, structure, and implications of zoning, as well as the fundamentals of "real life" situations that occur in the entitlement and real estate development field. Provides a broad overview of this process from a legal and development viewpoint, but is not intended to be a comprehensive analysis of all entitlement issues.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: Graduate (degree or nondegree) student; Credit is allowed for only RED 505 or 591 (Mkt Segmentation/Analysis)
RED	506	Real Estate Law for Developers	Covers the nature of property and the legal system as it relates to purchase agreements, title, surveys, declarations of covenants, defining easements, and licenses among other related topics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate
RED	507	Synthesis Project #1 Residenti	Employs the students learning through application of developing a specific parcel of land.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): degree- or nondegree-seeking graduate
RED	508	Real Estate Engineer. & Constr	Explores the basic principles of engineering and construction of real estate development projects. Reviews construction technologies within the framework of architectural design and engineering as well as construction means, methods, and systems.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	509	Adv. Fin Analy for Com RE	Teaches more complex financial analysis of income-producing property, including various decision-making tools such as Monte Carlo, option pricing, assessing alternatives, and how to build these into financial models. Also teaches financial analysis of business structures to determine potential outcomes such as debt and equity structures, waterfalls, claw backs, and other business and ownership concepts. Emphasizes strategic alternatives, assessing risk and conversion events.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	510	Re Est Devp. Bus & Proj Mgmt	Teaches management of real estate development companies and process. Students learn the various aspects of project management, financial management and project accounting, lending relations and managing loans and pay applications as well as dispute resolution and strategic partnerships.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Prerequisite(s): Real Estate Development MRED student
RED	511	Design of the Built Environmen	Teaches the built environment and how that applies to creation of places, market positioning, capturing value and the importance of good design to the business of real estate.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 511 or 691 (Real Estate Dev Project Mgmt)
RED	512	Real Estate Law for Developers	Teaches issues faced by developers such as various types of financing structures, including special districts, TIF and bond financing. Covers issues and process of raising capital and various forms of securing equity. Discusses private placement memorandums, limited liability companies, partnerships and public private partnerships. Students also learn about environmental law, income tax issues, negotiation, and alternative dispute resolution.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 512 or 691 (Adv Real Estate Finance/Analys)
RED	513	Adv Real Est Engineer, Constr	Covers various construction delivery methods, construction project management and scheduling, construction contracts, mechanics and materialmans liens, and pay applications. Students also learn about sustainability and the built environment.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	2		Pre-requisite: MRED student; Credit is allowed for only RED 513 or 691 (Real Estate Dev. Project Mgmt)

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RED	514	Synthesis Project #2 Income Pr	Through application to a specific problem given by faculty, students work in teams to analyze and seek solutions to development of land for an income-producing property. Students investigate a specific parcel of land, performing due diligence, preparing a market and segmentation analysis, defining highest and best use(s), designing a solution, preparing residual land value analysis, defining a product offering, pricing points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	3		Prerequisite(s): Real Estate Development MRED student
RED	515	Synthesis Project #3 Capstone	Employs all that the students have learned through application to a specific problem given by faculty. Students work in a team to analyze and seek solutions to development of land for a complex, mixed-use project. Students investigate a specific parcel of land and are required to perform due diligence, prepare a market and segmentation analysis, define highest and best use(s), design a solution, prepare residual land value analysis, define a product offering, price points, building design, site planning and comparative valuation analysis.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Finance	4		Pre-requisite: Master of Real Estate Development major; Credit is allowed for only RED 515 or 598 (Ret Analys; High Dens Mix Use)
RED	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
RED	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Finance	1-4		
RED	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	W. P. Carey School of Business	Department of Finance	1-12		
REL	100	Religions of the World	Introduces the history of religious traditions of the world, including Buddhism, Christianity, Hinduism, Islam, Judaism, and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 100 or REL 200 OR Visiting University Student
REL	101	Religion, Culture, Public Life	Explores how religions are conditioned by cultural values and operate in the political sphere.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	
REL	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
REL	111	Introduction to Asia	Offers a basic introduction to the geography, history, cultures, states, and societies of South and Southeast Asia as well as China, Japan, and Korea.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST 111 or REL 111
REL	131	Biblical Hebrew I	Offers an introduction to Biblical Hebrew, the language in which most of the books of the Hebrew Bible/Old Testament have been written. Provides the basic tools to understand and translate Biblical Hebrew texts. Covers the Hebrew alphabet, basic vocabulary, morphology and syntax. Students learn idiomatic expressions, basic literary techniques in narratives and poetry, as well as specificities of Semitic languages. Emphasizes a critical approach to the ancient text. Also introduces the evolution of the biblical text, from ancient manuscripts to contemporary editions and translations. Includes an introduction to the development of writing and to the evolution of Hebrew, from earliest inscriptions to its revival in modern Israel. The texts translated in class are situated in the history of Israel, but also in their Jewish and Christian cultural and religious contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Credit is allowed for only HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I)
REL	132	Biblical Hebrew II	Completes the study of basic Biblical Hebrew grammar and vocabulary (Futato's Beginning Biblical Hebrew, chapters 21-40). Prepares students to translate narrative and legal texts from Hebrew Bible. Students learn to use dictionaries, grammars, paradigms and critical editions of the biblical text.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 131 or HEB 194 (Biblical Hebrew I) with C or better; Credit is allowed for only HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II)
REL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		Pre-requisites: Freshman standing; Maximum 25 hours
REL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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REL	200	Exploring World's Religions	Writing-intensive course introducing analytical skills necessary for understanding religious traditions. Beliefs, practices, and communities of several religious traditions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; maximum 75 hours; Credit is allowed for only REL 100 or REL 200 OR Visiting University Student
REL	201	Religion and the Modern World	Introduces the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	202	Religion and Popular Culture	Explores various intersecors between religion and the popular media, including music, news, advertising, the visual arts, literature, performance, and film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Credit is allowed for only FMS 202 or REL 202 OR Visiting University Student
REL	203	Saints/Sins-Explore Sacred Bio	Comparison of the role of biography across religions to examine the process of categorizing people as saints or sinners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	205	Life, Sex and Death	Ways that religions have understood birth, sexuality, death, and the passing of generations. Examples from traditions throughout the world.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	207	Ritual, Symbol, and Myth	Ritual, symbol, and myth as types of religious expression, with examples selected from the nonliterate religions of the world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	210	Introduction to Judaism	Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only JST 210 or REL 210
REL	211	Jews and Judaism in America	Chronological analysis of Jews and Judaism in American history and letters.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	SB & H & C	Credit is allowed for only HST 211 or JST 211 or REL 211
REL	225	Africana Religious Studies	Introduces the history and development of African American and Black Diasporic religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	
REL	230	Intro to Jewish Civilization	Overview of Jewish civilization from antiquity to the present. Answers the following questions: Who are the Jews? What do Jews believe? How did Jews interact with non-Jews? What was the lasting contribution of Jews to the world? In the attempt to answer these questions, provides the skills of being a good college student. Presents Judaism as an evolving civilization with an overarching distinctive culture but with a variety of subcultures and ethnic diversity. Presents the Jewish civilization through literature, films, music, and internet resources, with an overview of its complexity and diversity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Credit is allowed for only HST, JST or REL 230
REL	231	Biblical Hebrew III	Advanced study of Biblical Hebrew. Deepens understanding of the grammar and composition of the Hebrew Bible. Translates texts of different literary genres (narrative, legal, poetic, prophetic) and different periods. Introduces the basic principles of textual criticism and different approaches to interpret the texts of the Hebrew Bible.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 132 or HEB 194 (Biblical Hebrew II) with C or better; Credit is allowed for only HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III)
REL	232	Biblical Hebrew IV	Addresses advanced topics in Biblical Hebrew grammar and interpretation. The first half of the semester is devoted to texts from the Hebrew Bible; the second half on extra-biblical texts written in ancient Hebrew (for example: Dead Sea Scrolls, Rabbinic texts, ancient Hebrew poetry). Topics and texts change annually.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): HEB, JST, REL 231 or HEB 294 (Biblical Hebrew III) with C or better; Credit is allowed for only HEB, JST, REL 232 or HEB 294 (Biblical Hebrew IV)
REL	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
REL	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
REL	260	Introduction to Islam	Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only HST 260 or REL 260
REL	270	Introduction to Christianity	Beliefs, ceremonies, festivals, and institutions of Christianity, emphasizing the contemporary era. Assumes no previous knowledge about Christianity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	282	PreHispanic Native Am Wrlidview	Surveys cosmological traditions of indigenous civilizations on the Pre-Columbian American continents	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	287	Topics Film, Media & Religion	Explores specialized topics in the study of film, media and religion. Analyzes how religious values, identities and practices related to various cultural traditions are constructed, communicated and presented through films and media.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Credit is allowed for only FMS 287 or REL 287
REL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		

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REL	300	Future of Religions	Critical theorists of modern religious and secular beliefs argued that both theism and atheism have had their martyrs and tyrants. Nietzsche proclaimed "God" of the West dead, Marx unmasked religion as opium for the oppressed masses, and Freud analyzed religious future as an unconscious illusion. The future of secular progress has become equally suspect in the wake of the Holocaust, Hiroshima, the gulags, the killing fields of Cambodia, Rwanda. Globally motivated terror revealed itself as capable of religious as much secular justifications. The future of faith and reason has become a doubly open theoretical and practical question in philosophy, religious studies, literary study, critical theory, cultural and gender studies, and all sciences. Applies theoretical and methodological tools to critically exam beliefs, practices, and communities and their role in both generating and transforming the ethical and spiritual discontents of the global age.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HON 394 (The Future of Religions) or PHI 303 or REL 300
REL	301	Comparative Mysticism	Comparative examination of Eastern and Western mystical traditions from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	307	Religion: Theory and Practice	Examines the intellectual history of academic study of religion through various theoretical approaches, major themes, and thinkers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; REL 101 with C or better OR Visiting University Student
REL	310	Western Religious Traditions	Religious traditions of Judaism, Christianity, and Islam, comparing their doctrinal, institutional, and ritual systems and social histories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	311	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
REL	312	History & Memory of Holocaust	In-depth study of the history of the genocide of Jews, the rise of modern antisemitism within the context of Nazi Germany, and the memory and memorialization of the Holocaust post 1945.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 369 or JST 369 or REL 312 or HST 304 (Shoah: History, Memory, and Representation) or HST 394 (History of the Holocaust)
REL	313	Anti-Semitism in the Media	By examination and discussion of various media, explores the phenomenon of modern anti-Semitism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; FMS 100 with C or better OR Visiting University Student
REL	314	Jewish Philosophy	The history of Jewish philosophy from its origins in the Hebrew Scriptures to postmodern expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 390 or JST 314 or PHI 390 or REL 314
REL	315	Hebrew Bible (Old Testament)	Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JST 315 or REL 315 OR Visiting University Student
REL	316	Lit Readings/Hebrew Bible	Literary analysis of two of the main genres of the Hebrew Bible: narrative art and poetry. Students learn the main literary conventions of biblical prose and poetry, and how these conventions are applied or subverted. Each class comprises the study of a literary aspect, close readings, and thematic discussions. Biblical texts are read only in translation. They are situated in the religious, literary and artistic traditions that have developed on their basis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENG 316, HEB 316, JST 316, REL 316 OR Visiting University Student
REL	318	Contemp Amer Jewish Identities	Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(HU or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only JST 318, REL 318 or SOC 375
REL	319	Religion, Violence and America	In-depth study of ways in which religion and violence have shaped American history, culture and identity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 319 or 394 (Religion, Violence & America)

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REL	320	American Religious Traditions	Examines the formation, development, and interaction of major American religious traditions (indigenous, African American, Asian American, and Euro-American).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	321	Religion in America	History of religion in America with attention to issues of historiography, pluralism, gender, race, ethnicity, politics, and social reform.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	323	African American Religion	Examines the experiences, motivations, and contributions of a number of figures associated with African American religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	324	Sacred Healing Art Africa Wrld	Multidisciplinary exploration of religion and religiosity with respect to Black cultural developments such as music, art, food and healing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	326	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only TCL 328 or REL 326 or REL 326
REL	330	Native American Worldviews	Presents worldviews through the art, architecture, writing, mythology, ritual and folklore of tribes in Native America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	331	History of Native Am Religions	Explores the role of religion in Native American history, including missionization; adaptation; and prophetic, messianic and religious revitalization movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & C & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	338	Daode Jing: Way to the West	At 5,000 words, the Daode Jing [Tao-te ching, "the Scripture of the Way and its Powers," attributed to the Sage Laozi] is perhaps the shortest religious book in the world. It is also the most widely misinterpreted. In China, Daoists, Buddhists and Confucians have each taken its short, pithy statements as warrant for their very different belief systems. In the West, missionaries, new-age pundits, hippies, rock-stars, mystics and LSD advocates each claim to understand the "true meaning" of Laozi's mystical words. But "the farther one travels, the less one knows..." Students read representative samples of these explanations to understand why this brief book of wisdom has endured for over 2000 years. Requires no knowledge of Chinese. Presents all Chinese texts in the translations of the instructor.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only CHI 338 or REL 338 OR Visiting University Student
REL	343	Daoism	Introduces the history, doctrines, and practices of Taoism from the mid-second century CE up to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Prerequisite(s): minimum 24 hours; ENG 102, 105, or 108 with C or better; Credit is allowed for only CHI 343 or REL 343 OR Visiting University Student
REL	344	Religion/Values-Japanese Life	Japanese values expressed in the life and annual cycles of the family, local and national identities, and popular culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	345	Asian Religious Traditions	Introduces the major concepts of religious beliefs, rituals, and practices in Hinduism and Buddhism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours
REL	346	Chinese Religions	Examines the history and practices of Chinese religions with particular attention to culture, society, and history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only CHI 346 or REL 346
REL	347	Relig of India: Peace&Conflict	In-depth analysis of major Indian religious traditions in historical and contemporary context, with attention to theologies, textual genres, doctrines, rituals, political and cultural expressions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	348	Religion & Culture in SE Asia	In-depth study of the religious diversity of Southeast Asia including Hinduism, Buddhism, Islam, Christianity, spirit cults and ancestral religions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 294 (Southeast Asia Global Crossroads) or REL 348
REL	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
REL	350	Hinduism	Studies diverse forms of Hinduism through its institutions, literature, folklore, art, and architecture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR Visiting University Student

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REL	351	Buddhism	Doctrines, practices, and institutions of the Buddhist religion, emphasizing its role in the history and culture of Asian societies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	352	Modern Buddhism	Focuses on modern issues related to Buddhism with special attention to colonialism, nationalism, the development of the nation-state and globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 352 or 394 (Modern Buddhism)
REL	354	Religions of Korea	Explores major religious traditions and folk religions in Korea. Covers diverse topics such as mythology, indigenous practices, doctrinal and meditation Buddhism, early and Neo-Confucianism and Christianity as well as the new religions of modern times. Discusses the development of religious ideas and practices in light of the political, cultural and social milieu. Focuses on cultural importation and adaptation as well as interaction and conflict among the different religious traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only KOR 354 or REL 354
REL	355	Japanese Cities/Cultures-1800	Relations among ideas and literary, visual, and performing arts of the ancient aristocracy, medieval samurai, and early modern townspeople.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	356	Buddhism in America	Examines diverse Buddhist traditions in the U.S. among Asian-American communities and converts to this religion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	357	Buddhism in S & Southeast Asia	Examines Theravada Buddhist institutions, practices, and communities in ancient and contemporary south and southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	360	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 101 (or ENG 105 or 107) with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
REL	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 394 (Roman Religion) OR Visiting University Student
REL	362	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
REL	363	Islam and World Affairs	Advanced examination of complex trends to construct the roles of Islam as a belief, its institutions, leaders and ordinary believers in contemporary world affairs. Studies different developments, including the rise of (political Islam) fundamentalism, to subsequent changes in the Muslim world, challenges Muslims face, and domestic and international conflicts. Challenges students to reconceptualize and broaden their understanding of the powerful presence of religion in this era of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours. Credit is allowed for only AFR 373 (or AFS 373) or REL 363
REL	364	Islam in Eurasia&Central Asia	Examines the changing role of Islam in Eurasia and Central Asia through history and interprets current transformations in the region.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only REL 364 or 394 (Islam in Eurasia & Central Asia)
REL	365	Islamic Civilization	Global historical survey of Islamic cultures and societies up to the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 336 or REL 365 OR Visiting University Student
REL	366	Islam in the Modern World	Examines the worldwide transformations of Islamic religion, cultures, and societies in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only HST 339 or REL 366 OR Visiting University Student
REL	369	Women in Islam	Examines the roles women have played through Islamic history (Middle East) and the changing discourse on gender identity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		

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REL	371	New Testament	Origins and literature of early Christian communities; historical investigations of the types of oral and written tradition in the New Testament.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	372	Formation/Christian Tradition	Origins, development, and expansion of Christianity; major themes and tensions from the New Testament world to the beginning of the Middle Ages.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours OR Visiting University Student
REL	374	Witchcraft & Heresy in Europe	Background, origins, and development of the Inquisition; persecution of women and marginal groups.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 361 or REL 374 OR Visiting University Student
REL	375	Lost Scrp't Lost Christianities	Wide diversity of early Christianity and its suppressed and lost texts, which have been found in modern times.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	376	Virgin Mary:Hist,Film,&Culture	Introduces formation and development of cult of the Virgin Mary; analyzes transformations of Mariology within historical, cinematic, and cultural contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; Credit is allowed for only FMS 376 or REL 376
REL	377	Religion in Russia	Examines the history of the various religious traditions of Russia and the former USSR from an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours OR Visiting University Student
REL	378	Religion, War and Peace	In-depth study of the religious, political and ethical dimensions of violence and war. Compares perspectives of Christian, Jewish and Islamic traditions as well as secular viewpoints.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L	Prerequisite(s): ENG 102, 105 or 108 with C or better; Minimum 24 hours; Credit is allowed for only POS 378, REL 378 or 394 (Religion, War and Peace)
REL	379	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
REL	381	Religion and Moral Issues	Manner in which human religiousness relates to social concerns, e.g., sexuality, the environment, bioethical issues, and violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
REL	382	Magick, Religion and Science	Relationship and conflict among magic, religion and science in the West from antiquity to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	383	Religion and Sports	Religion and sport in America are both long-held and passionately maintained cultural components. The first part provides a framework for understanding scholarly analyses and approaches regarding the intersections of religion and sport primarily in the 20th and 21st centuries. Indeed, religious sentiments and doctrines have played and continue to play an important role in creating today's American sporting culture. The second part seeks to understand particular arguments framing sports as a space of religious expression or more boldly as a religion in the United States. To gain various perspectives, students engage with various materials including scholarly works, recorded lectures and podcasts, popular culture videos, and conduct qualitative interviews with student athletes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only ASB 383 or REL 383 or REL 394 (Religion and Sports)
REL	385	Contemp Western Rel Thought	Introduces contemporary Jewish and Christian thought. Topics include religion and politics, problem of evil, interpretations of God, and feminist theology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours
REL	387	Rel & Confl: Theories & Cases	In-depth study of religion and conflict across multiple traditions and regions.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 387 or 394 (Religion and Conflict: Theories and Cases)
REL	388	Religion, Ethics&Intl Politics	Religious and ethical dimensions of international politics. Addresses historical and contemporary ideas, movements, issues and events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 388 or REL 388 OR Visiting University Student
REL	389	Religion:Sex,Power& the Erotic	Explores sexuality and eroticism in the context of the religion, more specifically, the religion of the African Diaspora and Black religious experience in the Americas. Takes an interdisciplinary journey into the intersections of race, sexual norms and mores, and gender dynamics as it pertains to religious praxis, identity and embodied faith.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; min 24 hrs; Credit is allowed for only AFR 368 or AFR 394 (Black Religion: Sex, Power, and Eroticism) or AFS 394 (Religion:Sex,Power,Eroticism) or REL 389 or WST 394 (Religion, Sex, Power, Eroticism)

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REL	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
REL	391	Hist Persp on Phil & Religion	Comprehensive, advanced study of central concepts in the philosophy of religion in the history of Western philosophy.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or ENG 108 with C or better; minimum 30 hours; Credit is allowed for only HST 357 or PHI 391 or REL 391
REL	393	Religion and Sex	Examines what issues are involved in incorporating sexuality into religion and how/why religious traditions seek to control sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours
REL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	401	Sacred Scriptures&Soc Choices	Examines relationships among contemporary moral issues and the sacred scriptures to support choices at individual, group, and public levels.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	
REL	405	Problems in Religious Studies	Selected topics in religious studies; involves students in research interests of instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies major; REL 307 with C or better
REL	406	Religious Studies Capstone I	Develops skills necessary for conducting and presenting in-depth research in the field of religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): Religious Studies major; REL 307 with C or better; senior standing
REL	407	Religious Studies Capstone II	Uses previously developed research to produce original research project in religious studies.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	2		Prerequisite(s): REL 406
REL	410	Judaism in Modern Times	Variety of expressions of Judaism and Jewishness in the modern period. Topics may include American Judaism or religious responses to the Holocaust.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	411	Judaism/BeginningsChristianity	Studies the beginnings of Christianity in relation to Judaism: their common context, the process of their distinction and their mutual influence. Through a historical and thematic approach, explores the parallel construction of Jewish and Christian identities. Combines readings from primary sources (Hellenistic Judaism, Qumran, New Testament, Early Christianity, Rabbinic Judaism) and up-to-date scholarly literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	Prerequisite(s): ENG 101,105,107,108 or HST 100,102 or REL 100 or SLC 142, 202 w/ C or better; Credit is allowed for only HEB/JST/REL 411 or HEB 394 (Judaism & the Origins of Christianity) or HEB 494 (Judeo-Hellenistic Lit) OR Visiting University Student
REL	413	SacredCrimes:Religion&Violence	Religion is capable of doing great good in the lives of humans, leading them to personal betterment and positive social contributions. Yet, throughout human history religion has also led some individuals to engage in acts of violence and other dangerous behaviors. This course explores the history of several religious traditions and texts and their complicated connections to violence and criminality.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only CRJ 423 or FOR 413 or REL 413 or FOR 494 (Sacred Crimes: Religion, Violence & Crim) or REL 494 (Sacred Crimes: Religion, Violence & Crim) OR Visiting University Student
REL	420	Religion in Amer Life/Thought	Influence of religion on American society, culture, and ideas; the distinctive character of religion in America.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU	
REL	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
REL	454	History of Genocide	Examines the individuals and institutions responsible for the most infamous episodes of state-sanctioned violence in the 20th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only FOR 454 or HST 454 or REL 454 OR Visiting University Student
REL	459	God & the Problem of Suffering	Examines whether a Western theistic conception of God (that is, an omniscient, omnibenevolent, omnipotent being—the God of the three main Western religions) is compatible with the existence of what appears to be an abundance of pointless suffering in the world. Addresses the logical and evidential problem of (moral and natural) evil, as well as a variety of proposed theodicies through the study of philosophical texts, literature and film.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only PHI 422 or REL 459 or PHI 494 (God and the Problem of Suffering) or REL 494 (God and the Problem of Suffering)
REL	460	Studies in Islamic Religion	Issues in the interpretation and understanding of Islamic texts, history, society, culture, and rituals. May be repeated for credit when topics vary.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & G	
REL	461	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AFR 480 or REL 461 or SGS 442

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REL	470	Religion in the Middle Ages	Religious aspects of medieval life and thought; variety of forms of dissent, heresy, and reform movements from the 4th to 13th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	471	Reformation/Mod Christianity	Protestant Reformation to contemporary Christian movements; includes factors in the dissolution of the Medieval Christian synthesis, variety of reform movements and reformation patterns, Catholic counter-reform measures, formation of liberal theology, ecumenical movement, and the World Council of Churches.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H	
REL	480	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only REL 480 or SGS 441 OR Visiting University Student
REL	483	Religion and Science	Investigates the correlation between science and religion as an interdisciplinary study from a historical perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		
REL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Pre-requisite: Minimum CUM GPA of 2.00
REL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6		Prerequisite(s): Barrett Honors student
REL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
REL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		
REL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-7		
REL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-3		
REL	501	The Study of Religion I	Explores the historical formation and theoretical foundations of the study of religions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	502	The Study of Religion II	Engages with advanced contemporary studies of religions.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	504	Digital Hum: Theory & Methods	Digital technologies are now intricately woven into our lives--whether it's in terms of authoring a paper in a text editor, sending texts and emails, or doing data analysis. Popular narratives of the "big" and the "new" celebrate and sometimes bemoan the ways that these tools shape our communication, access to information, habits and even our physical bodies. Focuses on the histories of these technologies, their operations, popular conceptions about such tools, and their affordances and limits for humanities scholarship. Students learn how to leverage digital technologies, but also how to critically read them. Broad ranging; in addition to surveying the "big tent," students are encouraged to utilize their final projects to engage with specific disciplinary digital tools and methods relevant to their scholarly work.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDH 501 or HST 504 or REL 504
REL	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		

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REL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	603	Teaching World Religions	Seminar designed to prepare participants to teach a course similar to ASU's REL 100.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Pre-requisites: Phd or Masters student in Religious Studies
REL	620	Theories: Anthropology of Rel	Premised on the study of religion as formations of discourse that are embedded in cultural contexts and histories and involve people, practices and texts. This seminar provides the literacy and competence to critically examine and be conversant in the following areas of emphasis: (1) classical and contemporary theories in the anthropology of religion; including foundational authors such as Marx, Mauss, Durkheim, Weber, Geertz, Sahlins and Tambiah, and contemporary works by Cannella, Kean, Pels, Asad, and others; (2) themes like ritual, time, practice, discourse, memory, material culture and commodification; and (3) the anthropological study of particular religious traditions, e.g., the anthropology of Buddhism, Islam or Christianity.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 620 or ASB 691 (AnthroTheories of Religion) or REL 691 (Anthro of Religion) or REL 691 (AnthroTheories of Religion) or REL 691 (Theories in Anthro of Religion)
REL	621	Ethnography Theory and Methods	Ethnographic theory and method approaches to recording and studying lived cultural practice.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): Religious Studies MA or PhD student; Credit is allowed for only REL 621 or REL 591 (Ethnography Theory and Method) or REL 691 (Ethnography Theories and Methods)
REL	626	Themes:Anthropology of Rel	Under this rubric, faculty offer seminars on thematic concerns such as: the anthropology of ritual, memory, modernity, post-colonialism, conflict and revolution, hybridity, peacemaking and secularism, semiotics, conversion, iconography, embodiment, material culture. Topics may vary depending on instructor.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only REL 626 or CHI 691 (Buddhism in Chinese Society) or REL 691 (Religion & Colonialism) or REL 691 (Buddhism in Chinese Society)
REL	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		
REL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
REL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
REL	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		
REL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-15		
ROM	101	Elem Romanian Lang & Culture I	First course in a four-semester sequence that teaches Romanian as a foreign language at ASU. Provides the development of basic speaking, listening, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of simple tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in ROM 101 if credit with C or better earned in ROM 102, ROM 201, ROM 202, ROM 313, ROM 314, ROM 411, ROM 412 OR Visiting University Student

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ROM	102	Elem Romanian Lang & Cultr II	Advances the development of basic speaking, writing, reading and cultural awareness skills. Interactive classroom activities focus on practicing everyday Romanian and ultimately enable students to successfully handle a variety of tasks in straightforward social situations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 101 with C or better OR Visiting University Student
ROM	201	Intermed Romanian Lang Cltre I	Third course in a four-semester sequence that teaches Romanian as a second language at ASU. This module is the first part of an intermediate-level course, emphasizing both oral and written communication through the development of speaking, writing, reading and cultural awareness skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 102 with C or better OR Visiting University Student
ROM	202	Intermed Romanian Lang Cltr II	Second part of an intermediate-level course placing emphasis on both oral and written communication through the development of speaking, writing, reading and cultural awareness skills.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): ROM 201 with C or better OR Visiting University Student
ROM	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
ROM	313	Romanian Comp/Conversation	Develops skills in written Romanian and correct oral expression. Must be taken in sequence with ROM 314.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 201 OR Visiting University Student
ROM	314	Romanian Comp/Conversation	Continuation of ROM 313. Develops skills in written Romanian and correct oral expression. Must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre-requisite: ROM 313
ROM	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
ROM	411	Adv Spoken&Written Romanian I	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ROM 101 with C or better; ROM 201 with C or better; ROM 313 with C or better; ROM 314 with C or better OR Visiting University Student
ROM	412	Adv Spoken&Written Romanian II	Improvement of spoken and composition skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s) with C or better: ROM 101; ROM 201; ROM 313; ROM 314; ROM 411
ROM	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voevode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the Wrid) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student
ROM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
ROM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		

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ROM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
ROM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	101	Elementary Russian I	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Students may not enroll in RUS 101 if credit with C or better earned in RUS 102 or RUS 201 or RUS 202
RUS	102	Elementary Russian II	Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5		Prerequisite(s): RUS 101 with C or better OR Visiting University Student
RUS	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed; Credit is allowed for only HST 141 or RUS 141 or SLC 141 OR Visiting University Student
RUS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	201	Intermediate Russian I	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 102 with C or better OR Visiting University Student
RUS	202	Intermediate Russian II	Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): RUS 201 with C or better; Credit is allowed for only RUS 202 or RUS 295 OR Visiting University Student
RUS	211	Basic Russian Conversation I	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295 OR Visiting University Student
RUS	212	Basic Russian Conversation II	Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Required of Russian majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 102 with C or better; Corequisite(s): RUS 201, 202, or 295
RUS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	295	Russian for Heritage Speakers	Heritage speakers of Russian learn to consciously analyze their passive knowledge of Russian grammar and learn grammatical analysis so that they can master advanced grammatical structures which their native Russian peers use in college-level superior proficiency discourse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Students may not enroll in RUS 295 if credit with C or better earned in RUS 202
RUS	311	Russian Comp & Conv I	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better OR Visiting University Student
RUS	312	Russian Comp & Conv II	Develops writing ability and oral expression.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 202 or 295 with C or better
RUS	322	Scandals and Scoundrels 19th C	An in-depth study of the Golden Age of Russian literature, including novels of Pushkin, Lermontov, Gogol, Khvoshchinskaia, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better
RUS	323	Russian Lit and Revolutn 20thC	An in-depth study of 20th-Century Russian prose and poetry by Zinovieva-Annibal, Gorky, Bely, Babel, Mayakovsky, Platonov, Pasternak, Erofeev, Petrushevskaja, and other writers. Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Pre-requisites: ENG 102, 105 or 108; Credit is allowed for only RUS or SLC 323
RUS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	411	Adv Comp/Conversation I	Improves aural discrimination and self-expression in oral and written skills, emphasizing vocabulary building. Subject materials drawn from current post-Soviet-Russian publications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better OR Visiting University Student
RUS	412	Adv Comp/Conversation II	See RUS 411.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 312 with C or better
RUS	421	Pushkin	Pushkin's poetry, plays, and prose fiction, including Eugene Onegin, The Little Tragedies, Tales of Belkin, Queen of Spades and The Captain's Daughter. Taught in English. Does not satisfy the Liberal Arts and Sciences language requirement for BA degree.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
RUS	423	Dostoevsky and Tolstoy	An in-depth study of Dostoevsky's and Tolstoy's major works, including "Crime and Punishment", "Brothers Karamazov", and "Ana Karenina". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student

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RUS	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425
RUS	430	Russian Short Story	Detailed study of representative works of the Russian short story genre. Includes authors from both Imperial and Soviet Russia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; RUS 312 with C or better OR Visiting University Student
RUS	439	Vladimir Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Pnin (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)
RUS	440	Russian Mass Media	Explores various aspects of modern Russian life through printed mass media, especially Internet media sources, and helps to develop advanced spoken, listening, reading and written skills in Russian. Students work with live television news broadcasts and investigate the most important general sources of electronic information, including electronic newspapers and the main Russian Web sites on a wide range of issues such as culture and the arts, government and politics, business and economics, armed conflicts, and accidents and catastrophes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): RUS 211 with C or better; RUS 212 with C or better. Credit is allowed for only RUS 440 or RUS 494 (Russian Mass Media) OR Visiting University Student
RUS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
RUS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
RUS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
RUS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
RUS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
RUS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SAO	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	196	Study Abroad Office Placeholder	Reserved for undergraduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated by SAO following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 12 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to an ASU Study Abroad Office program is required.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		

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SAO	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-4		
SAO	596	Study Abroad Placeholder	Reserved for graduate participants in Study Abroad Office (SAO) Partnership and Exchange study abroad programs. This placeholder course remains on the student's academic record until the student's record is updated following the completion of the student's study abroad program. This course is then dropped and replaced with the ASU courses, credits, and grades equivalent to the coursework completed abroad. Students must register for at least the number of credits equivalent to full-time study at ASU (i.e., 9 hours during the fall and spring semesters, or 1-6 hours during the summer session). Students participating in an SAO Partnership program must register for the topic "SAO: Study Abroad Program"; participants in an SAO Exchange Program must register for the topic "SAO: Exchange Program." NOTE: This placeholder course is not an indication of the level of coursework or the total number of credits the student may complete abroad. Acceptance to a Study Abroad program is required.	N	LEC	Y	OPT	Office of the University Provost	Office of the Provost	1-18		
SBS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	200	Intro to Soc & Behavioral Sci	Overview of the social and behavioral sciences, indicating their contributions to society and emphasizing interdisciplinary integration	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	
SBS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	300	Careers in Psychology	Professional and academic careers in psychology, with a focus on both career and adult development. Provides opportunities to enhance self-assessment and evaluation strategies for both academic planning and postbaccalaureate professional pursuits while also addressing current issues that affect us at any stage of development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SBS	301	Cultural Diversity	Critical analysis of the complexities of the cultural politics of difference in the contemporary United States. Through interdisciplinary and comparative study, examines a range of theoretical and public/popular cultural discourses about the cultural contributions, experiences, perspectives of, by, and about U.S. residents of diverse racial, ethnic, class, gender, sexual, and transnational origins or identities. Analyzes the social conditions and historical precedents that have shaped current diversity concepts and debates, deepening knowledge and understanding of multiple perspectives on these issues and their relevance to social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	(L or SB) & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum junior standing OR Visiting University Student
SBS	302	Qualitative Methods	Basic methodological issues in the systematic application of qualitative analysis of human social life. Surveys range of qualitative methods used by social and behavioral scientists.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	303	Quantitative Methods	Concepts underlying design and implementation of quantitative research methods.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	304	Social Statistics I	Statistical techniques of the social and behavioral sciences.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	
SBS	335	Power and American Democracy	Explores how persistent patterns of marginalization and privilege impede the realization of democratic ideals in U.S. society. In particular, unpacks how, in practice, different forms of political power reinforce or challenge persistent patterns of marginalization and privilege. In combination with the study of power as the repression and control of others' actions, the course also explores power as exercised in the collective production of social boundaries. Students learn how to better analyze, critique and engage with different forms of power operating in U.S. society.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 335 or SBS 335 or POS 394 (Power and American Democracy) or SBS 394 (Power and American Democracy)

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SBS	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339 OR Visiting University Student
SBS	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
SBS	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SBS	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB, POS, SBS or SOC 374
SBS	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SBS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	404	Social Statistics II: Multivar	Analysis of variance, multiple regression, dummy variable regression, path analysis, and related topics. Computer application to problem solving.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	CS	Prerequisite(s): SBS 303 with C or better; SBS 304 with C or better
SBS	447	Citizenship/Natlism/Identity	Critical examination of citizenship, national belonging and identities by examining contemporary social issues and discourses from global and comparative perspectives. Aims to understand complexities of national belonging that go beyond legal, formal citizenship, such as how cultural, racial/ethnic, class and gender differences challenge the limits of national citizenship. Explores case studies that show how members of different societies demonstrate their positions as legitimate national citizens in different and often conflicting ways, especially in order to defend social justice and human diversity.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 447 or POS 447 or SBS 447 OR Visiting University Student
SBS	450	Topics in Local/Global	Examines links among social, political, economic changes at local, national, global levels. May be repeated for credit when topics vary.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SBS	456	Studies/Forensic Linguistics	Focuses on the three main aspects of that branch of applied linguistics, namely language and the law, court cases where language is the central dispute, and linguistic evidence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 456 or FOR 456 or PAX 456 or SBS 456
SBS	460	Global Cities	This close look at megacities in the global south decisively challenges the outdated impression that the rest of the world's cities still lag way behind the U.S. and Europe. The social sciences' debate over "global cities" anchors our examination of the reorganization of metropolitan social space under impact of neoliberal globalization since the 1970s. Explores urban inequalities of slums and dreamworlds; compares vernacular and transnational styles of urbanism (in architecture, design, markets, consumerism, jobs, ads, ways of living); and asks how transnational flows of people, capital and culture have reconfigured ethnic relations and national identities rooted in global cities. Students become virtual transnational flâneurs, tacking between the slums and skyscrapers of global cities, and conduct guided research on a global megacity to investigate how the production of the global city changes the lived space and urban culture of local residents, and how they respond. We ask, whose city is it?	N	LEL	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum junior standing; Credit is allowed for only ASB 442 or SBS 460
SBS	480	Global Justice	Explores questions of justice that cross national borders, including delivery of foreign aid, immigration, and military intervention.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Credit is allowed for only POS 480, SBS 480, CMN 598 (Global Justice), JHR 598 (Global Justice) or MAS 598 (Global Justice)
SBS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		

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SBS	490	Senior Thesis I	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. First part of a six-semester-hour sequence, followed by SBS 491.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	491	Senior Thesis II	Supervised, independent, interdisciplinary research and writing on an intellectual issue or social problem chosen by the student. Second part of a six-semester-hour sequence.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SBS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): Barrett Honors student
SBS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SBS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SBS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SBS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-3		
SBS	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		
SCM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	300	Global Supply Operations	Explores modern global integrated supply chain management. Covers traditional supply chain topics such as procurement, inventory management, operations, quality management, customer service, performance management and analytics, logistics and transportation. Also discusses issues related to sustainability, humanitarian logistics, ethical business practices and supply chain analytics in the context of evolving supply chains around the world. Students discover how business processes, performance metrics and modern supply chain IT tools aid in the management and growth of effective and efficient supply chains.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prereq(s) w/C or btr: BUS or Non-BUS maj w/min 2.50GPA; ACC 231,232 or 261; CIS 105,236 or CON 251; ECN 221,231 or STP 280; MAT 210,251,265 or 270 OR Engr Mgt maj; CSE 205; IEE 380; MAT 266; Pre/coreq(s): ACC 241,242 or 271 OR Visiting University Student
SCM	303	Honors Global Supply Operation	Provides an overview of supply chain management, specifically for Barrett Honors students. Explains principles and concepts from a managerial perspective and how they are used for decision making. Course topics include supply management, operations management and logistics management as applied to a supply chain system. Discusses planning, forecasting, performance measurement and improvement, and collaboration from the perspective of providing excellent customer service. Current topics of interest include the impact of sustainability, security and globalization on managing today's supply chains with an emphasis on supply chain technology. Class methodology focuses on an open-forum discussion of principles and a detailed analysis of case studies.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR 231 with C or better; Pre- or corequisite(s): ACC 241, 242, or 271
SCM	314	Analytics for Logistics	Focuses on practical tools and technology for real-world decision making, financial and performance analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	315	Business Decision Models	Covers quantitative tools used to aid decision making in supply chain management. Focuses on analytics using technology and software to include Tableau and Microsoft Excel. Other topics include the use of tools in performance management, project management and supply chain finance.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): MAT 211, 266, or 271 with C or better OR SCM 300 or 303 with C or better OR Visiting University Student
SCM	344	Applied Logistics Management	Presents a synthesis of the principles in global logistics (and supply chain) emphasizing the operation and integration of activities such as transportation, inventory, warehousing, facility location, customer service, packaging and materials handling. Examines applicable technology supporting each activity.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre- or corequisite(s): SCM 314 with C or better if completed OR Visiting University Student

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SCM	345	Logistics Management	Provides a deep analysis of many logistics services to include: global logistics, customer service and order management, distribution/fulfillment operations, demand and inventory planning and management, network analysis and design, and transportation operations, carrier selection, costing and negotiation. In addition, reviews current logistics technology process support and integration, as well as how emerging technology is changing the future of logistics.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; Pre- or corequisite(s): SCM 315 with C or better if completed OR Visiting University Student
SCM	354	Procurement of Services	Discusses management of the supply function for logistics-based organizations. Allows students to better understand the nature of procuring a service, contracting that service and establishing appropriate performance metrics. Also focuses on supply chain finance, performance management and analytics.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 300 or 303 with C or better OR Visiting University Student
SCM	355	Supply Management	Discusses management of the supply function, including organization, procedures, supplier selection, quality, inventory decisions and price determination. Students also review project management and governance, supply chain strategy and change management.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; ENG 101, 105, or 107 with C or better; SCM 300 or 303 with C or better OR Visiting University Student
SCM	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM or SOS 385 OR Visiting University Student
SCM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		
SCM	432	Control Sys-Supply Chain Mgmt	Covers processes essential to the determination and direction of the flow of resources needed to produce goods and services. Uses Microsoft Excel for supporting analysis. Includes processes, methods, technology and financial impact to forecast, manage inventory, plan needed capacity, determine resources needed for production, determine priority and sequencing of activities, perform master scheduling and material requirements planning.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 315 with C or better; SCM 345 with C or better; Pre- or corequisite(s): SCM 355 OR Visiting University Student
SCM	440	Quality Management/Measurement	Provides a broad introduction to quality management frameworks and tools, with an emphasis on supply chain and operations management issues. Introduces modern quality management approaches including Total Quality Management, Lean and Six Sigma. Students learn how to define quality for a product or service, develop appropriate measurement systems, and apply statistical and systems thinking to control and improve the underlying processes. Covers quality awards and performance excellence programs and quality management systems such as the ISO 9000 family of standards.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Business (Retail Management) BA or Supply Chain Management BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	445	Advanced Logistics Management	Logistics processes account for approximately 8% of U.S. GDP; therefore, the efficient and effective execution of these processes is critical to supply chain managers in corporations, government entities and nonprofit organizations. Includes an overview of the processes involved to include customer service, performance management, analytics, technology and supply chain strategy. Includes a survey of the institutions and players in the processes, and the analytical tools to evaluate their efficiency and effectiveness.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 344 with C or better OR Visiting University Student
SCM	455	Research and Negotiation	Supply management ensures an organization has resources (i.e., materials, services, equipment) to deliver on promises to stakeholders. This happens by strategically designing supply systems for categories of spend and creating favorable supply agreements. A real-world class project and a real-time contract negotiation simulation helps students understand (1) the relationship among organizational, supply management and purchase category objectives; (2) frameworks and tools to analyze the supply conditions of a category, specifically spend analysis, market/demand analysis and price/cost analysis; (3) how to develop category strategies to ensure adequate and highest value resource supply into the future; (4) the translation of category strategies into manageable supply contracts; and (5) the requisite skills and processes for planning and executing successful contract negotiations.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W.P. Carey Supply Chain Management BS major; SCM 355 with C or better OR Visiting University Student

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SCM	463	Global Supply Chain Management	With increased globalization and offshore sourcing, global supply chain management is becoming an important issue for many businesses. Like traditional supply chain management, the underlying factors behind the trend are reducing the costs of procurement and decreasing the risks related to purchasing activities. The big difference is that global supply chain management involves a company's worldwide interests and suppliers rather than simply a local or national orientation. Enables students to appreciate the challenges of operating supply chains across international boundaries including how to manage various salient issues including sociocultural, economic, technological and political factors that may shape decisions relating to sourcing and moving goods and services across different geographical boundaries.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	G	Prerequisite(s): W.P. Carey BA or BS major; SCM 300 or 303 with C or better OR Visiting University Student
SCM	479	Supply Chain Strategy	Discusses supply chain strategy at the strategic level and from a systems point of view in an open-forum and detailed analysis of case studies. Students work in teams to investigate and report on key supply chain functions, drivers and metrics within an integrated system to include network design, innovation, technology enablement, customer service, sustainability, coordination and management of the critical areas of the supply chain. Includes additional focus on project management, corporate social responsibility and governance and financial implications.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3	L	Prerequisite(s): W.P. Carey Supply Chain Management BS major; ENG 101, 105, or 107 with C or better; SCM 355 with C or better; SCM 432 with C or better OR Visiting University Student
SCM	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SCM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-6		Prerequisite(s): Barrett Honors student
SCM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SCM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): minimum 60 hours OR Visiting University Student
SCM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-7		
SCM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-3		
SCM	501	Fund of Ops&Supply Chain Mgmt	This contemporary class explores basic operations and supply chain management topics, including process analysis, managing waiting lines, inventory, quality and general supply chain issues and concepts. Designed for students with limited business experience and without an undergraduate supply chain degree to set a foundation of understanding.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): degree-seeking graduate student
SCM	502	Operations & Supply Chain Mgmt	Explores supply chain management topics including environmental, project and supply chain processes. Additionally, covers processes in the areas of new product introduction development; quality control; TQM (Total Quality Mgt).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student
SCM	515	Decision Mod-Supply Chain Mgmt	Covers decision modeling approaches for supply chain management such as optimization, simulation and decision analysis. Focuses on technology enablement, performance management and analytics, and strategy change and management. Emphasizes modeling using spreadsheet-oriented approaches. Additionally, focuses on financial spreadsheet analysis and its use in optimization.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student
SCM	516	Descriptv&Predctv Sup Chn Anlyt	Provides a solid foundation and deeper understanding of the use of quantitative modeling tools and techniques to solve problems faced in modern supply chains. Uses Excel workbooks to implement the appropriate quantitative methods, including forecasting demand, capacity planning of a manufacturing line and the line cycle time as it pertains to parts inventory management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey Business Analytics MS or Global Logistics MS student

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SCM	517	Data-Driven Quality Management	Addresses the use of analytics tools and techniques to enhance the ability of quality management approaches to improve processes. Introduces modern quality management approaches including six sigma and design for six sigma. Covers the define, measure, analyze, improve and control (DMAIC) improvement cycle: the core process used to drive six sigma projects. DMAIC refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. Provides an analytics roadmap to help users work through the DMAIC problem-solving process.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Business Analytics MS student
SCM	518	Analytical Decision Modeling I	Explains the skills and knowledge necessary for mastery of the use of quantitative modeling tools and techniques to support a variety of business decisions. Also explores deterministic optimization techniques, including linear programming, nonlinear programming, integer programming; network models and a brief introduction to metaheuristics. Covers the use of these models for a variety of common business problems. Practical application of these models uses Excel and standalone software. Also studies how to ensure that these solutions work in a wide variety of situations (what-if analysis).	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Business Analytics MS student
SCM	519	Analytical Decision Model II	Addresses the skills and knowledge necessary to model situations where uncertainty is an important factor. Covers models including decision trees, queuing theory, Monte Carlo simulation, discrete event simulation and stochastic optimization. Uses these models for a variety of common business problems and requires implementation of these models using Excel and standalone software. Studies how to ensure that these solutions work in a wide variety of situations (what-if analysis). Describes each of these methods in detail.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): Business Analytics MS student
SCM	520	Strategic Procurement	Applies principles, philosophies and processes of supply management to facilitate the continuous improvement and strategic design of an organization's supply management system on a global basis. Focuses on topics like performance management and analytics, project management and governance and finance. Provides a comprehensive understanding of supply management and its impact on the organization.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	3		Prerequisite(s): W. P. Carey MBA or Global Logistics MS student; SCM 502 with C or better
SCM	521	Supply Management/Negotiation	Explores the supply management process of selecting, developing and executing of appropriate sourcing strategies and processes. Covers the importance of driving cost, quality and relationship management, as well as organizational change impacts on supply management of a business.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): SCM 520
SCM	532	Supply Chain Cost/Design Issue	Strategic design and development of supply chains. Focus on cost-management tools applied to supply chain design and supplier management.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	541	Logistics in the Supply Chain	Covers theories and practices of modern logistics management within a market-driven supply chain. Begins with an outline of reasons why some operations are not efficient, then introduces management tools to improve efficiency and responsiveness followed by application of analytical tools to evaluate the current logistic management practices. Topics include logistics strategy, demand management, distribution and warehouse management, distribution/warehouse design and location decisions, transportation and delivery frequency, reverse logistics, humanitarian logistics and responsive supply chains.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	2-4		Prerequisite(s): W. P. Carey degree-seeking graduate student
SCM	542	Lgstc, Glob, & Econ Developmnt	Global trade, global networks and the influence those networks have on economic development worldwide. Exposes geographic, economic and sociopolitical perspectives on these issues and invites students to draw conclusions from an increasingly informed perspective.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502 and 541; Co-requisite: SCM 515
SCM	545	Cases in Global Logistics	Capstone experience for students in the MS in Global Logistics program. Synthesizes learnings from previous courses and applies this learning to specific issues that have a major global logistics component.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	3		Pre-requisite: SCM 502, 515, 541 and 542

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SCM	551	Operations Planning/Execution	Studies management of the conversion of raw materials to finished goods including scheduling, work-in-process inventory management, and postponement/customization. Students gain a deeper understanding of the integrated supply chain of plan, source, make, deliver and return.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	581	Mgmt of Technology/Innovation	Technology life cycles, technology forecasting, new product development process, innovation teams, innovation best practices.	N	LEC	N	OPT	W. P. Carey School of Business	Department of Supply Chain Management	2-4		
SCM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	587	Project Management	Provides a comprehensive understanding of project management with particular focus on planning, scheduling and control of business processes. Emphasizes understanding team dynamics and risk analysis, as well as program management tools, governance and enabling of technology to drive supply chain processes.	N	LEC	N	GNA	W. P. Carey School of Business	Department of Supply Chain Management	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Pre-requisites: W.P. Carey degree seeking Graduate student
SCM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	N	LEC	N	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SCM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		
SCM	791	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Department of Supply Chain Management	1-12		Prerequisite(s): W. P. Carey graduate student
SCM	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCM	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	N	Z3	W. P. Carey School of Business	Department of Supply Chain Management	1		
SCM	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	W. P. Carey School of Business	Department of Supply Chain Management	1-15		
SCN	201	Discovering Deserts of the SW	Introduces deserts of the Southwest. Explores the Southwest desert flora, fauna and geology with particular focus on the Sonoran Desert. Introduces desert habitats, identification of local animals and plants, ecology and adaptations of desert organisms, desert climates and geographical features and human cultures and impacts. This lab course requires field experiences.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		
SCN	202	Sustainability Sci Lit Global	Introduces relevant science concepts and issues that are essential for sustainability literacy. Includes topics related to water, energy and climate. Grounded in UN's Sustainable Development Goals (SDGs) and linked to the Arizona K-12 and NGSS science standards, introduces foundational science concepts related to and their relationship to grand local and global sustainability challenges. Includes a range of lab and field experiences, emphasizing issues facing Arizona and its surrounding regions as examples.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG & G	
SCN	205	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Credit is allowed for only SCN 205 or SCN 305 or SCN 505 or SCN 294 (Costa Rican Language, Culture, Society) or SCN 294 (Tropical Ecosystems of Costa Rica)

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SCN	207	Introduction to Biomimicry	Foundational course that introduces everyone, no matter their discipline or background, to the emerging field of biomimicry. Biomimicry is the practice of looking to nature for strategies to solve human challenges. We are living in a time when scientists and researchers are finding sustainable solutions to solve local and global challenges by looking to nature and imitating how nature solves similar challenges. Get inspired and look at the world through a whole new lens--one inspired by nature!	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		
SCN	208	Intro to Environmental Studies	Introduces environmental studies and urban environmental practices. Widespread environmental problems such as biodiversity loss, resource depletion and environmental change and degradation are among the most pressing global issues of our day. Identifies and explores some of the pressing questions in the field regarding complex environmental problems and solutions from a global perspective. Explores social science and humanities approaches to environmental issues and addresses environmental practices that foster individual and community well-being, environmental quality in cities and urban sustainability.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG & G	Credit is allowed for only SCN 208 or SCN 294 (The Exploration of Environmental Studies)
SCN	209	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SCN	250	Physical Science by Inquiry	Laboratory-based development of concepts and reasoning skills in the physical sciences. Emphasizes open-ended investigations, dialogues between the instructor and individual students, and small group discussions. Helps students think of physical science as an active process of discovery in which they can participate. Helps preservice teachers understand inquiry and develop inquiry skills. Liberal arts students gain experience in the scientific process. Useful for students who wish to improve their science preparation before taking further science courses. Forms foundation for scientific literacy.	N	LAB	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SQ	Credit is allowed for only SCN 250 or 294 (Physical Science by Inquiry)
SCN	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SCN	300	Found. of Environ. Ed	Introduces environmental education, including the philosophy, historical development, resource identification, curriculum development, field trips and other activities designed to provide the structure and development of the field of environmental education. Explores the antecedents to the present-day field and connects the field of environmental education to curricular programs that are an outgrowth of perceived and actual need in the field of environmental education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
SCN	301	Ecol & Nat Hist Sonoran Desert	Overview of the plants, animals, and geology of the desert ecosystem based on the Arizona K-12 Science Standards. Provides students with basic knowledge of the Sonoran Desert characteristics and its relationship to the total school curriculum.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4	SG	Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	302	Environmental Education	Ignites questions, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of environmental education, experiential education and place-based education.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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SCN	303	Environmental Ed Internship	Provides opportunities to learn more about natural sciences and local history; outdoor education and field trip course facilitation and training; individual and group development; facility care and maintenance including landscaping, gardening and carpentry; and the restoration and maintenance of the grounds and teaching materials. Supports and/or develops education projects and programs as outlined by the locations' Educational Outreach office. Various other tasks include: field trip coordination, development of curriculum and classroom materials, hands-on fieldwork, school outreach, off-site outreach events support, and Outdoor Education event support.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): minimum 45 hours
SCN	304	Sonoran Desert Flora: The Life	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SCN	305	Tropical Ecology:Cultural Exch	To better understand the astonishing diversity of tropical ecosystems. Investigates the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing. Introduces language, culture and society of people and communities in tropical countries of Central and South America. Also examines cultural perspectives and beliefs. Focuses on four areas: (1) background on history and present day society of Central or South America, introductory conversational Spanish for interacting with Central and South Americans; (2) living in Central and South America, community, family and education: visiting families and private and public schools; (3) debriefing and reflecting on Central and South America language and culture and (4) the location of Central and South America countries, the rain forests' impact on the world, climate, cultures and contributions to science.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 305 or SCN 494 (Tropical Ecosystems of Costa Rica)
SCN	307	Lrng frm Ntre: Biomcry & STEM	Introduces biomimicry, an emerging discipline that seeks to learn from nature to solve human problems. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land around, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 307 or SCN 494 (Learning from Nature: Biomimicry & STEM) OR Visiting University Student
SCN	308	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Provides opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists students in becoming more sensitive to and aware of earth systems and environmental change. Also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	309	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SCN	310	Biodiversity Conserv:Education	The world is in a period of unprecedented environmental change. Examines the causes and consequences of one of the most prominent forms of change in the modern era--changes in biological diversity. Explores the scientific evidence that shows how and why Earth's biological resources are being altered, how these changes impact ecosystems and the benefits various ecosystems provide to society. Describes the social and economic consequences of biodiversity loss and understands current management strategies used to curb changes in our planet's biological resources.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): minimum 45 hours; Credit is allowed for only SCN 310 or SCN 294 (Biodiversity Conservation) or SCN 494 (Biodiversity Conservation) OR Visiting University Student

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SCN	311	Nature Mindfully	Provides an opportunity for students to do in-depth exploration of the reciprocal relationship between human beings and the natural world. Introduces students to what is currently meant by the term ecopsychology, which studies the relationship between human beings and the natural world through ecological and psychological principles. Participants cultivate the knowledge and skills to integrate mindfulness-based best practices with natural settings. As a species, we came of age with nature, and a need for nature still resides within the architecture of our bodies and minds. Abundant research demonstrates physical and psychological benefits of interacting with nature.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SCN	400	Sustainabl for Sci Teacher	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Seeks sustainable solutions through science, technology and society acting at global and local levels. Covers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions. Focuses on how to teach sustainability concepts in the K-8 classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program OR Visiting University Student
SCN	401	SustainabilitySci,Tech&Society	Explores the challenges of sustaining human health and well-being on Earth due to human exploitation of natural resources. Prepares students to think and engage critically with the world around them. Seeks sustainable solutions through science, technology and society acting at global and local levels. Uncovers diverse approaches used by scientists, scholars and practitioners to study and assess human-environment interactions pertaining to sustainability challenges and solutions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): non-Teacher Preparation student; minimum junior standing; Credit is allowed for only SCN 400 or SCN 401 or SCN 494 (Sustainability Science, Technology, and Society) OR Visiting University Student
SCN	411	Science in Elementary Schools	Science education standards, curriculum, instructional and assessment strategies for all children.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 411 or SCN 411
SCN	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SCN	501	Ecol & Nat Hist Sonoran Desert	Gives students an opportunity to study the common plants and animals of the southwest Sonoran Desert. Study also includes their distribution, adaptations, behavior and ecology. Also includes the physical geography and geology of the region.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	502	Outdoor Education	Ignites question, wonder and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, individual and group projects and activities, students gain a wider and deeper appreciation of ecological, sustainability and science education. Explores the historical and philosophical foundations of the diverse emphases and uses of outdoor, experiential education and place-based education.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	504	Sonoran Desert Flora	Plants and plant communities support much of the diversity of life in the Sonoran Desert and the surrounding regions. Covers the fundamentals of ecology from the perspective of plants including population, community and ecosystem ecology. Also includes identification and classification of plants and plant communities in the Sonoran Desert region. Incorporates practical field exercises designed to acquaint the student with plant community analysis, classification and description.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	505	Tropical Ecology Cultural Exch	To better understand the astonishing diversity of tropical ecosystems, students work together to investigate the ecology and cultures of Neotropical ecosystems: how they were formed and how they are changing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	507	Lmng frm Ntre: Biomrcy & STEM	Offers an introduction to biomimicry, an emerging discipline that seeks to learn from nature to solve human problem. "Biomimicry" (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. With an emphasis on getting outside and exploring the land, focuses on observing, appreciating and learning from nature and natural systems in our local environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SCN	508	Urban Environmental Education	Environmental education and educators translate the complex web of earth systems science, sustainability, environmental issues and environmental change for the public. Gives students an opportunity to understand and experience the interface between humans and the planet to facilitate ecological literacy and ecologically responsible behavior. Assists in becoming more sensitive to and aware of earth systems and environmental change and also provides the knowledge, skills and motivation for understanding sustainable living in the urban environment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	509	Environmental Education Prjct	Covers topics in environmental education that assist students with being able to learn about and investigate their environment in order to make intelligent and informed decisions.	Y	LEL	Y	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SCN	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SDO	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	501	US Law & Legal Analysis-Master	Introduces the U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete extensive written legal analysis exercises, draft case briefs and complete discussion board posts critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Human Resources and Employment Law, Master of Laws, or Master of Legal Studies student; Credit is allowed for only SDO 501 or SDO 598 (US Law & Legal Analysis-Masters)
SDO	503	Prof Writing and Communication	Communication and writing strategies, techniques and genres for use in professional business environments. Presents techniques for crafting and using appropriate workplace grammar and spelling; written structure for memos, emails, reports and presentations; and communication style in a professional setting. Students practice and refine oral communication and interpersonal business communication skills.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 503 or SDO 598 (Prof Writing & Comm-Mast)
SDO	510	Business Organization: Masters	Covers the primary forms of business organizations: partnerships, limited partnerships, limited liability companies and corporations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Master of Human Resources & Employment Law, Master of Laws, or Master of Legal Studies student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit is allowed for only SDO 510 or SDO 598 (Business Organizations-Mast)
SDO	511	Admin Agencies/Reg: Masters	Begins with an accelerated introduction to federal administrative agencies, the sources and boundaries of their authority, and options for redress for parties aggrieved by administrative actions. Also briefly examines state administrative agencies in the same light.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 511 or SDO 598 (Admin Agencies & Reg-Masters)
SDO	515	Criminal Law: Masters	Reviews and analyzes different principles of the fundamentals of criminal law, including: the principles of punishment, burdens of proof, actus reus (acts and omissions), mens rea (mental states), presumptions, causation, strict liability, defenses and homicide	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 515 or SDO 598 (Criminal Law-Mast)
SDO	516	Criminal Procedure: Masters	Consider the basic principles of criminal procedure and the methods by which the criminal justice system functions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s):SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 516 or SDO 598 (Criminal Procedure-Masters)

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SDO	518	Fund of Contract Law: Masters	Explores the fundamental principles of contract law under the common-law and Uniform Commercial Code statutory provisions. Focuses on issues of contract formation and interpretation, defenses to enforcement, warranties and conditions, and remedies for breach of contract.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mast); Credit allowed for only SDO 518 or SDO 598 (Fundamentals of Contract Law-Mast)
SDO	525	Tort Law: Masters	High-level introduction to torts. Covers various types of tort causes of action, their various elements, defenses and factual patterns that fit those specific tort causes of action.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 525 or SDO 598 (Tort Law-Masters)
SDO	529	US Constitutional Law: Masters	Surveys the law surrounding the allocation of governmental power between federal, state and tribal governments and the distribution of governmental authority within the federal government. It is a pervasive subject in the sense that such constitutional questions can emerge in such disparate areas of legal practice as immigration, corporations and securities, family law, criminal law, banking and insurance. Deals with individual rights protected by the U.S. Constitution. Specific areas include due process, freedom of expression and religion, and equal protection.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598(US Law/Legal Analysis-Masters); Credit allowed for only SDO 529 or SDO 598(US Constitutional Law-Masters)
SDO	531	Employment Law: Masters	Covers employment law topics including testing, privacy, FLSA, benefits, rights to compensation, workplace emotional injuries, termination, and employer risk management strategies.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 531 or SDO 598 (Employment Law-Masters)
SDO	535	Negotiation: Masters	Offers a basic introduction to the concepts, instruments, functions and theories of modern negotiation giving students some of the information needed to better understand the dynamics of interpersonal, business and legally related negotiation. Begins with a discussion of negotiations as interpersonal communication. Examines avoiding exploitation in mixed-motive exchanges. Explores distributive bargaining strengths and weaknesses. Examines the use of integrative bargaining techniques and those settings in which they might be best used. Finally, reviews the landscape of legal jurisprudence in order to apply appropriate ideologies and techniques to the complex adaptive system of American business and personal interaction in the shadow of the law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): Human Resources & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Master); Credit allowed for only SDO 535 or SDO 598 (Negotiation-Master)
SDO	541	HR & Employment Law: Masters	Provides an introduction to the management of human resources, in an overview perspective. Students also gain a general understanding of the fundamentals of human resource management and employment laws and policies, and how they apply to organizations. Topics covered are: compensation and benefits, staffing, training and development, performance appraisals, organizational management, policy and maintaining effective relationships with employees. Exposes students to the dynamics of how the human resource department and the company strategically work together to balance employee morale and return on investment. Initiates a well-rounded learning experience of HRM and the effects on business operations.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or 598 (US Law/Legal Analysis-Masters); Credit is allowed for SDO 541 or LAW 598/SDO 598 (HR & Employment Law)
SDO	542	Regulation of Small Businesses	Introduces the wide array of regulations that businesses must navigate. (licensure, taxation, insurance and employment rules as well as other laws and regulations triggered by commerce). Additionally, provides a background into the agencies that create and enforce many of the regulations that impact small business and the legal basis for their ability to do so.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 542 or SDO 598 (Regulation of Small Business)

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SDO	543	Business Relationships: Masters	Introduces the legal frameworks that impact how business and individuals work together to achieve business and individual goals. Topics covered include contracts, strategic partnerships, IP licensing arrangements, franchising, and others.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 543 or SDO 598 (Business Relationships)
SDO	544	Evidence: Masters	Focuses on the principles and practices governing the competency of witnesses and presentation of evidence, including the rules of exclusion and roles of lawyer, judge and jury under the adversary system.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 531 or SDO 598 (Evidence-Masters)
SDO	545	Arbitration: Masters	Focuses upon the law, policy and practices relating to arbitration process, using a third-party neutral to render a decision for disputing parties, as it is utilized in consumer and commercial sectors. The class will focus on the Federal Arbitration Act, important policy implications of arbitration, and issues that organizations and individuals should consider when both contemplating entering an arbitration agreement and participating in an arbitration process.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 545 or SDO 598 (Arbitration-Masters)
SDO	546	Mediation: Masters	Studies the process in which a trained neutral third party assists others in resolving a dispute or planning a transaction. Trains students in basic mediation skills through readings, lectures, video demonstrations and simulations, and discussions.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 546 or SDO 598 (Mediation-Masters)
SDO	547	Land Use Regulation: Masters	Surveys modern land use planning with an emphasis on the legal framework used to resolve conflicting land uses	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit allowed for only SDO 547 or SDO 598 (Land Use Regulation-Masters)
SDO	548	Water Law: Masters	Provides an introductory survey of the fundamental concepts underlying water law, as well as the necessary legal foundation for understanding sustainable water policy and management.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 548 or SDO 598 (Water Law-Masters)
SDO	549	Family Law: Masters	Primarily focuses on the law of marriage and divorce including the law governing entry into marriage, the legal consequences of being married, and the dissolution of the marital status. Topics include: the law of marriage, child custody, child support, alimony, division of property, the rights and obligations of unmarried cohabitants, and the establishment of paternity rights and obligations. In addition, touches upon issues of domestic violence, child abuse and neglect and assisted reproductive technologies. Relevant Arizona Statutes are referred to throughout the course where appropriate as examples, but the course is not limited to Arizona law.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Employment Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Practice) MLS student; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 549 or SDO 598 (Family Law-Masters)
SDO	551	Duties, Obligation and Rights	Examines the fundamental employee rights and employer obligations established by federal law and encompasses an examination of the National Labor Relations Act; the Worker Adjustment and Retraining Notification Act; the Equal Pay Act; the Occupational Safety and Health Administration; Worker's Compensation; the Family Medical Leave Act; the Pregnancy Discrimination Act; and the Genetic Information Nondiscrimination Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 551 or SDO 598 (Duties, Oblig & Rts in Wplc-Mstrs)

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SDO	552	Employ Discrimination: Masters	Focuses primarily on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 552 or SDO 598 (Empl Discrimination - Mstrs)
SDO	555	Pro Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry at the professional level, from both a legal and a business perspective. Exposes students to professional sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 555 or SDO 598 (Prof Sports Law - Mstrs)
SDO	556	Sports Analytics: Masters	Allows students to develop and apply analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 556 or SDO 598 (Sports Analytics - Mstrs)
SDO	557	Sport Business Strategy:Master	Explores the sports business ecosystem and the various stakeholders who play a role in sports business. Beyond stakeholders, the course discusses the various applications within sports business from marketing to venues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs);Credit is allowed for only SDO 557 or SDO 598 (Sports Business Strategy-Mstrs)
SDO	558	Copyright Law: Masters	Includes topics such as copyright bundle of rights, registration, remedies, fair use, work made for hire contracts, licensing and assignments.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 558 or SDO 598 (Copyright Law - Masters)
SDO	559	Trademark Law: Masters	Trademark law is indisputably the most fun area of the law. This course covers, from a practical perspective, the basis and use of the trademark system; the requirements for, process of obtaining, opposing and enforcing trademarks and related rights; and the overlapping federal, state and common law rights and doctrines involved in trademark and unfair competition law including cybersquatting, false advertising and the right of publicity.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 559 or SDO 598 (TM & Unfair Competition Law-Mstrs)
SDO	566	Adv Sports Law: Masters	Studies law, policy and problem solving in the context of the sports industry, at all levels. Exposes students to professional, amateur and international sports law issues, examining those issues in a problem-focused manner. A variety of industry professionals give the lectures, and each section focuses on a specific topic within the realm of sports. The requirements of the course are designed to challenge the students.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Stds MLS, or Legal Stds (PatentPrac) MLS stdt; SDO 598 (SprtsLaw-Mstr); Pre- or coreq(s):SDO 501 or SDO 598 (US Law/Legal Anlyls-Mstr); Credit allowed for only SDO 559 or LAW 598/SDO 598 (AdvTopics SprtsLaw)
SDO	567	Adv Criminal Law: Masters	Considers principles of criminal procedure with analytical emphasis on the right to counsel during trial, appellate and post-conviction proceedings. Also examines developments in the criminal justice system derived from the study of wrongful convictions during the Innocence Era. Students read portions of a summary treatise relevant to specific subject areas of criminal law and procedure, case law, law review articles, periodicals and case materials.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Stud MLS, or Legal Stud (Patent Prac) MLS std; SDO 515 or 598 (Crim Law-Mstrs); Pre- or coreq(s): SDO 501 or 598 (US Law/Legal Anly-Mstrs); Credit is allowed for SDO 567 or 598 (Adv. Top in Crim Law-Mstrs)
SDO	568	Leg Princ/Bus Pract: Masters	Survey course covers various substantive topics with a focus on applying the basic legal principles covered via court decisions and other reading assignments. Requires a basic understanding of "black letter law," but this is not a course that asks MLS students to provide the same level of nuanced legal analysis as would be asked of law students. Instead, merging business acumen and legal analysis is valued above a depth of legal understanding.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; Pre- or coreq(s): SDO 501 or SDO 598 (US Law/Legal Analysis-Mstrs); Credit is allowed for only SDO 568 or SDO 598 (Integ Leg Pp & Busi Pract-Mstrs)

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SDO	569	Adv HR & Employment Law:Master	Covers the laws that govern the rights and duties between employers and employees. Goes beyond knowledge of the law and focuses on the application of the legal knowledge to scenarios HR professionals encounter in both the private and public sector.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prereq(s): HR & Empl Law MHREL, Laws LLM, Legal Studies MLS, or Legal Studies (Patent Prac) MLS stdnt; SDO 552 or 598 (Empl Law); Pre- or coreq(s): SDO 501 or 598 (US Law/Lgl Anly); Credit is allowed for only SDO 569 or SDO 598 (Adv Top in HR & Emp Law)
SDO	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SDO	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): Master of Human Resources and Employment Law or Master of Legal Studies student
SDO	685	MHREL Capstone	Develops a perspective on how the law interacts and impacts the human resources industry. Understanding and applying solutions for rapidly changing legal requirements related to employment is an essential part of business success. Analyzing the current HR legal environment to understand and plan for risk, opportunities and requirements is the starting point for creating a compliant and effective HR system. Students evaluate the impact of legal changes within Arizona, the United States and internationally, placing emphasis on ethical decision making. Students learn how to successfully navigate legal changes within the employment realm and manage relationships with employee groups.	N	PRA	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Human Resources and Employment Law MHREL student; Pre- or corequisite(s): SDO 501
SDO	701	Contract Review/Structure:Mast	Helps students learn how to work with contracts by exploring the general parts of a contract, the purposes of contracts, and reviewing contracts with an eye on supporting business interests. Although students learn some drafting techniques, the focus of the course is not on drafting entire contracts from scratch. Rather, students learn how to review contracts within a specific framework and recognize how contract language affects a party's legal rights.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): LAW 515 or SDO 518; SDO 501 or SDO 598 (US Law/Legal Analysis-Masters); Credit is allowed for only SDO 701 or SDO 598 (Contract Review & Structure for Prof - Masters)

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SEC	501	Solar Engr Commercialization I	Examines the fundamentals of the solar energy enterprise regarded from a systems engineering perspective. Examines solar energy technology, economic issues and policy matters and reviews the impact of these three areas on the design process and system operation of photovoltaic systems at the residential and commercial scales. Objectives include learning the basic principles in photovoltaic system design; thinking critically and seriously about the nature of solar energy and its use; formulating views and insights regarding energy resources, conservation, photovoltaic economics, government subsidies; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SEC 501 or SEC 598 (PV Systems Engineering)
SEC	502	Solar Engr CommercializationII	Examines the fundamentals of the solar energy enterprise at the utility scale--the components, the design process, the economic issues, and the policy matters in large-scale photovoltaic systems--in both the design of these systems (both central plant and aggregated forms) and their interface with the existing (and future) electrical grid. The course educational Objectives include: learning the principles in utility-scale photovoltaic system design; thinking critically and seriously about the interaction of photovoltaic systems with the national grid; formulating views and insights regarding energy resources, conservation, economics, government incentives, and so on, at the utility scale; and expressing and defending these views orally and in writing. Includes lectures, case studies, interactive classroom projects and guest speakers.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): SEC 501; Credit is allowed for only SEC 502 or SEC 598 (Solar Commercialization)
SEC	510	Solar Energy and Policy	Elucidates and amplifies the importance, role and mechanisms of solar energy policy. Underscores the significance of policy in the successful deployment of solar energy. Complements other courses in the curriculum of the Professional Science Masters (PSM) in Solar Energy, which is largely centered on engineering concepts and techniques. Content is guided by the principle that technical considerations alone are inadequate to stimulate future expansion of solar energy. Additionally, it is stressed that policy considerations are critical to any potential transition to a solar energy economy. Typically taken in conjunction with DC summer workshop "Science Outside the Lab," but may be taken by others as stand-alone course. Course consists of lectures and discussions of policy instruments at the national, state and local scales. Visiting experts from the energy industry provide their personal experience and real-world perspective.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU 510 or GCU 598 (Solar Energy & Public Policy) or SEC 510 or SEC 598 (Solar Energy & Public Policy)
SEC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	588	Solar Energy Colloquium	Discussion-oriented class focusing on topical issues in solar energy. Knowledge of thermodynamics or electric power systems is recommended to succeed in this course.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	3		Prerequisite(s): Engineering graduate student; Credit is allowed for only MAE 588 or SEC 588
SEC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	YGB	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SEC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	School for Engineering of Matter,Transport & Enrgy	1-4		

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SED	111	Exploration Science Teaching	General overview of the profession of the science educator with a look at student, teachers, curricula, and classroom techniques.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
SED	322	Classroom Leadership/Sec Schls	Theories and practices for managing and maintaining secondary classrooms for learning; strategies for home/school communication; and leadership roles for teachers.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105, or 107 with C or better
SED	396	Clinical Experience I	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	397	Clinical Experience II	Applies course content in a middle/secondary school setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	0-1		Prerequisite(s): admission to the Professional Program
SED	398	Clinical Experience	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): admission to the Professional Program
SED	403	SED PrinciplesCurriculumMethod	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in the secondary school. Requires observation/participation.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to Teacher Preparation program; minimum junior standing
SED	464	Middle-School Curr/Org	Educational implications of the characteristics of a diverse adolescent population on middle-level organization and components, curriculum, instructional strategies, assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	478	Student Teaching: SED 6-12	Student teaching in middle/secondary setting grades 6-12: synthesized experience in curriculum, instruction, assessment and classroom management.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3-15		Prerequisite(s): admission to the Professional Program
SED	480	Spec Mthds Teaching Soc Studie	Interdisciplinary approaches; production and collection of materials.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	481	English Teach Methods/Sec Schl	Instructional, organizational, and presentation methods for English in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	482	Science Teaching Methods	Methods of instruction, organization, and assessment of science for secondary and middle grade schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SED	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SED	496	Clinical Experience III	Applies course content in middle/secondary setting grades 6-12. Emphasizes observation, pupil management, planning and delivering instruction, and assessment.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): admission to the Professional Program
SED	501	Intro to Effective Instruction	Introductory course for certification program in secondary education. Emphasizes developing basic classroom management, instruction, and evaluation. Includes a field assignment of at least 120 hours.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	510	General Methods & Assessment	Provides an overview and application of teaching methods, unit planning, and research for secondary teachers.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	4		Prerequisite(s): SED 511, 512, 513 or 514
SED	511	ELA Methods and Assessment	Methods in design, instruction and assessment of English Language Arts (ELA) for secondary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	512	Sec Math Methods & Assessments	Mathematical knowledge for learning, teaching and assessment in grades 7 through 12. Focuses on methods for developing conceptual understanding of mathematics concepts through inductive, inquiry-based, problem-centered learning and teaching. Emphasizes concept development through visualization using concrete, digital and real-world representations; purposeful questions; and generalization of patterns. Focuses on theories of mathematics learning; design of learning sequences concrete-to-pictorial-to-abstract; visible thinking routines; teaching rehearsals; brain science messages for mathematics learning; and practices for creating equitable mathematics learning environments and students' positive growth mindset.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	513	Sci Tchng Methods For Sec Sch	Focuses on inquiry-based processes, lesson design, teaching methods and content overview to support science instruction in secondary and middle grades.	N	LEL	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	4		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	514	Methods Teaching Sec Soc Sci	Methods in design, instruction and assessment of the social studies subjects for secondary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	4		Prerequisite(s): degree- or nondegree seeking graduate student; admission to the secondary teacher preparation professional program
SED	520	Sci Mthds Early Adolescence	Examines the interrelationships between theory and practice in teaching science.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SED	522	Second Schl Curriculum Develop	Social processes, issues, principles, patterns, and procedures in curriculum development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: Graduate student
SED	533	Mid/Sec Instr, Mgmt & Assess	Analyses of procedures, methods, techniques, and experiments in teaching in secondary schools.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Must be a graduate student
SED	544	Creating Classroom Climates	Emphasizes classroom management and instructional strategies for establishing positive classroom climates that facilitate learning. Includes field experience.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	547	Teaching Math-Middle Grades	Strategies and methodologies to teach mathematics in the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	557	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556
SED	560	Teaching Math with Technology	Strategies and methodologies to teach mathematics with technology, focusing mainly on the middle grades (5-9).	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	561	Teaching Sci with Technology	Strategies and methodologies for effective technology-enhanced science classrooms and improved learning. Models student-driven inquiry teaching throughout the course.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	567	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
SED	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
SED	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
SED	576	Internship III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
SED	578	Residency/Student Teaching SED	Student teaching in a secondary (SED) school classroom. Synthesized experience in curriculum, instruction, and classroom management. This course builds upon previous professional experiences to extend learning in a classroom setting and to obtain practice and feedback to continuously improve educator knowledge and skills.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SED	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
SED	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
SER	215	Software Enterprise: Pers Proc	Software engineering; personal software processes for individual professionalism; time and defect estimation, yield, and productivity. Software tools. Project based.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better
SER	216	Sftware Enterpr:PersProc&Qual	Introduces software engineering, software lifecycle models, personal software processes for individual professionalism, time and defect estimation, yield and productivity, software testing and quality management.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Pre- or corequisite(s): SER 222 with C or better if completed OR Visiting University Student

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SER	221	Pgmng Lang & Their Exec Evt	Introduces the fundamental programming language concepts of data, type, control, abstraction, and structure; software development and execution environments; programming language paradigms.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CST 200 or SER 200 with C or better; Credit is allowed for only CST 220 or SER 221
SER	222	Dsgn & Analy: Data Strs & Algo	Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; MAT 243 or 300 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Master of Computer Science student OR Visiting University Student
SER	232	Computer Systems Fundamentals	Logic design, number systems and arithmetic, Boolean algebra, digital systems components and hardware description languages.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	CS	Pre- or corequisite(s): SER 100 or CSE 110; MAT 117, 170, 171, 210, 251, 265, or 270 with C or better if completed or ALEKS score of 61 or higher; Credit is allowed for only CST 150 or SER 232 OR Visiting University Student
SER	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	315	Software Enterprise: Dsgn&Proc	Software process from the design perspective. Engineering design process, user-centered design and software safety design. User interface, software architecture and design patterns and software design constraints.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 222 with C or better; Pre- or corequisite(s): FSE 100 with C or better if completed; SER 216 with C or better if completed OR Visiting University Student
SER	316	Software Enterprise: Cnstrct	Best practices in software construction in the context of a team project, including refactoring, defensive programming, unit testing, and configuration and release management.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 216 with C or better; SER 222 with C or better OR Visiting University Student
SER	321	Software Systems	Design and implementation of distributed software components; process and memory management underlying software applications; sockets, protocols, threads, XML, serialization, reflection, security, and events.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Pre- or corequisite(s): SER 334 with C or better if completed; Credit is allowed for only CST 420 or SER 321 OR Visiting University Student
SER	322	Database Management	Fundamental methods in modeling and managing data-oriented systems. Relational, object and hierarchical data modeling techniques. Query languages including SQL. Semantics of transaction processing. Modern trends in data management including unstructured data, NoSQL and Graph databases.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; Credit is allowed for only ACO 220 or ACO 320 or CSE 412 or IFT 300 (or IFT 433) or SER 322 OR Visiting University Student
SER	332	Intro Graphics & Game Devel	Foundations of graphics as used in modern rendering and basic principles of the game development pipeline. Graphics and math concepts and their application in games, graphics and visualization.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better
SER	334	Operating Systems&System Prog	Fundamentals of operating systems: run-time environments, process management, scheduling, synchronization techniques, memory management and file management. Introduces programming concepts and tools for developing operating system modules, system utilities and low-level applications in POSIX environments.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 with C or better; Pre- or corequisite(s): SER 222 with C or better if completed OR Software Engineering MS or Master of Computer Science student OR Visiting University Student
SER	335	Engin Secure Software Systems	Software engineering principles applied to securing software systems. Software life cycle processes contextualized to security needs of software. Software requirements analysis and software verification and validation practices for security. Software architecture security assessment. Software engineering organization policies for security, including threat modeling and assessment, vulnerability classification, risk management, and preparing for security audits.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 216 with C or better; Corequisite(s): SER 315; SER 334
SER	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		
SER	401	Computing Capstone I	First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better; senior standing or postbaccalaureate
SER	402	Computing Capstone II	Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier coursework.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 401 with C or better

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SER	415	Software Enterprise: Inception	Third course in the four-course enterprise sequence. Students perform inception (project launch) and elaboration (requirements analysis) activities in project teams.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3	L	Prerequisite(s): Software Engineering BS major; ENG 101, 105 OR 107 with C or better; SER 315 with C or better OR Visiting University Student
SER	416	Software Enterprise: Proj&Proc	Project-centric course focusing on applying software process, project management, and technical leadership. Final course in the software enterprise sequence.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering BS major; SER 316 with C or better
SER	421	Web-Based Applications	Distributed Web applications, their design, architecture and supporting technologies; user-interaction concepts and technologies; design and implementation of software servers for Web systems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	422	Web Application Programming	Design and implementation of Web application. Languages, frameworks, technologies, tools and methods used to realize Web client and server solutions. Approaches for securing, testing as well as determining the quality and reliability of Web applications.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): IFT 433 or SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	423	Mobile Systems	Mobile applications, their architecture, design, and supporting technologies; mobile device operating systems and frameworks; synchronizing mobile applications, support for inter-application data-exchange; accessing and manipulating special-purpose device capability such as location, orientation and input modality. Practices for securing mobile runtimes and optimizing run-time performance.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 321 with C or better OR Software Engineering MS student OR Engineering Science (Software Engineering) MSE student OR Visiting University Student
SER	431	Advanced Graphics	Topics in real-time rendering and graphics hardware. Uses graphics processing unit hardware to implement rendering of higher-order surfaces and special effects.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	432	Game Engine Architecture	Functional requirements of a modern game engine architecture. Students work in teams to develop advanced features for a game engine.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 332 with C or better or graduate Software Engineering student
SER	450	Computer Architecture	Price/performance analysis, instruction set design, RISC/CISC, processor design and implementation, pipelining, instruction-level parallelism, memory hierarchy, storage and I/O systems.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 230 or SER 250 with C or better OR Software Engineering graduate student
SER	456	Embedded Infr.Snsrs&Actuators	Electromechanical sensors and electrical actuators, analog-to-digital and digital-to-analog conversion, hardware and software interfaces for embedded systems.	N	LEL	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): CSE 205 or SER 200 with C or better; SER 232 with C or better OR Software Engineering MS student; Credit is allowed for only SER 456 or CST 598 (Embedded Interfaces: Sensors and Actuators) OR Visiting University Student
SER	460	Software Analysis and Design	Object-oriented and structured analysis and design; software architecture and design patterns; component-based development; software safety and reliability.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or better: Comp Sci, Geo Info Sci, or Comp Sys Eng major; CSE 360 OR Sftwr Eng major; SER 315 or 316; SER 222 OR Comp Sci & Eng, Sftwr Eng, or online CS nondegree grad stndt; Credit allowed for CSE 460/SER 460 OR Visiting University Student
SER	463	Intro Human Computer Interactn	Design, evaluate, and implement interactive software intended for human use.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereqs w/C or btr: Cmp Sci BS or Cmp Sys Eng BSE or GIS BS; CSE 310 OR Dig Ctr (Mda Prcs) BA/BS or Inf BS; CPI 310 OR Sftwr Eng BS; SER 315 or 316; SER 222 OR Cmp Sci & Eng or Sftwr Eng grd st; Crdt only CSE 463 or SER 463 OR Visiting University Student
SER	464	Software QA and Testing	Software quality assurance (SQA), software quality metrics, software configuration management, software verification and validation, reviews, inspections, understanding software testing process, functional testing, structural testing, model-based testing, integration, system, and regression testing techniques, software life cycle models and software testing, testing distributed software, bug management, and use of testing tools.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	3		Prereq(s) w/C or better: Comp Sci or Comp Sys Engr mjr; CSE 360 OR Sftwr Engr mjr; SER 315 or 316; SER 222 OR CompSci & Engr or Sftwr Engr grad stndt; Credit allowed for CSE 464 or CSE 598(SftwrQualAsm&Tstng) or SER 464 OR Visiting University Student
SER	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		

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SER	486	Embedded C Programming	Programming concepts for embedded systems. Interfacing and controlling LED, LCD, keypads, buttons. Embedded OS concepts. Timers and interrupts. Serial communication.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 222 with C or better; SER 321 with C or better OR Software Engineering graduate student OR Visiting University Student
SER	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6		Prerequisite(s): Barrett Honors student
SER	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SER	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): SER 334 with C or better OR Visiting University Student
SER	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-3		
SER	501	Adv Data Struct and Algorithms	Advanced algorithms and how they are effectively applied to solve problems. Algorithm design, analysis, classification, optimization, and application. Practice implementing and employing algorithms to solve realistic problems.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	502	Languages and Prog Paradigms	Emerging programming languages, their design, description, implementation, and advanced features; API design, including facilities for creating secure distributed applications, facilities supporting software services, naming and composition; language paradigms and the resulting implications on execution; run-time systems and storage management; approaches to compilation and execution. Requires ability to program in an object-oriented programming language and knowledge of data structures, algorithms, and analysis.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	515	Foundations of Software Engin	Software engineering overview, with an emphasis on component and service-based architectures, reliability, safety, dependability and software reuse. Introduces software engineering research methods and critical inquiry.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS graduate student
SER	516	Software Agility	Focuses on quality software construction principles in an agile community context. Agile methods, open source communities, coding best practices, configuration management, software delivery and building in quality.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student
SER	517	Software Factory Capstone	One-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student
SER	518	Software Factory II	Second in a two-semester capstone culminating experience for graduate students. Student teams work through concurrent product and service offering lifecycles in a project context. Covers concepts including opportunity assessment, risk management, technology evaluation, licensing models, resource planning, delivery models such as hosted, turnkey, and Software as a Service (SaaS), technology acquisition, outsourcing, governance, quality assurance, software certification, and continuous process improvement.	N	LEL	N	GNA	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): SER 517
SER	531	Semantic Web Engineering	State-of-the-art semantics-based approaches and tools that can be leveraged to enrich and enhance today's big data. Covers approaches to ontology engineering, searching and filtering relevant information, representing big data, modern applications of these methods and techniques for Web-based intelligent applications and services. Discusses applications of semantic technology that could improve the processing of big data.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student; Credit is allowed for only SER 594 (Semantic Web) or CST 594 (Semantic Web) or SER 531
SER	533	Database-Centric Enter App Dev	Solutions for enterprise software systems based on relational database technology. Persistence solutions in middleware frameworks. O/R, XML, and scalability issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	540	Internet-Enabled Embedded Dev	Accessing hardware devices through Internet, including Applets, HTTP, custom byte streams, XML-RPC, SOAP. Building network-based applications that interface hardware.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student

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SER	554	Distributed Computing	Topics in distributed systems, including communications, distributed operating systems, fault-tolerance, and performance issues.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Fulton Engineering graduate student
SER	574	Adv Software Design	Presents some of the latest advancements in the area of software design and architecture, aiming to help students develop analytical thinking skills which are essential to a successful career in software engineering. Modeling has become the primary communication vehicle in many areas of software engineering, and particularly in the intersection of software and systems engineering. Presents different approaches to software modeling and design for applications in systems engineering.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	3		Prerequisite(s): Software Engineering MS student; SER 515 with C or better; Credit is allowed for only SER 574 or SER 594 (Advanced Software Design)
SER	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Ira A. Fulton Schools of Engineering	Software Engineering	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Software Engineering	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SER	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Ira A. Fulton Schools of Engineering	Software Engineering	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	100	Introduction to Exploration	Science and engineering of Earth, solar system, and space exploration. Experimental design, engineering design; teaming; the professions of science and engineering.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): ALEKS score of 61 or higher or Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed OR Visiting University Student
SES	106	Habitable Worlds	Are we alone in the Universe? If so, why? If not, where are our cosmic cousins? Such questions, once the domain of science fiction, are on the verge of being answered with science facts. Astronomers are discovering planets around other stars. Planetary scientists are exploring the worlds in our solar system. Biologists are unlocking the secrets of metabolism and evolution. Geoscientists are determining how the Earth supports life. And as we struggle to build a sustainable future for ourselves, all of us are finding out how technologically advanced civilizations rise and how they might fall. This course surveys these topics. In the process, students master basic concepts from across the major areas of science and learn what makes the Earth a habitable world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	
SES	107	A Solar System Journey	Introduces modern planetary science—the exploration of our solar system by astronomers, geologists, chemists, physicists, engineers, astronauts and even biologists. Studies the historical and modern science of the Sun, planets, moons, rings, asteroids and comets in our solar system, and about new planets being found in other solar systems. Covers the scientific method as well as the specific techniques used in modern planetary science and space exploration that enable us to apply what we learn about our solar system neighbors to the study of our home planet, and vice versa.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SG	Credit is allowed for only SES 107 or SES 194 (A Solar System Journey)

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SES	121	Earth, Solar System & Universe	The Earth, solar system and universe are diverse and dynamic, featuring galaxies, solar systems, suns, planets and moons. Each type of feature is characterized by a suite of processes and features, such as volcanoes, landslides and climate. As scientists and engineers, we want to understand what is going on in our world. Understanding past events helps begin to predict future events. With the Earth, we examine past events and current natural processes to understand how this past and these processes affect humans. Accordingly, this course examines the processes, materials and features observed and inferred on the Earth, in the Solar System, and in the Universe. The course is purposely designed to be rather holistic, exploring concepts from stellar evolution, atmosphere and oceans on Earth and in extraterrestrial objects, plate tectonics, volcanoes and mountain building. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	SQ	
SES	122	History of Earth&Solar System	The Earth and solar system have a long and interesting history, spanning nearly five billion years. Earth and other objects in the solar system have evolved over time, punctuated by a series of events, such as mountain building, volcanic eruptions, impacts and extinctions. As scientists and engineers, we want to understand what events have occurred in our world and which aspects directly affect us or are most interesting. Understanding past events helps us comprehend what has happened and begin to predict future events. With the Earth, examines past events and current natural processes to understand how this past and these processes affect humans. Accordingly, examines the history of the Earth and solar system in the context of the processes, materials and features that can be observed and inferred. Explores the history of the Earth and solar system from a broad, interdisciplinary, perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	123	Earth,Solar Sys & Universe Lab	Studies astronomical and geological processes through observations and measurements. Requires field trips and evening telescopic observing. Both SES 121 and SES 123 must be taken together to secure SQ General Studies credit.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1	SQ	Pre- or corequisite(s): SES 121 with C or better if completed OR Visiting University Student
SES	124	History Earth&Solar System Lab	Studies astronomical and geological processes and life through observations and measurements. Requires field trips and evening telescopic observing.	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 122 with C or better if completed
SES	126	Exploration of the Universe	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. Don't be surprised if class includes stories about how ASU research is proceeding, or how a lesson in class is relevant to some research experience. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
SES	128	Expl of the Universe Lab	Introduces the basic principles of modern astronomy, with a focus on "Exploration Science," or the methods by which we explore our planet, our solar system, other stars, and even other galaxies. How do we explore? What is the "scientific method"? How is modern science carried out? Study of such questions helps form a solid foundational core for a major in the science of astrophysics--a major that spans many aspects of the universe as a whole. A key goal is for you to be excited and informed about the incredible era of Earth and space exploration that we're all a part of!	N	LAB	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): SES 123 with C or better; Pre- or corequisite(s): SES 126 with C or better if completed
SES	141	Energy in Everyday Life	Energy permeates our everyday life and is at the heart of understanding how the world around us works. What is energy? How is energy used in the biological, chemical, electrical and mechanical systems that impact our daily lives? What would our world be like if there was a nearly infinite supply of inexpensive energy? This multidisciplinary survey course offers learners the opportunity to master practical job skills: the ability to observe, gather data, and think critically to make order-of-magnitude estimates.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4	SQ	Credit is allowed for only SES 141 or SES 194 (Energy in Everyday Life) OR Visiting University Student

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SES	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		
SES	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	220	Biology of a Changing Earth	Offers a broad survey of basic biological principles, with an emphasis on aspects of biology that are particularly important in the context of interdisciplinary Earth and environmental sciences. Explores how life on Earth has emerged and diversified and how the ubiquity of this life affects the Earth's chemistry, land surface and climate. As many of our current environmental issues are a direct consequence of human impacts on organismal physiology, biodiversity patterns, or ecosystem processes, strongly focuses on application of biological knowledge. Includes weekly laboratory exercises.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better
SES	225	Global Biogeochemical Cycles	Exposes students to the coupled biogeochemical cycles that link Earth's biosphere, hydrosphere, atmosphere and lithosphere. These cycles operate at the very long time-scales that stabilize Earth's climate and the very short time-scales that support the biosphere. Explores processes and changes through time and the human influence on these systems. Topics include: the rock cycle and the hydrologic cycle; biogeochemical systems; carbon, nutrient and oxygen cycles; global climate change; human forcing on the ecosphere; and future climate scenarios. Strongly emphasizes developing an understanding of the complex interactions among different systems and processes. Specific student interests inform some of the topics covered, and participation in the discussions and analyses are crucial to the success of this class. Develops understanding through readings, class discussion, in-class problem solving, written projects and student presentations.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 121 with C or better; Pre- or corequisite(s): CHM 101, 113, or 114 with C or better if completed
SES	230	Coding for Exploration	A series of lectures and computer labs on data processing and analysis in Earth and space sciences using Python. Introduces programming with scratch and python. Numerical methods for data analytics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3	CS	Prerequisite(s): AST 111 or GLG 101 or SES 121 with C or better; Pre- or corequisite(s): MAT 265 or 270 with C or better if completed OR Visiting University Student
SES	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	307	Space Works I	Provides an introduction to: (1) project design and fabrication, including the application of SolidWorks, training and use of the ASU Student Machine Shop, and the implementation of a project from prototype through completion within a dedicated maker space; (2) analytical modeling and its application to planetary exploration; (3) space mission design and implementation; and (4) leadership training, including project organization, schedules, budgets and proposal writing. A key element includes interacting with and learning from engineers and scientists working on space projects.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre- or corequisite(s): MAT 265 or 270 with C or better if completed; Credit is allowed for only SES 307 or SES 394 (ASU SpaceWorks Project Level 1:Applied Design....) OR Visiting University Student
SES	311	Essentials of Astrobiology	Origin and evolution of life on Earth. Strategies to explore for life in the cosmos. Possible field trips to explore regional geological analogues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): BIO 181 (188), CHM 113 or PHY 121; MAT 265 or 270
SES	330	Electronics Instrumentation	Applied principles of electronics and mechanical design as used by the modern instrument builder, using a systematic approach to the design process: Identify a scientific problem, develop specifications necessary to solve the problem, develop a prototype solution, test solution for plausibility, break down problem into components, design and build the solution then test in a relevant environment. Builds on introduction to circuits and engineering concepts from prerequisite courses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	4		Prerequisite(s): EEE 202 with C or better; MAE 201 or 212 with C or better; PHY 131 and 132 with C or better (or PHY 151 with C or better) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SES	350	Eng Syst & Exper Problem Solv	Introduces integration of scientific and engineering computational methods into scientific research and successful exploration. Provides an active, project-based environment for learning science and engineering by means of a common set of computational tools. Also provides a detailed overview of procedural and object-oriented programming with an emphasis on problem solving. Students solve problems by developing software in an interpreted language (Python). Problems may include visualizing data, interfacing with hardware, or solving numeric problems. Covers procedural programming concepts including data types, variables, control structures, arrays, and data I/O. Covers object-oriented programming concepts including object creation and use, object interaction, and the design of simple classes. Covers software engineering concepts including testing, incremental development, understanding requirements, and teamwork.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 301 with C or better OR MAT 267, 272, or 275 with C or better; PHY 131; PHY 132 (OR PHY 151) with C or better OR Visiting University Student
SES	376	Comm Astro & Planet Sci I	Develops science communication writing skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces the characteristics of written science communication and public engagement within the context of astronomical and planetary sciences to include investigations into the ethics of science communication. Students gain proficiencies in science communication writing, visual data production and various digital technologies through relevant, project-based assignments, digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better OR Visiting University Student
SES	377	Comm Astro & Planet Sci II	Develops science communication oral skills, specifically focusing on communicating scientific concepts and scientific results to a variety of audiences including astronomers and the general public. Through lectures, readings and discussions, introduces a variety of techniques for producing and presenting effective oral science presentations within the context of astronomy and planetary sciences. Students gain proficiencies in public speaking, visual data production and various digital technologies through relevant, project-based assignments, including digital portfolio creation and contributions to a class blog.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): AST 111 with C or better; AST 112 with C or better; AST 113 with C or better; AST 114 with C or better; ENG 102, 105, or 108 with C or better; SES 376 with C or better OR Visiting University Student
SES	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	401	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. Also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
SES	405	Explo Systems Engineering	Provides an introduction to systems engineering with an emphasis on the following topics: the systems engineering process, requirements, design fundamentals, subsystem fundamentals, trade studies, integration, technical reviews, case studies and ethics. Prepares the student for the capstone spacecraft/mission design course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
SES	407	Space Works II: Mdl Fabr & Tst	Provides students with: (1) experience in complex project design and fabrication, including the application of NX software for thermal and structural modeling, use of the ASU Student Machine Shop, and the testing of a team project within space-like conditions; (2) training in clean room protocol; (3) electrostatic discharge training; and (4) preparation of a Preliminary Design Review document which includes a team presentation. A key element includes interacting with and learning from engineers and scientists working on space projects.	N	LEL	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): SES 307 completed two times with C or better; Credit is allowed for only SES 407 or SES 494 (ASU SpaceWorks Project Level 2-Model, Fab, Test)
SES	410	Senior Exploration Project I	Design and development of an Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105 or 107; minimum senior standing OR Visiting University Student
SES	411	Senior Exploration Project II	Continuation of SES 410. Development of Earth, solar system, or space exploration project. Conceptualization, design, development, deployment, data analysis, communication.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Pre-requisites: ENG 101, ENG 105 or ENG 107; SES 410

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SES	480	Teaching Earth & Space Science	Provides a practical review and active exploration of educational research and theory, published and online resources, and best practices, to inform effective teaching of the Earth and space sciences at the high school and undergraduate levels.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; AST 111, AST 112, GLG 101, GLG 102, GLG 108, GLG 110, SES 106, SES 121, or SES 122 with C or better; Credit is allowed for only SES 480 or SES 494/GLG 490 (Teaching Earth and Space Science)
SES	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): minimum 45 hours
SES	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6		Prerequisite(s): Barrett Honors student
SES	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SES	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-3		Prerequisite(s): minimum 45 hours
SES	501	SESE Colloquium	Colloquium is an opportunity to gain exposure to research that is taking place beyond the School of Earth and Space Exploration (SESE). Colloquium facilitates the cross-disciplinary growth that is always evolving in SESE. It also provides an opportunity for all members of SESE to gather in one location to interact and learn about science.	N	LEC	Y	YGB	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 500 or SES 501
SES	502	Exploring SESE Research	Weekly series of talks by faculty in the School of Earth and Space Exploration (SESE) about their current research.	N	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 591 (Faculty Research Seminar) or SES 502
SES	510	Grad Exploration Project I	Design and development of an Earth, solar system or space exploration project. Conceptualization, design, development, deployment, data analysis, communication. First part of a year-long project for the development and testing of experiments and instruments for scientific exploration. Expects students to define the mission and develop an experiment while applying realistic science-based goals and constraints to their design work.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Exploration Systems Design MS student; minimum 9 hours of CEN, EEE, IEE, or MAE graduate courses with C or better; minimum 6 hours of AST, GLG, or SES graduate courses with C or better
SES	511	Grad Exploration Project II	Development of Earth, solar system or space exploration project. Conceptualization, design, development, deployment, data analysis, communication. Second of a year-long project for the development and testing of experiments and instruments for scientific exploration. Expects students to define the mission and develop an experiment while applying realistic science-based goals and constraints to their design work.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	3		Prerequisite(s): Exploration Systems Design MS student; SES 510 with B or better
SES	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		
SES	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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SES	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-4		
SES	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SES	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Earth and Space Exploration	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SFS	215	Fund of Sustainable Food Sys	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SFS	216	The Sustainable Plate	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SFS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SFS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SFS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SFS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SFS	560	Tools and Tactics	Reviews competing theories, models and analytical frameworks for understanding the policy-making process. Provides advanced knowledge of the tools and strategies necessary to achieve food policy reform.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 561
SFS	561	Food and Farm Immersion	Exposes students to farmers, ranchers and supply chain businesses that are the focus of, or are otherwise directly impacted by, food and agriculture policies and programs.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; Corequisite(s): SFS 560
SFS	562	Managing Resources Food Proc	Highlights the relevance of natural resource conservation for ensuring healthy agricultural, food and environmental systems, as well as the various approaches to achieving sustainable systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SFS 560; Corequisite(s): SFS 563
SFS	563	Applied Food Policy Immersion	Intensive seminar on leadership reviews leadership theories, builds leadership skills, and engages students in question-and-answer sessions with food policy leaders from a variety of sectors on the ASU campus and across Metro-DC.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; Corequisite(s): SFS 562

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SFS	564	American Agr in Global Context	American agriculture both impacts, and is impacted by, the production and demands of other countries. Considers global food trends, global food policy governance regimes and institutions, and explores current controversies.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	2		Prerequisite(s): SFS 560; SFS 562
SFS	565	Organizational Leadership	Culminating research-based class organizes students into small teams and chooses a topic from a list of contemporary policy controversies provided by the professor. Class work requires original research, creation of policy solutions, and development of strategies to achieve proposed solutions. Each team produces a professional report to be broadly shared with sustainable food system advocates. The professional report is expected to advance food policy knowledge generally and provide certificate graduates visibility to highlight their accumulated skills. Organizes assignments so that students have individual assignments that must be completed and submitted for individual grades. Teamwork is also a highly valued skill for leaders and for this reason, a component of a student's grade is based on the final team report and presentation.	N	PRA	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Food Policy and Sustainability Leadership certificate student; SFS 560; SFS 563; Pre- or corequisite(s): SFS 564
SFS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRO	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SFS	596	Capstone	Required capstone where students conduct research and write a professional report of publishable quality based on the research.	N	LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainable Food Systems MS student
SFS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics and highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	101	Think Global-Individ&Authority	Examines the changing notions of the individual and authority over history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student
SGS	107	Religion and Globalization	Explores how different religions interact with the various processes of globalization, including how the world's major religions have been transformed by economic, political, cultural, and technological aspects of globalization. Topics include religious terrorism, human rights, religion, and gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Credit is allowed for only REL 107 or SGS 107 OR Visiting University Student
SGS	111	Global History Since 1500	Surveys Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Credit is allowed for only HST 101 or SGS 111 OR Visiting University Student
SGS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	203	Contemporary Global Trends	Gives a grounding in patterns of international politics and global social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	
SGS	204	Prof Global Career Development	Orients the student to working in global contexts and to thinking critically about careers in the global arena. Focuses on working in organizational settings distinctly global. Three modules: nation-state, corporations, and working international organizations.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	240	Introduction to Southeast Asia	Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(HU or SB) & G	Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240 or SGS 240 OR Visiting University Student
SGS	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & H & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only HST 245, POS 245, REL 245, SGS 245 or SLC 245
SGS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		

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SGS	301	Principles of Global Studies	Presents current debates about globalization and subjects these to critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 101 or SGS 301 OR Visiting University Student
SGS	303	Global Trends	Analyzes the process of globalization across boundaries through the investigation of the determinants and ramifications of globalization from the vantage of modern social sciences. Students are expected to conduct and articulate independent critical analyses toward a more in-depth understanding of this social phenomena, global history, and particularly the global economy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	304	Cross-Cultural Awareness	Addresses the theory and practice of studying, working and/or living in cultures other than your own, and focuses on cultural preparation to learn successfully in diverse cultures. Develops an awareness of intercultural sensitivity and recognizes its value, gains specific intercultural competencies (as defined within the course), and enables students to better understand their own culture so they can understand their host culture at a more meaningful level. Because of the variety of locations where students study or intern, focuses on culture-general skills, not culture-specific ones. Students also gain career development skills to prepare them to apply to study abroad programs and related scholarships, and guidance on how to best utilize international experiences for maximum benefit and long-term career planning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 304 or SGS 394 (Cross-Cultural Awareness) or SGS 394 (Foundations of Cross-Cultural Awareness) OR Visiting University Student
SGS	305	Empirical Political Inquiry	Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 301 or SGS 305 OR Visiting University Student
SGS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SGS	320	Mechanisms Global Governance	One of the fundamental issues in the social sciences concerns the problematic attainment of social order, which is the principal aim of governance. Presents the five principal mechanisms purported to account for social order, and illustrates these by providing empirical examples of each; includes film clips.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	321	Int'l Insts & Global Gov	Provides an in-depth examination as to how the international community organizes itself, through international institutions, to deal with serious international issues, and how the institutions of international governance can be improved. Studies diverse examples of international institutions primarily from the perspective of international relations (IR) theory and the role of international law (IL).	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	323	International Development	Provides an introduction to the theories underlying international development and the remaining challenges facing academics, researchers, and policymakers in solving issues contributing to global poverty. Gives an overview of the state of the world, illustrating how indicators of economic growth and well-being are unequally distributed across countries. Conceptualizes the leading factors believed to drive these patterns and discusses the historical approaches to solving these problems. Gives particular attention to examples of policies and development strategies that either strengthened or weakened economies in the past. Second half of the course details current factors that continue to threaten development, such as poor health and education practices, limitations in agricultural growth and food security, and heightened risk due to climate change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SGS 323 or SGS 394 (International Development) or SOS 394 (International Development)

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SGS	324	Global Trade in Real Time	Practical aspects of global trade including historic background, negotiations, supply chain, global terms, transportation, chartering, marine insurance, international arbitration, foreign exchange, letters of credit, barter, ethics, leadership, networking, country analysis and introduction to global management theories.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or minimum junior standing OR Visiting University Student
SGS	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SGS	330	Globalization and Environment	Assesses the impact of globalization on the earth's environment. Examines such issues as biodiversity loss to pollution to urbanization to climate change, among others, and assess how globalization has driven, impacted or improved these environmental problems. Emphasis on understanding the social, political and economic factors that have contributed to global environmental change and the degree to which globalization processes are something 'new', as well as on examining the ability of communities, nations and transnational institutions to manage these global problems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	340	Violence Conflict Human Rights	Interdisciplinary examination of the evolution and role of human rights in global society. Major themes include the political struggles over enforcement of human rights and curtailment of violence against individuals. Pays close attention to the role of non-governmental organizations and diplomacy in advancing human rights norms and also examines America's role in human rights, both at home and abroad. Focuses on the causes and effects of violence and human rights abuses in the context of torture, the "war on terror," and crimes against humanity.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SGS	341	Humanitarian Crisis&Intl Intrv	Focuses on political, legal, and ethical issues raised by decision about military interventions in genocide and humanitarian crisis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	343	Rel/Nationalism/Ethnic Conflict	Examines the role of religion in national and ethnic conflict in the contemporary world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only REL 379 or SGS 343 OR Visiting University Student
SGS	344	Facing the Past: Truth, Memory	The past has never been so present as it is today. Over the last two decades, the world has shown an increasing interest in uncovering the hidden and forgotten histories of state-sponsored atrocities and acknowledging the fate of victims and survivors. Studies this movement for the recovery of truth, memory, and moral responsibility includes a wide range of actors and takes a number of different forms.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		
SGS	350	Economic Dev & Globalization	Major issues and models in economic development. Studies development policy and foreign aid practiced since the 1970s and recent critique of these practices. Analyzes the mistakes made in the last 40 years, and potential for improving the practice of foreign aid. Contemporary issues in development economics, including the impacts of bad governance, foreign aid, corruption, war, military intervention and democracy on economic growth with emphasis on policy evaluations in health, education, microfinance and monitoring corruption.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours
SGS	360	Cultural Aspects Globalization	Cultural aspects of globalization, starting with a theoretical discussion of what culture is and then weaving this discussion into an empirical examination of UNESCO's World Heritage program as a practical means of studying the role of culture in globalization. A number of questions guide our inquiry: What is culture? What forms does it take? Can culture be preserved? If so, what are the consequences? How is the UNESCO World Heritage Program structured? How does it conceive culture? What is its understanding of the global and the role of the local in it?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours

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SGS	361	World Society	Studies global processes by conceptualizing the world as a world society. This means that globalization is not just people being more interconnected enabling faster interactions. It suggests that interactions and institutions throughout the world are increasingly part of a whole, of a global consciousness, and while boundaries such as national boundaries are important, they do not delimit "society." The global is not just what is outside of national society or beyond the nation-state; it also constitutes what is inside the nation-state.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 361 or SGS 394 (World Society)
SGS	366	Islamic Societies in Africa	An in-depth study of the fundamental principles of Islam. Course will examine various forms of development of Muslim societies and institutions in Africa through time.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	G	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 hours; Credit is allowed for only AFR 372 (or AFS 372) or REL 362 or SGS 366 or AFS 394/REL 394/SGS 394 (Islam and Islamic Societies in Africa: Social and Political History)
SGS	370	Geopolitics	Geopolitics is a field that deals with war, conflict and the politics of animosity and violence. It calls special attention to the distribution of power on a global scale, and to the spatial scales at which power, authority and control operate. At one time, this involved studying how various "great powers" and "wise men" carved up the world according to their goals and interests. But power is everywhere! To name only a few examples, it is present in the ways that NGOs operate in conflict zones, in global health advocacy and awareness, in media coverage of distant catastrophes and seemingly immanent risks, and in disaster management and emergency response plans. Scholars in this field study topics such as war, diplomacy, conflict, migration, religious strife, terrorism and similar fields.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours or minimum junior standing; Credit is allowed for only SGS 370 or SGS 394 (Global Geopolitics) OR Visiting University Student
SGS	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or HST/JUS/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
SGS	379	The Resource Curse	Explores the paradox known as the resource curse, examining the argument, its mechanisms for impeding development, and its effects. Examines successes and failures, and in doing so, examines the mechanisms of the resource curse and the potential to overcome the negative consequences of resource wealth for developing countries.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 379 or POS 394 (The Resource Curse) or SGS 379 or SGS 394 (The Resource Curse) OR Visiting University Student
SGS	381	Modern Southeast Asia	Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	SB & G & H	Pre-requisite(s): ENG 102, 105 or 108 with a C or better; Minimum 30 hours; Credit is allowed for only HST 391 or SGS 381
SGS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	401	Political Statistics	Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	CS	Prerequisite(s): POS 301 or SGS 305 with C or better; Credit is allowed for only POS 401 or SGS 401 OR Visiting University Student
SGS	441	Religion and Global Politics	Explores the nature and role of religion in international politics in the modern period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only REL 480 or SGS 441 OR Visiting University Student
SGS	442	Diff Voices Contmp Islamic Disc	Examines modern Muslim discourse on major contemporary issues such as Shari'a, Jihad, secularism, gender, civil rights, democracy, extremism, religious violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only AFR 480 (or AFS 480) or REL 461 or SGS 442
SGS	454	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student

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SGS	466	Migration Environ&Gbl Security	Human mobility within and across borders is on the rise with rapid globalization and infrastructural investments. National concerns over human security and resource allocation have prompted discussion over the drivers and consequences of emerging migration patterns related to environmental stressors. The objective is to gain perspective on the environmental refugee debate and learn how governments, donors, and international agencies are currently tackling the problem. Students are introduced to cross-disciplinary concepts of migration and environmental stressors (e.g., natural disasters, climate change, water scarcity, soil erosion) in order to understand and discuss recent scientific work, and investigate the challenges in documenting this phenomenon and its consequences on global security.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): minimum junior standing; Credit is allowed for only POS 466 or SGS 466 or GCU/POS/PUP/SGS/SOS 494 (Migration, Environment, & Global Security) or GCU/GSC/PUP 598 (Migration, Environment, & Global Security) OR Visiting University Student
SGS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-12		
SGS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6		Prerequisite(s): Barrett Honors student
SGS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SGS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-4		
SGS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-7		
SGS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Politics and Global Studies	1-3		
SGS	501	Global Theory	Examines theoretical and analytical frameworks employed by institutions to frame action related to increased global uncertainty including economic, sociological, psychological, decision theory, gaming and institutional behavior frameworks. Uses case studies in key global issue areas such as climate change/natural hazards, energy security, urbanization, food security, security, failed states.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	502	Global Institutions and Actors	Examines key types of global institutions, (1) multinational businesses, e.g., Toyota, (2) international development organizations, e.g., the World Bank, and (3) voluntary organizations, e.g., the Red Cross/Crescent, in terms of the roles that they play in shaping localized outcomes. Using case studies, explores the impact of international actors in terms of the power and influence that they exert through international treaties, standards, information diffusion, influence on local governments and other organizations, dissemination of international "best practice."	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SGS	503	Global Decision Making Methods	Examines and critically assesses approaches and methods used in decision making and planning under uncertainty in global contexts, e.g., scenarios, SWOT, risk analysis, contingency planning, gaming, economic forecasting, anticipation-foresight techniques, decision making under complex conditions, and rapid assessment techniques. Explores the strengths and weaknesses of different approaches under varying conditions, synergies achievable through application of multiple methodologies, and normative assumptions underlying various methodologies. Students gain "hands-on" experience in the use of a variety of techniques through assignments based on real-world situations.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 504

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SGS	504	Indiv Decis Mak CCultur Contx	Focuses on the role of the Individual decision maker in cross-cultural contexts, acting in the context of globally engaged institutions. The individual is virtually always embedded in an institutional environment whether as manager, planner, advocate, frequently acting as part of a team. It is recognized that the various agents/stakeholders involved in addressing an issue, negotiating a deal, in a global context, almost invariably hold significantly different worldviews, cultural norms and decision-making styles. Deals with the individual decision maker in both public and private decision-making milieus. Discusses modes of intervention and initiative. Addresses issues of leadership, reconciliation of different decision-making modes, and acting effectively in cross-cultural environments. Emphasizes decision making under high uncertainty, using case studies, e.g., pending nationalizations or privatization.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503
SGS	505	Global Field Preparation	Prepares students for the global field project. In addition to scheduled classes, each student meets with her/his advisor at regular intervals during the semester to prepare for the Global Field Project. During the semester, students prepare a work plan for their Global Field Project, including objectives of the exercise, specifications of deliverables. Network building is an important secondary objective, and development of an esprit de corps among Global Studies masters students.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Politics and Global Studies	3		Prerequisite(s): SGS 501; SGS 502; Pre- or corequisite(s): SGS 503; SGS 504
SHS	101	American Sign Language I	Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		
SHS	102	American Sign Language II	Further development of receptive/expressive conversation skills in ASL; finger spelling. Continued exploration of deaf culture.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 101 or SHS 101 with C or better and taken within the past two years OR Visiting University Student
SHS	201	American Sign Language III	Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 102 or SHS 102 with C or better and taken within the past two years OR Visiting University Student
SHS	202	American Sign Language IV	Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): ASL 201 or SHS 201 with C or better and taken within the past two years OR Visiting University Student
SHS	205	Exploring Comm Disorders	Introduces hearing, language, and speech problems in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
SHS	230	Peering into the Human Brain	An introductory look into the cognitive and language functions of the human brain, and the resulting behavioral consequences of injury, disease and disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4	SG	
SHS	250	Introduction to Phonetics	Introduces English phonetics with emphasis on phonetic transcription, articulation, phonology, and disorders of speech.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	300	Foundations of Rehab Sciences	Provides a foundation to rehabilitation science and covers an overview of rehabilitation professions and work settings including acute care, rehabilitation centers, long-term care facilities and in-home services. Also provides an introduction to clinical methods, patient privacy and professional ethics as well as an overview of rehabilitation process and continuum for children and adults.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	310	Anatomical/Physio Bases Speech	Noncadaveric study of anatomical systems that underlie human speech and language, including respiration, phonation, articulation, and related nervous system processes.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; SHS 250 with C or better OR Visiting University Student
SHS	311	Hearing Science	Studies the physical characteristics of sound and of the structure and function of the human auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): PHY 101 with C or better OR PHY 111 and 113 with C or better OR Visiting University Student

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SHS	340	Chronic Illness/Disability/Env	Over a billion people worldwide are estimated to live with some form of disability; however, disability is diverse in its association with chronic health conditions. Individuals with disabilities are vulnerable to deficiencies in health and social services. Depending on the group and setting, persons with disabilities may experience greater vulnerability to chronic illness, co-morbid conditions, age-related conditions, engaging in health risk behaviors and higher rates of premature death. Provide an overview of disability groups and the associated health conditions that impact their lives as well as discussion of the barriers to health care including health care costs, availability of services and physical barriers in the community.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	360	Rehab Children/Adolesc in Ed	Gives an overview of habilitation services for children from early intervention through adolescence in terms of physical, occupational and speech therapy, as well as other support services and their role with early intervention, educational settings, pediatric rehabilitation contexts.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours
SHS	367	Language Science	Psychological processes, linguistic principles and social influences relating to language and communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Prerequisite(s): minimum 30 hours OR Visiting University Student
SHS	375	Speech Science	Normative aspects of speech, hearing, and language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 250 with C or better; Pre- or corequisite(s): SHS 310 with C or better if completed OR Visiting University Student
SHS	400	Topics in Neuroscience	Covers in-depth important and emerging developments in neuroscience, emphasizing lectures that include readings of recent reviews and contemporary publications in peer-reviewed journals. Includes a significant writing component; students learn skills for writing scientific publications and grant applications.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 360 with C or better; Credit is allowed for only BIO 400 or KIN 400 or PSY 400 or SHS 400
SHS	401	Principles of Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or SHS 501 or Visiting University Student
SHS	402	Clinic Mthds/Treat Comm Disord	Principles and techniques for planning speech and language intervention, including observation experiences.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Pre- or corequisite(s): Speech-Language Pathology Assistant certificate student OR SHS 470; SHS 485 OR Visiting University Student
SHS	410	Deaf Culture	Provides students with an overview of issues related to deaf, hard of hearing and comprehensive vision hearing loss (CVHL). Topics include historical, cultural, educational and political issues, technology, arts and literature as it relates to the deaf community. Taught primarily in English.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASL 410 or ASL 494 (Deaf Culture) or SHS 410 or SHS 494 (Deaf Culture) or SLC 410 or SLC 494 (Deaf Culture) OR Visiting University Student
SHS	461	Accent Modification	Increases speech intelligibility in non-native English speakers by changing their English pronunciation skills. International students learn the pronunciation of American English vowels and consonants, intonation and stress patterns, and rhythm of speech. Conducts pre- and post-assessments of the students' intelligibility to determine the need for improvement on specific sounds and speech patterns.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): minimum 45 hours OR Visiting University Student
SHS	465	Speech/Language Acquisition	Speech and language development in the normal child; introduces disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3	SB	Pre- or corequisite(s): SHS 250; Credit is allowed for only SHS 465 or SHS 565 OR Visiting University Student
SHS	470	Develop Speech/Lang Disorders	The nature of speech and language disorders in children	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 465 with C or better OR Visiting University Student
SHS	473	Treatment Plan Implementation	Students will learn to follow written treatment plans, individual education programs, individual support plans or protocols developed by the supervising speech-language pathologist. Opportunities to learn methods for eliciting therapy targets and to apply critical thinking and problem solving during therapy will be provided.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	483	Professional Issues in SLPA	Studies licensure laws, professional conduct, and ethical practice in the field of speech language pathology.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Admission to the Speech and Language Assistant Program in Dept of Speech and Hearing Science
SHS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		

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SHS	485	Acquired Speech/Lang Disorders	Acquired speech and language disorders across the lifespan.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 310 with C or better; SHS 367 with C or better OR Visiting University Student
SHS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		Prerequisite(s): Barrett Honors student
SHS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Health Solutions	College of Health Solutions	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SHS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	496	Aural Rehabilitation	Approaches to aural rehabilitation of children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; SHS 375 with C or better; SHS 401 with C or better; Credit is allowed for only SHS 496 or SHS 596 OR Visiting University Student
SHS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SHS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
SHS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		Prerequisite: MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	501	Introduction to Audiology	Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS 311 with C or better; Credit is allowed for only SHS 401 or 501
SHS	502	Basic Audiometry	Covers the bases, purposes, rationales, and procedures for the core clinical tests of auditory function in adults and children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	504	Amplification I	Operation, electroacoustic measurement, selection, and prescriptive fitting of amplification devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	505	ASL for AuDs and SLPs	Facilitates effective manual and alternative methods of communication with deaf individuals in clinical settings.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	508	Pediatric Audiology	Emphasizes the principles and procedures for early identification and management of congenital and early-onset hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	510	Amplification II	Verification and validation of hearing aid performance, benefit, and satisfaction. Fitting considerations for pediatric and geriatric populations.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		
SHS	511	Aud Perception-Hear Impaired	Psychophysical methods and behavioral aspects of hearing, with an emphasis on the perceptual consequences of sensorineural hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	512	Mgmt Med Speech-Lang Pathology	Focuses on varying topics in management of medically based speech and language disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	513	Neurophysiology Auditory Sys	Focuses on the neurophysiology of the normal auditory system and on changes associated with hearing loss.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	516	Auditory Evoked Potentials	Electrophysiologic assessment of the peripheral and central auditory nervous system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	517	Balance Assessment	Clinical analysis and treatment of balance disorders and dizziness.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	518	Auditory Rehabilitation	Study and clinical application of assistive technology and rehabilitative services for managing the effects of hearing impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	520	Aud Path/Disorders & Otoneuro Ap	Familiarizes students with major pathologies and disorders of the human auditory system. Examines advanced otologic, neurologic, and audiologic approaches in the differential diagnosis and treatment of peripheral and central disorders of the auditory system.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Speech and Hearing Science graduate student

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SHS	522	Hearing Conserv/Instrument	Examines the prevention, identification, physiologic effects, and management of hearing loss due to noise exposure. Incorporates measurement standards and methods for calibration of electronic audiologic instruments used to produce, modify, and measure characteristics of sound.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	523	Advanced Audiometry	Discusses assessment and intervention procedures beyond the basic audiologic test battery and for special populations. Examines relevant new audiologic tests and procedures. Prerequisites: SHS 502, 513; SHS major.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SHS major; SHS 502 and SHS 513
SHS	524	Counseling in Comm Disorders	Theories of counseling emphasizing the psychological and emotional impact and management of individuals with communication disorders and their families.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	525	Audiology Practice Management	Business practice issues, quality assurance, and professional ethics for the practicing audiologist.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Doctor of Audiology or PHD Speech and Hearing Science student
SHS	526	Launch to Clinic	In Launch-to-Clinic, students rotate through on-campus observations and group orientation to the ASU Speech and Hearing Clinic. Students learn the policies and procedures of the ASU Speech and Hearing Clinic, software specific to the clinic operations, report writing, and clinical documentation with practice to develop the skills needed to succeed in subsequent clinical rotations both on and off campus.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Audiology major; Credit is allowed for only SHS 526 or SHS 580 (Audio Clinical Observation) or SHS 580 (Audiology Observation)
SHS	538	Clinical Method and Simulation	Provides the knowledge and skills in clinical methods for treatment and diagnosis in speech-language pathology. Topics cover essential information to participate in screening and prevention opportunities, to structure and implement therapy goals and strategies, to apply for internships, and to administer and interpret informal and formal diagnostic tests.	N	LEL	Y	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders major.
SHS	539	Professional Issues inSLP	Covers professional issues in speech-language pathology to ensure that students meet the professional knowledge requirements set forth in the American Speech-Language-Hearing Association (ASHA) certification standards. The topics cover essential information that the student needs to have in order to meet graduation requirements, comply with ASHA's ethical requirements, complete ASHA certification requirements, comply with Arizona state licensure requirements, prepare for a Clinical Fellowship Year and be involved in education and advocacy for the profession of Speech-Language Pathology.	N	LAB	Y	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Communication Disorders MS student
SHS	541	Data Analysis Neurosc	Common statistical analyses for the interdisciplinary field of auditory and language neuroscience. Covers fundamental topics of statistics and their applications in this specialty area of neuroscience. Various data types, experimental designs and statistical analyses that are common in the field of auditory and language neuroscience. Through several hands-on activities, students learn to implement and to apply different statistical analyses to auditory and language data.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	542	Applied Rsch Meth Neurosc	Team-taught course covering fundamental topics of experiment design and their applications in auditory and language neuroscience. Students learn about the fundamentals of experimental design, and their application in psychoacoustics, EEG, ERP and MRI. A series of hands-on activities require that students analyze existing experiments and a final project requires that students design a new experiment.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Speech and Hearing Science graduate student
SHS	543	Functional Neuroimaging Lang	Functional neuroimaging for anyone who is interested in its application to study brain functions including language, speech and auditory psychophysics. Functional MRI is a prominent method to see into the human brain. Its use as a research tool in the field of neuroscience (and language neuroscience in particular) has grown exponentially over the past decade. Through a combination of lecture, readings and practicum exercises, this course provides a broad introduction into functional MRI research, including how MRI can generate images; how these signals relate to neuronal activity; and how to design and analyze meaningful functional MRI experiments to investigate the neural computations of language, speech, hearing and other related functions. Students also review recent functional neuroimaging literature, and gain hands-on experience collecting and analyzing fMRI datasets.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 543 or SHS 598 (Functional Neuroimaging of Cognition)

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SHS	550	CORE B - Development 6-21	Covers development, assessment and intervention of children from 6 years to 21 years of age, with a focus on school education. Includes child development of anatomical, neurophysiology, cognitive, motor, perceptual, speech, language, reading, writing and hearing aspects. Also addresses service delivery models in different contexts in children with atypical development in the different areas.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 540
SHS	552	Physio Measure Auditory Functn	Focuses on the measurement of otoacoustic emissions and acoustic immittance.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	555	Cochlear Implants	Covers the research and clinical aspects of cochlear implantation with a focus on the principles of speech coding strategies.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): Doctor of Audiology or Speech and Hearing Science PhD student
SHS	560	CORE C - Adult dev./aging	Covers development, aging, assessment and intervention in adults with a focus on the elderly and the contexts for their service delivery. Includes changes in the adults related to anatomy, neurophysiology, cognitive, motor, perceptual, speech, language, literacy and hearing aspects. Also addresses service delivery models in different contexts where elderly and young adults with acquired disabilities are served.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	4		Pre-requisite: SHS 550
SHS	565	Speech/Language Acquisition	Speech and language development in the normal child; introduces disorders with added focus on common disorders of acquisition.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 465 or SHS 565
SHS	567	Neural Bases Comm Disorders	Neuroscience and its application to matters of normal and disordered communication.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	568	Special Population in Comm Dis	Covers basic knowledge of etiological aspects (genetics, embryology) and clinical assessment/intervention issues relevant for children with complex medical and developmental disabilities that impact communicative development. Places special emphasis on children with cleft lip and/or palate. Addresses interprofessional roles and team-based management of complex conditions and the development of evidence-based approaches to assessment and intervention in communicative development. Because of the growing knowledge of genetic etiologies in our field, SLPs will increasingly be in a position to make informed referrals to genetics professionals. Therefore, this course includes practical how-to information on spotting genetic red flags and referring for genetic counseling services.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree-seeking graduate student; Credit is allowed for only SHS 568 or SHS 598 (Special Populations in Comm Disorders)
SHS	570	Comm Disorders/Multicul Pops	Studies racial and ethnic biases and the communication behaviors and disorders in various cultural groups.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	571	Augmentative Comm/Lang Prog	Focuses on individuals across the age span who are unable or who are at risk for being unable to communicate with spoken language.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	572	Lang Assess/Intervent Infants	Focuses on the birth to 3-year-old population who are at risk for or who have communication and language disabilities. Examines early developmental risk factors for speech and language delays and evidence-based assessment methods for young children and their families. In addition, explores models of early intervention delivery in homes, clinics, schools and through telepractice and their application in multicultural environments.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Auditory and Language Neuroscience MS or Communication Disorders MS or Speech and Hearing Science (Auditory and Language Neuroscience) PhD student
SHS	573	Lang Assess/Intervent Sch Age	Focuses on later language development, linguistic demands of academic settings, assessment and intervention strategies for older children and adolescents.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	574	Feeding & Swallowing Disorders	Focuses on assessment and intervention of people with swallowing and feeding disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	575	Aphasia/Neurogenic Lang Disord	Assessment and treatment of acquired neurolinguistic impairment.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student

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SHS	576	Neuromotor Speech Disorders	Evaluation and treatment of the dysarthrias and apraxia of speech. Emphasizes acquired adult disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	577	Current Research in Autism	Addresses communication disorders in children and adults with autism, as well as evaluation and intervention across a variety of settings and theoretical frameworks.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	578	Fluency Disorders	Provides the master's level student in speech language pathology understanding of the nature and treatment of stuttering and other fluency disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Corequisite(s): Communication Disorders MS student
SHS	579	Voice and Resonance Disorders	Provides an academic and clinical understanding of voice and voice-related disorders (including resonance and respiration). Includes the impact of voice and voice-related disorders on quality of life and ability to meet communicative ADLs (activities of daily living). Addresses principles of assessment and intervention. Requires students to identify and use relevant evidence-based resources to develop clinical materials to maintain and rehabilitate functional communication and to support interactions with patients, students, caregivers and colleagues. Utilization of evidence-based resources is a skill that speech-language pathologists use throughout their careers, and it represents best practice.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): Communication Disorders MS student
SHS	580	Clinical Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	College of Health Solutions	College of Health Solutions	1-6		
SHS	581	TBI & Cog Linguistic Disorders	Studies the nature, characteristics, and clinical management of cognitive and communicative impairments accompanying right hemisphere damage, TBI, and dementia.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	582	Diff Diagnosis Comm Disorders	Procedures for assessing speech/language disorders in children and adults.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	584	Clinical Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-6		
SHS	585	Artic/Phonology: Assess/Interv	Assessment and treatment of developmental articulation and phonological disorders.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2-3		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	586	Language Essentials Teach Read	Focuses on the fundamentals of literacy instruction and assessment in children enrolled in preschool through high school. Although speech-language pathologists (SLPs) are not the primary reading teachers for students, they play an important role in improving learning in all areas of language, both oral and written. For this reason it is crucial for SLPs to have foundational knowledge in reading and writing development. Recommend a clear understanding of typical language development and language disorders.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SHS 586 or SHS 598 (Language Essentials for Teaching Reading) or SHS 598 (Reading Decoding)
SHS	587	Lang Assess/Interv Preschool	Focuses on preschool language disorders and assessment and intervention strategies for preschool children.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): MS Communication Disorders, Doctor of Audiology, or PHD Speech and Hearing Science student
SHS	588	Bilingual Language Acquisition	Examines bilingual language development in children through adulthood. Uses Spanish-English as the primary example.	N	SEM	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate
SHS	589	Audiology Grand Rounds	Grand Rounds bridges clinical and academic knowledge through case studies, application of emerging research, and clinical workshops.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	1		
SHS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		
SHS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		

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SHS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		
SHS	596	Aural Rehabilitation	Approaches to aural rehabilitation in children and adults. Introduces educational audiology and assistive listening devices.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Credit is allowed for only SHS 496 or 596
SHS	597	Bilingual SLP	Reviews speech and language assessment and intervention practices with bilingual populations from infants to adults.	N	SEM	Y	OPT	College of Health Solutions	College of Health Solutions	2		Prerequisite(s): degree- or nondegree-seeking graduate student
SHS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SHS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-12		
SHS	701	Sci Writing and Presentation I	Basics of launching a research project. Helps students gain an independent perspective of a research field, become competent in critical questioning and analysis of literature, learn how to develop a research question and initiate a research plan.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): Ph.D. student; Credit is allowed for only SHS 701 or SHS 790 (Critical Thinking & Developing Research Questions OR Scientific Writing & Presentation 1)
SHS	702	Sci Writing & Presentation II	Covers the specific parts of an APA style research manuscript, including the structure of the introduction, Method, Results and Discussion. Also introduces other alternate research manuscript styles such as those used in the biosciences. Discusses strategies and recommendations for creating a successful research presentation.	N	SEM	N	GNA	College of Health Solutions	College of Health Solutions	1		Requisite(s): Ph.D. student; Credit is allowed for only SHS 702 or SHS 790 (Scientific Writing & Presentation 2)
SHS	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-15		
SHS	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-12		
SHS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		
SHS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	College of Health Solutions	College of Health Solutions	1-15		
SLB	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	510	Amateur Sports Law: MSLB	Studies law, policy and problem solving in the amateur sports context, focusing primarily on interscholastic and intercollegiate athletics. Title IX and racial equality in sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 676 or SLB 510 or LAW 791 (Amateur Sports Law) or LAW 791 (Non-Professional Sports Law)

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SLB	511	Sports Career Strat & Bus Comm	Focuses on examining job opportunities in the sports industry and the development of strategies for obtaining a position suitable to the talents and abilities of individual students. Students refine their skills in terms of searching for a job. Students also develop a career plan, beginning with an entry-level position for those who have worked in the industry or a next-level position for students currently working in the area.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 511 or LAW 598 (Strategic Career Planning)
SLB	512	Professional Sport Law: MSLB	Studies law, revenue, branding and problem solving in the professional sports context, focusing primarily on professional sports league governance and regulation, labor relations, representing and marketing players and coaches, and issues of equity and race. Also examines international issues related to professional sports.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only LAW 675 or LAW 691 (Non-Amateur Sports Law) or LAW 691 (Professional Sports Law) or SLB 512
SLB	513	Sports Law and Business	Studies law, policy and problem solving in the context of the sports industry at all levels. Exposes professional, amateur and international sports law issues, examining those issues in a problem-focused manner.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student
SLB	514	Negotiations & ADR in Sports	Provides a working or basic knowledge of contract law, with in-depth instruction with regard to negotiating and drafting in the sports context. As their final project, students select a player, coach, university or club and then negotiate a contract. Negotiation sessions are held during class sessions and students evaluate each other, as well as receiving evaluation from the professor. Replicates the negotiation process in the sports industry.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 514 or LAW 598 (Contracts in the Sports Industry)
SLB	515	Sports Bus Strat&Exec Decision	Sports can involve a jog around campus or big business. Sports are interesting, important and a vivid context to learn about consumers, organizations, diverse stakeholders, media and entertainment, partnerships and sponsorship, highly competitive strategies in finance and marketing, managing community venues, big events, and other relevant business topics. Maintains a pragmatic, experiential, yet well-grounded focus, studying the role, nature and dynamics of sports business both in and around "sports industries" and in and around "conventional businesses." Builds and "tests" knowledge and exercise skills related to sports business analysis, decision making, communication and both strategy development and execution. Intellectually rigorous, yet fun. Develops a sophisticated, yet practical understanding of the nature, contexts and dynamics of sports business.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 515 or MKT 591 (Sports Business Strategy and Industry Dynamics)
SLB	516	Revenue Generation in Sports	Develops an appreciation for and understanding of the multiple stakeholders and diverse interests in and around sports business, and of their constantly changing and interactive impact on sports business practice and performance. Gives broad exposure to the major revenue generating domains in the sports industry. Explores the fundamentals of marketing and applies those fundamentals to the domains of sponsorship, endorsement, media, ticketing, merchandising and fundraising as means to create and maintain revenue streams.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 516 or MKT 591 (Sports Business Development)
SLB	517	Sports Marketing	Studies the role, nature and dynamics of sports business and builds knowledge and skills related to sports marketing analysis, decision making and strategy development and execution. Intellectually challenging and demanding, yet fun.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): College of Law student; Credit is allowed for only SLB 517 or MKT 598 (Sports Marketing)
SLB	518	Sports Analytics	Develops and applies analytical skills that are useful in nearly every career. Although the course focuses on applications in the sports context and uses approaches that are rapidly becoming important in the business of sports analytics, this is not a survey course about issues in sports. Instead, this class is about curiosity, storytelling and logic. An understanding and interest in both sports and numbers make this class good. General curiosity makes it great.	N	LEC	N	GNA	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): College of Law student; Credit is allowed for only SLB 518 or MKT 591 (Sports Analytics)
SLB	519	Pro Sport Team Ops/Legal:MSLB	Deals with various legal issues confronted by the Team Counsel of a professional sports team. Reviews the business, risk management, intellectual property and financial issues that raise in connection with the operation of a team.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 670 or SLB 519 or SLB 598 (Pro Team Sports:Legal Issues in Business Operation)

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SLB	520	Sports Venue Construction:MSLB	Studies the structure and issues related to stadium financing in professional and collegiate sports. Covers issues related to professional league expansion and team relocation. Discusses carefully read assigned materials.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 671 or SLB 520
SLB	521	Risk Mgt for Venues - MSLB	American tort law, particularly the foundational elements of duty-breach-causation-harm, as well as causation and reasonableness, as a means of understanding the nature of risk and the tools available to address it in the many circumstances that arise during live sports and entertainment events.	N	SEM	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 673 or SLB 521
SLB	522	NCAA Compliance: MSLB	Provides a real-world view of a Division I Power 5 Conference Compliance Office and the manner in which such an office directs its institution's efforts to maintain compliance with National Collegiate Athletic Association and member conference legislation governing intercollegiate athletics.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 674 or SLB 522 or SLB 598 (Infractions/Compliance-Intercollegiate Athletics)
SLB	523	MLB Impact on Law/Society-MSLB	Examines how MLB served as a catalyst for change in American law and society post WWII, and the legal and business developments that have shaped modern professional baseball. Addresses such diverse topics as the integration of African-American players into MLB and diversity in MLB; labor relations (collective bargaining, free agency, labor stoppages and drug testing); league operations; franchise relocation; expansion; globalization of the game; the business and marketing of the game in the digital age and the resulting legal implications; and the state of the game in the 21st century.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 672 or SLB 523
SLB	524	Law of Sports Branding-MSLB	Examines legal and business issues associated with personal and business branding, particularly in the context of professional and collegiate sports. Discusses and analyzes issues relating to: (1) what constitutes a "brand" and how a "brand" is developed; (2) the recent surge in personal branding by athletes, entertainers and other celebrity personalities; (3) athletes and other celebrities who have transformed their fame into personal branding platforms that support large business enterprises; (4) the basic principles of trademark law and how those principles apply to business and personal brands; (5) regulation and control of brands in professional and collegiate sports, and the Olympics; (6) licensing and corporate sponsorship; and (7) ambush marketing.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-3		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only LAW 677 or SLB 524
SLB	525	Sports Big Events:MSLB	Teaches the business, legal and operational issues of major sporting events. Examines bid preparation, marketing, sales, ticketing, operational, security, volunteer, sponsorship, legal and other issues related to these events.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	2-4		Prerequisite(s): Master of Sports Law and Business student; Credit is allowed for only SLB 525 or SLB 598 (Sports Big Events:Law/Biz/Ops-MSLB)
SLB	581	US Law/Legal Analysis in Sport	The U.S. legal system and the types of legal reasoning used by legal professionals. Provides the necessary instruction to use legal reasoning in both academic work and professional endeavors, including reading and evaluating legal cases, statutes and public policy. Students complete written legal analysis exercises, draft case briefs and participate meaningfully in class by critically analyzing current legal issues.	N	LEC	N	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): Master of Sports Law and Business student
SLB	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	REC	Y	Z1	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SLB	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLB	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student

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SLB	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-4		Prerequisite(s): College of Law student
SLB	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		
SLB	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OP6	Sandra Day O'Connor College of Law	Sandra Day O'Connor College of Law	1-12		Prerequisite(s): College of Law student
SLC	103	Beginning Navajo I	Designed for non-Navajo speakers to develop basic skills in speaking, reading and writing in the Navajo language. Specifically focuses on pronunciation, sounds, basic vocabulary and simple conversation. First of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Credit is allowed for only AIS 101 or AIS 194 (Beginning Navajo I) or SLC 103 or SLC 194 (Beginning Navajo I) OR Visiting University Student
SLC	104	Beginning Navajo II	Designed for non-Navajo speakers to continue basic skills in speaking, reading and writing in the Navajo language. Emphasizes a continued focus on pronunciation, sounds, basic vocabulary and simple conversation. Second of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; Credit is allowed for only AIS 102 or AIS 194 (Beginning Navajo II) or SLC 104 OR Visiting University Student
SLC	115	Japanese Popular Culture	Examines different media of Japanese popular culture such as comics (manga), animation (anime) and film for evidence of how the Japanese express their self identity in Japanese society. By separating the media into themes such as technology and the future, war/apocalypse/disaster, violence in society, gender and sexuality, and human relations, understands the Japanese culture (and social consciousness) more intimately. Students view films, read scholarly articles on the subject matter, and actively participate in the course through written papers and discussion.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Credit is allowed for only JPN 115 or SLC 115
SLC	120	Intro to Chinese Culture	Introduces geographical, historical, literary, and intellectual premises of Chinese culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only CHI 120 or SLC 120 OR Visiting University Student
SLC	123	Gods & Monsters: Comparat Myth	Guides students in comparing mythologies of a number of different cultures, including ancient Greek, Asian, Middle Eastern, European and American aboriginal traditions. Roots readings and assessments in the relevant literature from each tradition. Introduces students to (short selections from) texts from a variety of cultures, including ancient Greek epic and tragedy, the Ramayana, Norse eddas, the various flood stories from Mesopotamian cultures, African creation and Mesoamerican creation myths, and the legend of King Arthur. In addition, students encounter oral tradition and folklore from the Brothers Grimm, African-American trickster stories, American folklore, vampire legends, and Native American oral tradition. These types of texts invite discussion of cultural appropriation and the modern uses of such traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Credit is allowed for only SLC 123 or SLC 194 (Gods and Monsters: Comparative Mythology)
SLC	140	Grk&Lat Roots Biosctfc Trmnlgy	Introduces students to the ancient Greek and Latin root words most commonly used in biological, medical, and other scientific terminology, and gives practice identifying them in context. The knowledge of these root words enables students to memorize with greater ease and increased retention the bioscientific terminology they encounter in other coursework as well as in their medical or scientific profession.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Credit is allowed for only BIO 140 or GRK 140 or LAT 140 or SLC 140 OR Visiting University Student
SLC	141	Russian Civilization	For centuries, Russians have argued about who they are as a people and a nation by turning to their history, religion, literature, arts and language. With a foundation in Russian history and geography and using primary sources, we survey debates over Russian history and civilization to understand how Russians have imagined themselves and their nation and empires.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Pre- or corequisite(s): ENG 101, 105, or 107 with C or better if completed; Credit is allowed for only HST 141 or RUS 141 or SLC 141 OR Visiting University Student
SLC	142	Ancient Greek Civilization	Ancient Greek civilization and culture. Studies (in roughly equal parts) the art, archaeology, literature, culture and history of ancient Greece from prehistoric times until after the conquests of Alexander the Great (the Hellenistic Age).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only GRK 142, GRK 194 (Ancient Greek Civilization) or SLC 142
SLC	143	Roman Civilization	Introduces ancient Roman civilization from the earliest times (ca. 1200 BCE) through the fall of the Western Empire (CE 476) and the reign of the Byzantine Emperor Justinian (6th c. CE). Examines ancient Roman society, history, art, architecture, literature, mythology and legends.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Credit is allowed for only LAT 143 or LAT 194 (Roman Civilization) or SLC 143 or SLC 194 (Roman Civilization)

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SLC	144	The Ancient Mediterranean	Provides a comprehensive introduction to the Mediterranean world, focusing on (but not limited to) the period of the classical Greeks and Romans. Provides some history of the area, but focuses on the classical world and its interaction with the cultures that surrounded it, including Semitic, Near Eastern, and North African cultures, as well as some of the lost cultures of the area such as the Minoans and Etruscans. Introduces the sources that provide information about these cultures (literary, art historical and archaeological sources), and teaches students to think critically and write persuasively about these sources.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 144 or SLC 194 (The Ancient Mediterranean)
SLC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		Pre-requisites: maximum 25 hours
SLC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	201	Introduction to Linguistics	Examines the nature and diversity of world languages, linguistic structures and functions of language, language variation, pragmatics, and language acquisition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU or SB	
SLC	202	Expl Culture: Words/Image/Stor	Introduces the fundamentals of cultural analysis to help students understand the ways in which the languages and literatures they are learning are embedded in a broader cultural context. With an emphasis on comparative perspectives and theoretical discussion, teaches methods of inquiry that enable students to formulate their own research questions and draw on their individual backgrounds as School of International Letters and Cultures majors, no matter the language, country, period or artistic medium they focus on. All course materials and instruction are in English. Interested students are encouraged to bring in and address primary and secondary sources in the target language of their focus.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	
SLC	203	Intermediate Navajo I	Designed for those who have some comprehension of the Navajo language, and have a beginner's level speaking ability. Continuation of Beginning Navajo; aimed to develop skills in speaking, reading, and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies, and verb conjugation. Third of four levels of the Navajo language.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; Credit is allowed for only AIS 201 or AIS 394 (Intermediate Navajo I) or SLC 203 OR Visiting University Student
SLC	204	Intermediate Navajo II	Designed for those who have some understanding of the Navajo language and can speak some Navajo. Continuation of previous coursework; develops skills in speaking, reading and writing in Navajo by focusing on pronunciation, vocabulary, conversational studies and verb conjugation. Fourth and final level of Navajo.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): AIS 101 or SLC 103; AIS 102 or SLC 104; AIS 201 or SLC 203; Credit is allowed for only AIS 202 or AIS 394 (Intermediate Navajo II) or SLC 204 OR Visiting University Student
SLC	212	Language and Culture Clash	Not limited to language majors and does not require any previous knowledge of a foreign language or culture. Students complete course projects using the material of their cultures of interest (the language they are taking interest in, including English). Focuses on the following topics in linguistics and cross-cultural communication: cultural norms, cultural conceptualizations, cultural scripts (as linguistic concepts), equivalence, communication failures. Emphasizes hands-on analysis, and also familiarizes participants with the basic concepts in the fields of cross-cultural linguistics and cross-cultural psychology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 212 or SLC 294 (Language & Culture Clash/Communication & Miscommunication)
SLC	214	World's Game:Hst & Cltr Soccer	Provides a survey of the cultural significance and global reach of soccer, both historically and in contemporary culture. Students study materials from around the world in several mediums; they view films that explore the cultural impact of the game; read literary works that focus on soccer; and engage with scholarly articles and contemporary news media dedicated to the game. Provides a comprehensive sense of the history, personalities, rivalries, fandom, and even the finances and scandals related to the world's game.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): Credit is allowed for only HST 214 or HST 294 (The Beautiful Game: History & Culture of Soccer) or SLC 214 or SLC 294 (The Beautiful Game: History & Culture of Soccer)
SLC	221	Survey of Ancient Greek Lit	Introductory survey of ancient Greek literature. Familiarizes students with the important literary genres, texts, and authors of the ancient Greeks from Homer to the Hellenistic period. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 221 or SLC 221
SLC	222	Survey of Roman Literature	Introductory survey of Roman literature. Familiarizes students with the literary genres, texts and authors of the Romans from the origins of the Latin language to the Silver age. All readings in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only LAT 222, SLC 222, LAT 294 (Roman Literature in Translation) or SLC 294 (Roman Literature in Translation)

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SLC	223	Intro to Greek & Roman Myth	Familiarizes students with the characters and events of ancient Greek and Roman myths through their literary manifestations, and moves beyond mere narrative to consider the possible interpretations and functions of these myths, thus revealing the central concerns of ancient society and giving insights into the working of our own society and its literary and artistic traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Credit is allowed for only GRK 223 or LAT 223 or SLC 223 or GRK 294 (Greek and Roman Mythology) OR Visiting University Student
SLC	245	Intro to India and South Asia	Provides an introduction to the history and major contemporary political, economic, social, religious and cultural features of the South Asia region at large and of selected South Asian nations in particular.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only HST 245 or POS 245 or REL 245 or SGS 245 or SLC 245
SLC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLC	310	Migration and Identity	Represents a fusion of basic theoretical concepts such as globalization, migration, transnationalism and identity with personal narratives in the digital space. Structured in four sections in which students (a) learn a basic theoretical framework of migration studies; (b) listen to and reflect on narratives of migration and identity; (c) learn about digital storytelling; and (d) produce their own digital autobiographical account or interview a migrant. Students engage in a dialogue throughout the course, both in the classroom and in the virtual space (in online discussion forums). In this oral history course, students are at the center of the production of digital stories. At the end of the course students also have the opportunity to provide peer feedback and critically engage in the stories produced in class.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 108 with C or better; Credit is allowed for only ROM 310 or SLC 310 or SLC 394 (Migration and Identity-Digital Storytelling) OR Visiting University Student
SLC	320	Compassion: A Dialogue	Explores different aspects of compassion, understood as an emotion, a mental disposition and a motivation to action. Brings together the sciences, the humanities and the arts for an engaging conversation on the biology, history and ethics of compassion. Studies how scientists, philosophers and religious traditions understand empathy and compassion across cultures and languages. Examines various settings such as health care, justice and politics with attention to systemic oppression (e.g., gender, race, sexual orientation). Also explores how mindfulness and the arts (such as literature, film and dance) can promote compassion. Guest lecturers from various disciplines enrich our perspectives and guide us through practice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 320 or SLC 394 (Compassion: Dialogue btwn Humanities/Sciences/Arts) OR Visiting University Student
SLC	321	Modern Korean Literature	Introduces various genres of Korean literature written from the seventeenth century to the present in English translation. Aims to help students to understand the history of modern Korean literature in transnational and transdisciplinary contexts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only KOR 321 or SLC 321
SLC	331	Arabic/Islamic Culture & Lit	General introduction to the Middle East that synthesizes cultural, social, and literary information. Focuses on the experiences of ordinary Middle Eastern people to convey a grassroots sense of the Middle East.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 331 or SLC 331 OR Visiting University Student
SLC	333	China	Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 333, HST 383 or SLC 333
SLC	334	Modern China: 1700 to Present	Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 384 or SLC 334 OR Visiting University Student

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SLC	336	Interpreting China's Classics	Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 30 hours; Credit is allowed for only CHI 336, HST 386 or SLC 336
SLC	340	Approaches Intl Cinema	Offers a historical survey of major film movements from across the world's national cinemas from the silent era to this day. Explores key cinematic works, situating them in their aesthetic, cultural and political contexts, and tracing their impact on the global cinematic culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 w/ C or better; Credit is allowed for only FMP 340 or FMP 394 (Approaches to International Cinema) or FMS 341 or FMS 394 (Approaches to International Cinema) or SLC 340 or SLC 394 (Approaches to International Cinema)
SLC	343	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
SLC	344	Classics and Comics	Explores the connections between the classical tradition of Ancient Greek and Roman literature and the modern American superhero comic book tradition.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or 105 or 107 with C or better; Credit is allowed for only GRK 344 or LAT 344 or SLC 344 or GRK/LAT/SLC 394 (Classics and Comics) or SLC 494 (Classics and Comics)
SLC	345	Ancient Greece I	Traces Greek History from its prehistoric beginnings through the Peloponnesian War (431-404 B.C.), with a special focus on the Archaic (ca. 800-480 B.C.) and Early Classical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 347 or HST 347 or SLC 345 OR Visiting University Student
SLC	346	Ancient Greece II	Traces the transformation of the Greek world between the end of the Peloponnesian War (404 B.C.) and the absorption of the last major Greek state by growing power of Rome (30 B.C.), with special attention to how Greeks in this period lived and thought and how the period's political and economic changes helped to create new forms of culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only GRK 346 or HST 346 or SLC 346
SLC	347	Modern Israeli Lit in Transl	Modern Hebrew, or Israeli Hebrew, started at the end of the 19th century in Europe and today it is the language of the State of Israel. During this short period modern Hebrew developed literature with its unique local characteristic, as well as universal ideas. Reads and examines four books against their social and historical background.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ENG 347 or HEB 347 or JST 347 or SLC 347 or ENG/HEB/JST/SLC 394 (Modern Hebrew Literature in Translation)
SLC	348	Israeli Society and Culture	Different partitions of the Israeli society, based on ethnic origin, by religious affiliation or by political association. Depicts how Israel is an absorbing immigration state. Israel is a welfare state and the course covers aspects of a welfare state, such as health, retirement, public transportation, art, higher education and more.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only HEB 348 or HEB 394 (Israeli Culture and Society) or JST 348 or REL 311 or SLC 348 OR Visiting University Student
SLC	350	Mediterranean Lifestyle/Italy	Analyzes the Mediterranean lifestyle (food and eating practices) in Italy from a historical/cultural, scientific and sociological perspective. Students first examine the history and regional cultures of the Mediterranean diet in Italy as they analyze its rich biological diversity and history of cultural exchange. Students then gain an understanding of the critical nutrients of the Mediterranean diet and of the scientific evidence for its health benefits, especially how it can help prevent chronic diseases like obesity and type 2 diabetes, which affect more than half of all adults in the U.S. In addition, students keep a food log for one week, which they then analyze in terms of the critical nutrients of the Mediterranean diet. Finally, Italian food cannot be studied without preparing it! As UNESCO points out, the sharing of food is an important part of the Mediterranean lifestyle.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit allowed for only ITA 350 or ITA 394 (Food & Culture: Mediterranean Lifestyle in Italy) or SLC 350 or SLC 394 (Food & Culture: Mediterranean Lifestyle in Italy) OR Visiting University Student

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SLC	351	Tales of Troy	Provides an in-depth exploration of the ancient Greek archaic primary source material, including literary, art historical and archaeological sources. Uses stories about the Trojan War as a theme for the course, but does not limit exploration of the literature, art, history and culture of archaic Greece.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 351 or GRK 394 (Tales of Troy) or LAT 394 (Tales of Troy) or SLC 351 or SLC 394 (Tales of Troy) OR Visiting University Student
SLC	352	Rise & Fall of Ancient Athens	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the end of the Greco-Persian wars in 479 BCE through the rise and decline of Athens (including the Peloponnesian War with Sparta) to the final defeat of the Greek cities by Philip of Macedon in 338 BCE. This holistic study addresses not only the history of this period but also its literature, art and philosophy, with an emphasis on how these phenomena relate to one another. This period advanced to the state that was regarded by later civilizations as their peak, and which inspired Rome and Europe in the Renaissance. Athens, as the cultural center of Greece at this time, boasted the tragedies of Aeschylus, Sophocles, and Euripides, the comedies of Aristophanes, the history of Thucydides, the philosophy of Plato, and the artistic achievement of the Parthenon.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 352 or GRK 394 (Glory that was Greece) or LAT 394 (Glory that was Greece) or SLC 352 or SLC 394 (Glory that was Greece) OR Visiting University Student
SLC	353	Alexander and His Empires	Comprehensive coverage of the cultural and historical world of the ancient Greek civilization from the ascent of Alexander the Great to the Macedonian throne in 338-336 BCE, through the existence of the kingdoms that followed his conquests, until their final subjugation by the Roman Empire in 31 BCE. This holistic study addresses not only the history of this period, but also its literature, art, religion, philosophy and science, with an emphasis on how these phenomena relate to one another. This was a period of massive economic and military expansion (including colonization), accompanied by social dislocation and cultural and scientific innovation. In these respects, this period has much to teach us today.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 353 or GRK 394 (Alexander and His Empires) or SLC 353 or SLC 394 (Alexander and His Empires) OR Visiting University Student
SLC	355	Religious Practice/Modrn Japan	Examines the influence of Japanese religions on Japanese value, culture and society while surveying the major religious traditions of modern Japan focusing on Shinto, Buddhism and new religions. Also explores current religious practices in Japan and how religion interacts with the government, community groups and daily lives of people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only JPN 355 or SLC 355 or JPN 394 (Religious Practice of People in Modern Japan) or SLC 394 (Religious Practice of People in Modern Japan) OR Visiting University Student
SLC	356	Rome from Village to Empire	Provides an in-depth exploration of Republican Roman literature and explores how these primary sources shaped and were shaped by ancient Rome's history and culture during its formative Republican period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 356 or LAT 394 (Rome Before the Empire) or SLC 356 or SLC 394 (Rome Before the Empire) OR Visiting University Student
SLC	357	Rome's First Emperor	Provides an in-depth exploration of Roman literature during the Augustan period, and explores how these primary sources shaped and were shaped by ancient Rome's history, literature and culture during its formative Republican period.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 357 or LAT 394 (Augustus and the Creation of the Roman Empire) or SLC 357 or SLC 394 (Augustus and the Creation of the Roman Empire) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SLC	358	Saving the Roman Empire	In his autobiographical epitaph, the Res Gestae, Augustus, founder of the Roman Empire, claimed to have restored Rome to her former glory. His moral, social and political reforms solidified Roman control of the world and the imperial family's hold on ruling her. Through the next five hundred years, as the power of the empire waned and waxed, Augustus's successors turned time and again to reforming the empire and restoring her to her former glory - to saving the Roman Empire. In doing so they had to deal with problems both external and internal; sometimes their ideas worked, often they did not. Ultimately they failed, and Rome and the western empire fell in CE 476. Examines the rise, decline and fall of the Roman Empire from the perspective of internal and external problems the Empire faced, and asks which reforms worked, which did not work, and why. What could have been done differently? Should anything have been done differently, or was the western Roman Empire always doomed?	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 294/HST 294/LAT 294/SLC 294 (Saving the Roman Empire) or LAT 358 or LAT 394/SLC 394 (Saving the Roman Empire) or SLC 358 OR Visiting University Student
SLC	360	Greece & Rome at War	Familiarizes students with the major battles, leaders and tactics of Classical Greece and Rome. Supplements lectures with student participation including study of original sources, group presentations, and gaming battle simulations. This multifaceted approach gives a greater sense of the evolution of the leaders, armies and tactical systems of the Greeks and Romans.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 360, HST 397, LAT 360, SLC 360 or SLC 394 (Greece and Rome at War)
SLC	361	Roman Religion	Roman religion was never static, despite the best efforts of the Roman state to make it so. Understands the artifacts and procedures of Roman state cult from its earliest origins to the late empire, using ancient literary sources, archaeology throughout the ages and modern scholarly theories. Clarifies the forces that influenced development and change in Roman religion, both internal and external.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAT 361 or REL 361 or SLC 361 or SLC 394 (Roman Religion) OR Visiting University Student
SLC	362	Ancient Greek Religion	Surveys ancient Greek religion, including its gods, ritual practices and festivals. Analyzes the development of the religion over time, and how both ancient and modern figures interpreted its meaning.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 101 or ENG 105 or ENG 107 with C or better; Credit is allowed for only GRK 362, REL 360, SLC 362 or SLC 394 (Ancient Greek Religion)
SLC	363	Ancient Magic and Witchcraft	Examines magical spells, curses, amulets and other materials from ancient Greece and Rome. Students read anthropological discussions of magic worldwide to understand how ancient magic operated, what its function was within Greco-Roman society, and how it developed over the centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GRK 363 or LAT 363 or SLC 363 or GRK 394/LAT 394/REL 394/SLC 394 (Magic and Witchcraft in Antiquity) OR Visiting University Student
SLC	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SLC	373	Roman History I	Traces the growth of Roman power from Rome's humble beginnings in the eighth century B.C. to its domination of the Mediterranean and the transformation of the Roman Republic into the Roman Empire after the Battle of Actium (31 B.C.).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 373 or LAT 373 or SLC 373
SLC	374	Roman History II	The Roman Empire from the reign of the first emperor, Augustus (27 B.C.-A.D. 14), to that of Justinian (A.D. 527-565), focusing on the lives of the Roman emperors, the society and culture of the empire, and the profound changes that eventually contributed to the empire's collapse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only HST 374 or LAT 374 or SLC 374
SLC	375	Intercultural Comm in Korea	Focuses on the fundamental knowledge of Korean intercultural values and communication. Explores and analyzes Korean communication styles and patterns in regard to the relationship between language use in cross-cultural communication, social meaning and cultural motivations. While the main focus is on Korean language, course is conducted in a comparative and interdisciplinary manner on how communicative strategies differ between Korea and other countries (such as China, Japan and the U.S.) due to underlying differences in their cultural values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 30 hours; Credit is allowed for only KOR 375 or KOR 394 (Intercultural Communication in Korea) or SLC 375 or SLC 394 (Intercultural Communication in Korea)

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SLC	385	Cinema and Culture of Spain	Offers a historical and cultural survey of major films from Spain. Studies key works with a focus on their aesthetic, cultural, political and historical context. Trains students to develop the skills to critically view how films are constructed, how films create meanings and values, and how films are connected to the cultural and historical contexts in which they are created and watched.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only SLC 385 or SPA 385 or FMS 394 (Cinema and Culture of Spain) or SLC 394 (Cinema & Culture of Spain) or SPA 394 (Cinema & Culture of Spain) OR Visiting University Student
SLC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	401	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SLC	410	Deaf Culture	Provides students with an overview of issues related to deaf, hard of hearing and comprehensive vision hearing loss (CVHL). Topics include historical, cultural, educational and political issues, technology, arts and literature as it relates to the deaf community. Taught primarily in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASL 410 or ASL 494 (Deaf Culture) or SHS 410 or SHS 494 (Deaf Culture) or SLC 410 or SLC 494 (Deaf Culture) OR Visiting University Student
SLC	414	French&Italian Popular Culture	Popular culture no longer holds the ancillary role traditionally reserved for whatever does not carry the definition of high culture. That popular culture is instead able to provide us with very relevant insights on the identity of a nation and a people is now widely accepted. As a consequence, this class aims at examining popular culture-related artifacts in Italy and France in order to shed a light on crucial issues such as the culture of food and its historical and social significance; the meaning of fashion and design within an urban context, with a special attention to gender roles; the importance of the comics, given in particular the exceptional success the bande dessinée genre is currently enjoying in France throughout the whole age range of the population; the show business with a particular attention to music; and the social function and role of sport with respect to the two dominant sports in both countries (soccer and cycling).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only FRE 414 or FRE 494 (French & Italian Pop Culture) or ITA 414 or ITA 494 (French & Italian Pop Culture) or SLC 414 or SLC 494 (French & Italian Pop Culture)
SLC	415	Korean Popular Culture	Examines production, consumption and interpretation of Korean popular culture in the modern historical context from the early twentieth century to the present. Looks at a range of products and fandom of popular culture, including music, drama, fashion, film and game, focusing on their global circulation to and from Korea through radio, television and online social media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better OR min 45 hours; Credit is allowed for only KOR 415 or KOR 494 (Asian Popular Culture) or SLC 415 or SLC 491 (Asian Popular Culture) or SLC 494 (Asian Popular Culture) OR Visiting University Student
SLC	420	Emotion Acrs Lang, Ctre & Hst	Presents the main academic approaches to emotions that have been developed in the humanities and social sciences. Explores, among other topics: the different notions and constructions of emotions in various languages, societies and time periods; the cross-linguistic and cross-cultural use of metaphorical expressions of emotions; the social functions of emotions; the use of emotions in the formation of identities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 420 or SLC 420 or HEB 494/HEB 598/KOR 494/KOR 598/SLC 494/SLC 598 (Emotions Across Language, Culture, & History) OR Visiting University Student
SLC	421	Japanese Lit in Translation	Readings selected by theme or genre or period from various works of Japanese literature in English translation. May be repeated when topics vary. Graduate students by permission.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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SLC	423	Mafia and Film	Through an analysis of historical, anthropological, literary, political and cinematic texts, explores representations of the Italian organized crime in Italian and American films from the early 20th century to today. Discovers different "Mafias" originating in Italy, but whose reach extends much further, such as the Cosa Nostra in Sicily, the Camorra in Naples, and the 'Ndrangheta in Calabria. Examines the fiction, stereotypes, myths and legends surrounding the mafia through a scrupulous analysis of some of the most important American and Italian films portraying mafia culture. Italians have used the medium of film to address the issue of the mafia, raising awareness about the harsh reality of life in the mafia and the ways in which it reaches into every aspect of Italian politics and society. Explores how Italian mafia films subvert international fascination with the mafioso by disrupting the glamorized myths that are mainly perpetuated by American popular cinema.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better or min 45 hours; Credit for only FMS 423 or ITA 423 or SLC 423 or ITA 494/SLC 494 (Italian Organized Crime in Films & History) or FMS 494/ITA 494/SLC 494 (Mafia & Film) OR Visiting University Student
SLC	425	Colonialism to Climate Change	Allows students to engage with the broader experience of globalization by examining cultural material in relation to the circumstances and conditions of the globalization process. Organized chronologically and divided into four units: the period before European hegemony, the era of European colonialism and imperialism, the period of decolonization and modernization, and the contemporary context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better
SLC	428	Arab Women's Writing	Offers a survey of Middle Eastern women's literary work in English translation. Themes focus on a comprehensive view of women's writing through several lenses, including: gender, religion and socio-political systems to introduce women's writing in modern Arabic literature through the prisms of Arabic literary criticism and feminist theory within historical contexts. Explores different genres, including autobiographical, short stories and novels, and cinematic production. Selective literary texts include leading 20th-century female writers whose works in translation represent a wide range of geographical, ideological and cultural influence. Featured writers include Rajaa al Sania, Latifa Zayyat, Radwa Ashur, Hanan al-Shaykh, Nawal Al Sadawi and others.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ARB 428 or ARB 494 (Arab Women Writing Across Generations/ in Eng) or SLC 428 or SLC 494 (Arab Women Writing Across Generations/ in Eng) OR Visiting University Student
SLC	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
SLC	430	Buddhist Meditation East Asia	Surveys various types of Buddhist meditation in different schools, starting from those of India, and more from East Asia, particularly Japan. Investigates the pragmatic function of each meditative technique, how some of the fine/performing/martial arts were integrated with Buddhist ideas to become "meditation in action."	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only JPN 430 or SLC 430 or JPN 494 (Buddhist Meditation in Asia) or SLC 494 (Buddhist Meditation in Asia) OR Visiting University Student
SLC	439	Vladimir Vladimirovich Nabokov	In English. The scandalous success of Lolita (1955) allowed Vladimir Nabokov to retire from teaching at Cornell University and move to Switzerland to devote himself to fiction, translation, criticism and lepidoptery. This was only one of the many metamorphoses that Nabokov, a Russian noble, underwent while in exile, moving from Russia to the Crimea, Cambridge UK, Berlin, Paris, Cambridge MA, Ithaca, Hollywood and finally Montreux. Examines the Russian roots of Nabokov's Russian (in translation) and American novels about exile: his first novel, Mary (1926), The Defense (1929), Glory (1932), and his tribute to 19th-century Russian literature, The Gift (1938), which he considered his greatest Russian novel. These are followed by Lolita (1955), Pnin (1957) and Pale Fire (1962), his memoirs, Speak, Memory (1966), and some essays and short stories. Films include Lolita by Stanley Kubrick (1962) and Adrian Lyne (1997).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Credit is allowed for only RUS 439 or SLC 439 or ENG/RUS/SLC 494 (Art in Exile: Vladimir Vladimirovich Nabokov)

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SLC	440	Film Theory and Criticism	Examines the major positions and issues in film theory from an historical perspective.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; FMS 100 with C or better; Credit is allowed for only FMS 461 or SLC 440 OR Visiting University Student
SLC	441	Fairy Tales	Foundational fairy tale texts collected by the Brothers Grimm and written by Hans Christian Andersen and their modern permutations reflect basic human desires, fears and aspirations as well as the values of the period in which they are written. These stories and their variants in popular culture across the globe permit students to reflect critically on the functions of fairy tales in both past and present civilizations. Students perceive the ways in which ancient tales can be utilized for various purposes and understand the contemporary theoretical debate on the study of fairy tales and their role in popular culture. Course taught in English.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 102, 105 or 108 with C or better; one other ENG or GER upper-division course with C or better; Credit is allowed for only GER 441 or GER 494 (Fairy Tales), or SLC 441 OR Visiting University Student
SLC	442	Dracula and Vampire Lore	Vampire stories are not only local phenomena placed in Transylvania, as the common stereotype is incessantly spread. Legends about Dracula and the Count himself may be "untrue," but events that took place during the life and reign of the Wallachian Voivode Vlad Tepes, better known as Vlad the Impaler, are nonfictional. He ruled during the time of the Ottoman Empire extension to Europe and his fight against the Turks give us thought on the altered understanding of Vlad as a vampire figure. Occurring and recurring in continuously changed environments, Count Dracula affects everyone to the same degree, but still remains as secret and elusive as before, pitted against a vision of mysterious spaces that evoke the faraway castles from Whitby, UK (the origin of Stoker's Dracula), from Bran and Poenari Castles in Transylvania as well as the visions of Jules Verne's Castle of the Carpathians.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G & H	Prereq(s): ENG 101, 105 or 107 w/C or better; Credit for only ROM 442 or SLC 442 or SLC 494 (Drac&Vamp Belief in the Wrid) or SLC 494 (Drac&Vamp Castles) or SLC 494 (Drac&Vamp Lore) or SLC 494 (Drac:Between Myth&Hist) OR Visiting University Student
SLC	444	Heroes, Ancient and Modern	Explores the heroic literature of the ancient Greeks and Romans, then traces the classical tradition and reception of the classical hero in medieval and modern texts. Incorporates history, art history and material culture from the relevant societies to supplement study of the texts involved.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only GRK 444, LAT 444, SLC 444 or SLC 494 (Heroes: Ancient and Modern)
SLC	445	Holocaust & German Memory	Examines representations of the Holocaust from across different media (literature, film, architecture, memoir, photography) and from across multiple generations of German engagement with this period in history.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, FMS 200, JST 210, or JST 230 with C or better; Credit is allowed for only FMS 445 or GER 445 or JST 445 or SLC 445 OR Visiting University Student
SLC	446	Weimar-Era German Film	Examines early film production in Germany during the period of the Weimar Republic.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, ENG 105, ENG 108, FMS 100, or FMS 200 with C or better; Credit is allowed for only FMS 446 or GER 446 or SLC 446 OR Visiting University Student
SLC	447	German Modernism	Examines examples of modernism in literature, art and film from German-speaking Europe.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only GER 447 or SLC 447
SLC	450	Experimental Narrative	Examines texts that experiment with form, content and narrative perspective within print, film and digital media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): ENG 200 with C or better; one ENG 200- or 300-level literature course with C or better OR minimum 45 hours; Credit is allowed for only ENG 447, FMS 442 or SLC 450
SLC	451	Chinese Cultural History I	China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 451, HST 451 or SLC 451
SLC	452	Chinese Cultural History II	Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G & H	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 55 hours; Credit is allowed for only CHI 452 or HST 452 or SLC 452

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SLC	455	Berlin:Migration,Arts&Activism	Deals with the culture and politics, arts and activism of migrants in Germany based on the example of Berlin, using historical and contemporary examples. Critically engages with such concepts as migration and identity, transnationalism, assimilation, multilingualism, artivism, activism, xenophobia and racism. Examines examples from various art forms, including film and the creative arts, literature, media and social media to help understand the impact of migration and immigrants on Germany and German society and compares it to experiences in other countries, especially the U.S. A focus on Berlin allows an in-depth and focused micro-observation of the differences and commonalities of various immigrant groups and responses of the local communities in a defined urban space. In order for students to reflect on the impact of migration in German society and the migrants themselves, also looks at migration through the lens of movements for social change and justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 455 or SLC 455
SLC	457	PreModern Korea Global Context	Offers a comprehensive outline of the literary and cultural traditions of premodern Korea from historical and crosscultural perspectives. Targets both undergraduate and graduate students. Gives students an opportunity to read a variety of texts ranging from literary works, historical, philosophical and religious documents, diaries and travelogues, to important recent scholarly works in the field. Identifies representative literary works and terms. Discusses important topics and issues on premodern Korean literature and the cultural exchange between Korea and Japan, and Korea and China, bringing to bear students' own thoughts and ideas which are articulated in their final research papers. All readings are available in English translation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): minimum 45 hours; Credit is allowed for only KOR 457 or SLC 457 or KOR 494 (Pre-modern Korean Literature and Cultural Exchange) or SLC 494 (Pre-modern Korean Literature and Cultural Exchange) OR Visiting University Student
SLC	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SLC	460	Brazilian Society Thru Music	Surveys Brazilian popular music in the 20th and 21st centuries, focusing on one main question: What images of Brazil have been imagined by Brazilian popular music in various socio-political contexts? Working with various genres, discusses how issues pertaining to race, social class, and citizenship have contributed to shape the Brazilian popular music scene and its representations of Brazil both at home and abroad. Taught in English. However, students who have completed POR 202 or POR 321 have the option of completing the assignments in Portuguese.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only POR 460 or POR 494 (Contemporary Brazilian Popular Music) or SLC 460 or SLC 494 (Contemporary Brazilian Popular Music) OR Visiting University Student
SLC	465	Intercultural Comm Competence	Focuses on the importance of culture(s) and the ways in which culture(s) effects and interrelates with communication. Communicating across cultures is very important in order for us to be able to function in a globalized, diverse world, e.g., workplace, city. Using our own experiences and discussions as well as the readings, course increases our sensitivity, understanding and awareness of our own culture(s) as well as other culture(s). Approaches the study of intercultural communicative competence in a theoretical and practical way.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only GER 465 or SLC 465 or GER 494 (Intercultural Communicative Competence) or SLC 494 (Intercultural Communicative Competence)
SLC	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student

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SLC	479	Intro to Teaching Foreign Lang	Introduces teaching methodologies, language learning, and current best practice in teaching foreign languages in U.S. middle and high schools.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SLC	480	Methods Teaching Foreign Lang	Teaching foreign languages and literatures at secondary and college levels. Does not meet the The College of Liberal Arts and Sciences General Studies requirement for humanities and fine arts. Required for admission to SED 478.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SLC 479 with C or better
SLC	481	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441
SLC	482	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SLC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	485	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student
SLC	486	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SLC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SLC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		Pre-requisite: minimum 56 hours
SLC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLC	510	CALL Praxis	Offers graduate students an in-depth practical experience in Computer-Assisted Language Learning (CALL) praxis, including tools, approaches to using technology in the language classroom, the techniques and best practices of online instruction, and the development of a teaching portfolio.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Pre- or corequisite(s): APL 557, ENG 557, or SLC 557; Credit is allowed for only APL 558 or SLC 510
SLC	515	Second-Language Acquisition	Discusses and applies theories of second-language acquisition.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SLC 400
SLC	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545

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SLC	546	Heritage Language Pedagogy	Sociolinguistic and pedagogical issues around the teaching and learning of heritage languages. Through a close examination of seminal articles in the field of heritage language pedagogy and research, students gain an understanding of the issues that concern these students and the teaching of this population. Defines the field, describes heritage language learners, and discusses the goals and sociolinguistic concerns of HL instruction. Also reviews the most appropriate teaching methodologies and principles for the heritage language classroom, especially in relation to literacy development. Contains a practical component that includes observations together with lesson plan and material development to prepare future teachers for effective classroom experiences and/or language program development. Course requirements include critical essays, online discussions, class observations, lesson plans and a research/applied paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 546 or SPA 546 or SPA 598 (Heritage Language Pedagogy)
SLC	547	Applied Linguist Online Learn	Technology has changed the way we teach and learn languages. Examines how online language learning is informed by research and theory; explores how different tools and environments can support online language learning. Familiarizes students with research methods and tools used to examine online language learning. Participants either design and develop the instructional materials for an online course of their choice or design and conduct a research project.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 547 or SPA 547 or SLC 598 (Topics in Applied Linguistics: Online Learning) or SPA 598 (Topics in Applied Linguistics: Online Learning)
SLC	551	Global Approaches to Trans	Familiarize students with various approaches to translation practice. Examines issues related to the cultural role of translation. Students [re]pare a translation, justification of translation choices, and discussion of the complexities posed by the translation. Readings address a broad array of translation theories, with most focused on translation as a globally theorized phenomenon in the 20th and 21st centuries. Readings and discussions focus on how one translates, and on translation as a culture-making enterprise inextricably tied to the questions of who translates, in what context, for whom, and to what ends. Students understand translation theories from different eras and cultures; understand how translation is implicated in different forms of intercultural contact (colonialism, commerce, proselytization); gain experience translating texts from a source language into English; and can explain why they translated the way they did.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	557	CALL	Explores the field of computer-assisted language learning. Traces the development of computer-assisted language learning (CALL) over the last three decades. Focuses on research that explores how computer technology can help facilitate second language development; relies primarily on empirical data to do so. Examine established as well as new research methods in CALL. Participants participate in one research study and apply theoretical and practical aspects of CALL in these projects.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only APL 557 or ENG 557 or LIN 591 (Intro to Computer Assisted Language Learning) or SLC 557
SLC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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SLC	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stđnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
SLC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SLC	602	Comparative Cultural Theory	Trains SILC Ph.D. students in a range of theories and methods of cultural analysis and comparison, and explores some of the conceptual tools used in the production of comparative studies scholarship. Exposes students to texts by authors from diverse historical and geopolitical contexts and encourages them to reflect upon these various commentaries on the nature and interpretation of culture and cultural production. Discussion centers on the relationship between cultural production and material realities and on the interdependence of cultural production and social, economic and political issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SLC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SLC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SLC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student

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SLV	304	Digital Humanities Lang Majors	Not limited to language majors (Slavic or otherwise). Students complete course projects using the material of their language of interest (the language they are taking interest in, including English). This course focuses on the following topics in digital humanities: (a) audio-visual representation of the content in humanities, (b) computer-assisted learning and assessment, (c) digitizing printed resources, (d) data and text mining, (e) working textual corpora, (f) statistical analysis, (g) computational lexicography, (h) data extraction and manipulation. While emphasizing hands-on skills, this course also familiarizes its participants with the basic concepts in the fields of digital humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only SLC 304 or SLV 304
SLV	440	History of Slavic Languages	Comparative evolution of East Slavic, West Slavic, and South Slavic languages from the earliest record to the standardizing of national languages in the 19th and 20th centuries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SLV	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SLV	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SLV	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SLV	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
SLV	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SLV	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SMC	562	Advanced Human Factors	In-depth study of the issues, methods, and findings in industrial and organizational psychology.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Human Systems Engineering	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only PSY 562 or SMC 562
SOC	101	Introductory Sociology	Fundamentals of sociology, organization of human groups and society, processes of interaction, and social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Credit is allowed for only SOC 101 or SOC 301 OR Visiting University Student
SOC	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		Pre-requisites: Freshmen; maximum 25 earned hours
SOC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	210	Sociology of Murder	Sociological perspectives on various forms of murder and types of murderers. Also considers forms of punishment for murder.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only FOR 210 or SOC 210
SOC	220	Sport and Society	Examines sports in American society as a source of socialization and an institution where gender, race/ethnicity, and class interact.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	241	Modern Social Problems	Race relations, poverty, unemployment, and other current issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	264	Gender and Society	Analysis of the development, nature, and consequences of gender in contemporary society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only FAS 264 or SOC 264 OR Visiting University Student
SOC	270	Racial and Ethnic Relations	Problems of minorities in heterogeneous societies. Evaluates theories of prejudice and research dealing with discrimination, desegregation, and assimilation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	
SOC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student

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SOC	312	Adolescence	In-depth examination of the developmental and social processes that help explain modern adolescence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): Minimum 24 hours; SOC 101, PSY 101(PGS 101), FAS 101 or FAS 330 with C or better; Credit is allowed for only CDE 312 or SOC 312 OR Visiting University Student
SOC	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & H & C	Prerequisite(s): ENG 101, 105 or 107 with a C or better; minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
SOC	315	Courtship and Marriage	In-depth study of courtship, marriage, and related processes, focusing on problematic aspects of these institutions from the sociological perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	320	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
SOC	324	Work and the Workplace	Historical and comparative examination of changes in the structure and meaning of work and current shifts in people's work lives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Credit is allowed for only FAS 324 or SOC 324 OR Visiting University Student
SOC	325	Globalization&Socio-Econ Just	Addresses a trend producing increasing interconnectedness of economies and societies, as well as creating new conflicts and divisions. Provides greater understanding of global forces, as well as the effect of these forces on global economic justice.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; minimum 2.00 GPA; Credit is allowed for only JUS 325 or SGS 325 or SOC 325 OR Visiting University Student
SOC	328	Migration and Culture	Examines migration and culture embedded in a transnational field of social, economic and political processes.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 340 or SOC 328 OR Visiting University Student
SOC	331	Environmental Sociology	Analyzes human organizational responses to population growth, technological change, and environmental stressors on both a national and global scale.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): minimum 45 hours
SOC	332	The Modern City	In-depth analysis of the growth, characteristics, and problems of the modern city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 24 hours OR Visiting University Student
SOC	333	Population	Global trends in population growth, composition, and distribution; theories, policies, and impact of population trends on environmental quality and development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	334	Technology and Society	Development of technology in relation to society, work, science, the environment, public health, and cultural values related to social change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only ASB 344 or SOC 334 OR Visiting University Student
SOC	339	Grassroots Social Movements	Explores how groups mobilize collectively to produce social, political, economic and cultural change, with an emphasis on the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 339 or POS 339 or SBS 339 or SOC 339 OR Visiting University Student
SOC	340	The Sociology of Deviance	Sociological analysis of stigmatized behaviors and conditions, including the causes, effects, and management of stigma.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or SOC 301 OR Visiting University Student
SOC	342	Mexico-U.S. Borderlands	Contemporary examination of socioeconomic and political dimensions of border communities, and formation of Mexican-origin communities within and outside the Southwest.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & C	Credit is allowed for only ASB, SBS or SOC 342
SOC	343	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342
SOC	350	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
SOC	352	Social Change	Patterns of social change, resistance to change, and change-producing agencies and processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G & H	

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SOC	353	Death&Dying Cross-Cultur Prsp	Scientific and humanistic approaches to the study of death and dying from the perspective of anthropology and allied disciplines. Uses a global, comparative approach across space and time from the earliest human burials to contemporary funeral events.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3-4	(HU or SB) & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 353 or SOC 353 OR Visiting University Student
SOC	354	Global Politics of HumanRights	Examines political forces that have shaped gradual construction of an international human rights regime and a universal culture of rights, including civil and political rights, as well as economic, social, and cultural rights.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 352 or SOC 354
SOC	355	Human Rights Organizations	Investigates the emergence and evolution of the organizations and institutions designed to promote and protect human rights at global, regional and national scales. Explores reasons why it is necessary to institutionalize human rights, the trial and error process that led to postwar international human rights regime, challenges and the future of human rights.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only JUS 355 or JUS 394 (Human Rights Organizations and Institutions) or SOC 355
SOC	356	Central American Studies	Part of the summer ASU study abroad Costa Rica Program, which is a language and social sciences immersion program in the capital city, San Jose. A summer offering permits students to enroll in the program without conflicting with full course loads during the fall or spring semester. However, the course is proposed as a stand-alone course that can be offered in a regular semester as well. May be repeated once for credit.	N	REC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	Credit is allowed for only ASB 356 or GCU 356 or POS 354 or SBS 356 or SOC 356
SOC	360	Sociological Psychology	Interaction patterns between the sociocultural order and individuals; socialization process; norms, roles, and statuses; collective behavior.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101, PSY 101(PGS 101), FAS 101, or FAS 330 with C or better; Minimum 24 hours
SOC	363	Men and Masculinity	Sociological analysis of how masculine identity is defined, negotiated, and variously constructed depending upon class, ethnicity, age, and sexual orientation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101
SOC	364	Popular Culture and Society	Studies the social approaches to popular culture, focusing on the function of various forms (literature, film, theatre, and music).	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Prerequisite(s): minimum 45 hours
SOC	365	Sociology Mass Communication	Sociological exploration of the major mass media as a communicative process in American society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	366	Film and Society	Studies the social approaches to film as an art form, mass medium, and ideological construct.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or ASB 394 (Inequality and Sustainability) or SOC 371 or SOS 371 or SOS 394 (Inequality and Sustainability)
SOC	374	Internet Cultures and Politics	Explores the culture and politics of the Internet in global perspective, including virtual communities, free software, copyleft, blogs, and hacktivism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	Credit is allowed for only ASB 374, POS 374, SBS 374 or SOC 374
SOC	378	Migration and Society	Application of social scientific theories and principles in order to understand the social and ethnic consequences of international migration with a focus on the United States. Students will communicate views formulated from empirical evidence and reasoned analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & C	Prerequisite(s): ASB 102 or SOC 101 with C or better; 45 minimum hours
SOC	389	Ethnographic Field Lab	Hands-on, guided ethnographic qualitative research and interpretative analysis.	N	LAB	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-6		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 389 or SBS 389 or SOC 389
SOC	390	Social Statistics I	Descriptive and inferential statistical methods for analysis of social data. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	CS	Prerequisite(s): MAT 142 or higher with C or better OR Visiting University Student
SOC	391	Research Methods	Methods of social science research, including the fundamental assumptions underlying research, critique, research design, data collection, and data analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; CDE 232 or SOC 101 with C or better; PSY 230, SBS 304, SOC 390, or STP 226 with C or better; Credit is allowed for only FAS 361 or SOC 391 OR Visiting University Student
SOC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	400	Perspectives on Aging	Broad overview of gerontological issues; e.g., physical aging, retirement, living options, caregiving, theoretical background, death.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB	

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SOC	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
SOC	415	The Family	Family considered from the institutional viewpoint; in-depth look at its historical development and its adaptation to a changing culture; analysis of the family system in many cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, 330, PSY 101(PGS 101) or SOC 101 with C or better; minimum 30 hours
SOC	418	Aging and the Life Course	Examines aging as a process of change and adaptation over the lifespan, patterned by social, cultural, and historical forces.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & H	Prerequisite(s): FAS 101, 330, PSY 101 or SOC 101 with C or better; minimum 30 hours; Credit is allowed for only CDE 418 or SOC 418 OR Visiting University Student
SOC	420	Sociology of Religion	Interrelationship of culture, society, and religion; religion and social stratification; religious, economic, and political institutions; social change and religion. Emphasizes American society and institutions.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
SOC	421	Education and Society	Uses contemporary sociological perspectives to examine effects of schools and schooling on individuals and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 421 or SOC 421 OR Visiting University Student
SOC	424	Women and Health	Women as healthcare workers and an in-depth analysis of issues of health, illness, and healthcare for women	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): FAS 101, FAS 330, PSY 101, or SOC 101 with C or better; minimum 30 hours OR Visiting University Student
SOC	425	Women, Work, and Justice	Examines gender inequality in the workplace, including the nature of women's work, theoretical issues, and models for promoting gender justice at work.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 420 or SOC 425
SOC	426	Social Inequality	Examines stability and change in social inequality based on class, race and gender, and in the context of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	
SOC	427	Sociology of Health/Illness	Social aspects of illness and sociological analysis of the healthcare system and its practitioners.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	432	Racial Justice	Racial inequality remains a dominant theme in understanding social, legal, and economic justice in the U.S. today. Explores controversial topics surrounding race and justice. Emphasizes current legal, economic, political, and social conceptual frameworks.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours. Credit is allowed for only JUS 432 or SOC 432 OR Visiting University Student
SOC	435	Adv Marriage/Family Relationships	In-depth examination of research, issues, and trends relating to marriage and family interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better; SOC 101, PSY 101, FAS 101 or 331 with C or better; minimum 30 hours; Credit is allowed for only FAS 435 or SOC 435 OR Visiting University student
SOC	437	Women, Power, and Politics	The roles and treatment of women within various political contexts. Specific focus may vary with instructor.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only POS 437 or SOC 437 OR Visiting University Student
SOC	443	Sociology of Corporations	Examines corporations as social institutions and the implications of their status as a legal person on politics, culture, and economy.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	445	Globalization,Devel&Resistance	Explores the interconnections among globalization, development, and grassroots movements for social change in Africa, Asia, and Latin America.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	448	Epidemics and Society	How epidemics occur; how they are perceived in society; how epidemics affect society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	
SOC	451	Comparative Sociology	Cross-cultural study of basic social institutions; the methodology of cross-cultural research.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB & G	

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SOC	455	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOC	456	Political Sociology	Social factors associated with voting; nature and structure of the electorate and political parties and the nature of national and international power structure.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		
SOC	457	Global Social Movements	Examines how groups mobilize across borders to pursue social goals, including equality, justice, peace, and salvation in a global context.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3	SB & G	
SOC	460	Leadership and Change	Advanced understanding of leadership and the development of proposals for innovative plans that enhance the well-being of children, youth and families.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): minimum 60 hours; Credit is allowed for only FAS 460 or FAS 498 (Leadership Research & Collaboration in Change) or SOC 460
SOC	469	Multivariate Stats for Soc Sci	Provides instruction and hands-on experience with statistical methods for examining the effects of multiple variables. Focuses on multivariate techniques and how statistical techniques can lead to a better understanding of substantive issues. As this is an applied course, lectures and coursework focus more on the application and interpretation of multivariate techniques than on the mathematics behind the statistical techniques. Topics typically include data visualization, correlation, simple regression, multiple regression, logistic regression, multinomial regression, ordinal regression, and principal component analysis. Also teaches how to conduct these statistical techniques and undertake basic programming in the R computer program.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): ECN 221, GIS 270, PSY 230, SOC 390, or STP 226 with C or better; Credit is allowed for only CDE 469 or GIS 469 or SOC 469 or CDE 498/GIS 494 (Multivariate Statistics for Social Sciences) OR Visiting University Student
SOC	483	History of Social Thought	Social thought in human culture. Background of modern sociology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
SOC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	486	Contemporary Theory	Contemporary issues and crises in social theory with major focus on particular theorists. Ideological factors in theory, philosophical issues, the nature of theory and its relationship with methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3	SB	Prerequisite(s): SOC 101 or 301 OR Visiting University Student
SOC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SOC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		
SOC	497	Honors Colloquium	A class emphasizing discussion, written and/or oral presentation by students, and active participation.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-6		Prerequisite(s): Barrett Honors student
SOC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-7		
SOC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-3		
SOC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOC	501	Social Statistics	Understands and uses statistics for applications in the social sciences.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only CDE 501, SOC 501 or SOC 598 (Statistics for Social Sciences)
SOC	505	Applied Regression Analysis	Multiple linear regression topics relevant to social science data analysis. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 505; Graduate students only (degree and non-degree)
SOC	507	Categorical Data Analysis	Logistic regression and related topics relevant to categorical data analysis in social sciences. Computer applications.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 507; Graduate students only (degree and non-degree)
SOC	508	Structural Equation Analysis	Theory and application of structural equation modeling. Path analysis and latent variable models such as CFA, multiple group analysis and models for longitudinal data. Projects involve conducting analyses and writing results.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 508; Graduate students only (degree and non-degree)
SOC	509	Event History Analysis	Proportional hazards models and other methods for analyzing longitudinal data and establishing hazard rates of events for exploratory variables.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Pre-requisites: Credit is allowed for only FAS or SOC 509; Graduate students only (degree or non-degree)
SOC	510	Bayes Analyses Social Science	Discusses principles and practices of Bayesian approaches to statistical inference and modeling. Topics include: philosophical underpinnings of Bayesian inference; associated interpretations of probability; univariate and multivariate models prevalent in the social sciences; Markov chain Monte Carlo estimation; data-model fit; model comparisons procedures; missing data analyses. Course consists of lectures, demonstrations of software, reading assignments, homework assignments and a project. Exposes students to key concepts in Bayesian methods and gains technical foundations necessary to be consumers and contributors to applied and methodological research. Assumes previous knowledge of statistics through multiple regression, and recommends additional topics: multivariate statistics, latent variable modeling, probability theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CDE 591 (Bayesian Analyses in the Social Sciences) or CDE 591 (Introduction to Bayesian Analyses) or FAS 510 or SOC 510
SOC	512	Secondary Data Analysis	Works with existing data to produce a publishable article.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only FAS or SOC 512
SOC	515	Studies of the Family	Current developments in the study of marriage and the family.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	516	Family Demography	Current developments in the study of family demography.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	523	Social Stratification	Overviews significant themes, issues, and bodies of work in the field of social stratification, a fundamental topic of sociological inquiry.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	533	Demographic Methods	Emphasizes methods and techniques in demographic analyses such as life tables.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		
SOC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	585	Sociological Theory	Analyzes major sociological theories, from classical to contemporary.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	586	Capstone I	Professional exploration and goal specification for non-thesis capstone project.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree-seeking graduate student in the Sanford School of Social and Family Dynamics; Credit is allowed for only FAS 586 or SOC 586
SOC	587	Capstone II	Develops professional expertise and area of focused interest.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): FAS 586 or SOC 586. Credit is allowed for only FAS 587 or SOC 587
SOC	588	Capstone III	Applies developed expertise and knowledge to professional goal.	N	PRA	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): CDE 501 or SOC 501; CDE 531 or SOC 585; FAS 500 or SOC 500; FAS 587 or SOC 587; 12 additional graduate-level hours in CDE, FAS, and/or SOC; Credit is allowed for only FAS 588 or SOC 588

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SOC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	603	Sociological Inquiry	Provides an overview of core theoretical frameworks and associated analytic approaches in sociology. Taught by faculty members from across the university with sociological training or research interests, providing students with foundational and advanced research tools as well as introducing them to ongoing research at ASU, the distinctive contributions of sociological perspectives to inter- and transdisciplinary projects, and potential opportunities for research residency.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	685	Applied Social Theory	Overviews main classical and contemporary theoretical paradigms and concepts in sociology and provides advanced training on using them to build empirical analytic models. Students identify theoretical perspectives appropriate for research questions, build corresponding conceptual frameworks, and formulates testable hypotheses. Seminar format and therefore students' active participation is expected.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-12		
SOC	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOC	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	Sanford School of Social and Family Dynamics	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	100	Introduction to Sustainability	Introduces basic concepts, global trends, and local responses, philosophical, ethical, and cultural dimensions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	G	Prerequisite(s): Non-Sustainability majors or non-Sustainability concentrations OR Visiting University Student

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SOS	101	Intro Appl Math Life & Soc Sci	Introduces quantitative techniques as applied to problems in the life and social sciences. Includes challenges like understanding the complexities of the human genome or the implications of globalization for infectious disease, human health, and economic stability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): MAT 117 or higher with C or better or ALEKS score of 61 or higher; Credit is allowed for only AML 100 or SOS 101 OR Visiting University Student
SOS	110	Sustainable World	Lays the groundwork for understanding the fundamental geological, biological, and social processes that gave rise to the world we live in and continue to maintain its viability for human life.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB	
SOS	111	Sustainable Cities	Introduces technological, social, and cultural principles and innovations for cities under the notion of sustainability and sustainable development within the global, regional, and local contexts.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(HU or SB) & G	Credit is allowed for only PUP 190 or SOS 111 OR Visiting University Student
SOS	117	Food System Sustainability	Food systems are particularly important for human societies to sustain and are also particularly vulnerable to multiple threats related to the interconnected sustainability challenges we face. Introduces the concepts and issues involved in food systems sustainability. Divided into four modules, the first three of which address the other systems with which food systems interact—socio-ecological, socio-cultural and socio-technical systems. The final module addresses the future of food systems. Teaches students about the main issues in food system sustainability and allows students to enhance their critical thinking skills by applying them to the many sustainability challenges associated food system activities via solutions-based learning including the social, ecological, economic and institutional dimensions.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		
SOS	171	The Thread of Energy	Follows the thread of energy through every aspect of our lives. Discusses the technical, social, legal, and policy contexts of all energy resources, including present and unconventional fossil fuels, nuclear power, and renewable resources. Addresses energy use throughout history, the influence of energy on quality of life, the role it plays in political strategies and environmental quality, how it shapes our neighborhoods and cities, its contribution to our personal comfort and national security, and how its importance is reflected in the worlds of business and the humanities. Its dual role is as a stand-alone introduction to energy, and as a first step to more advanced studies of energy in the natural, technical, and social sciences.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB & G	Credit is allowed for only GCU 171 or SOS 171 OR Visiting University Student
SOS	181	Tech, Social, & Sustain System	Introduces the importance and role of technological, social, and sustainable systems in the modern world. Provides a framework for the theory and practice of sustainable engineering.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	HU	Credit is allowed for only SOS, FSE or CEE 181
SOS	182	Water Planet	Overview of the processes that control water supply to natural ecosystems and human civilizations. Part I introduces the basic science that helps us understand the water planet, including the hydrologic cycle, glaciers and ice; rivers, oceans, and natural hazards associated with water such as flooding, landsliding and tsunamis. Part II covers some of the management and resource allocation topics that face humanity today, including droughts, groundwater contamination, impacts on fisheries, conflicts over water, patterns of water use, and effects of global climate change on future water supplies. Uses water issues facing Arizona and California as examples.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4	SQ	Credit is allowed for only GLG 108 or SOS 182 OR Visiting University Student
SOS	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-3		
SOS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	201	Introduction to ASU and SOS	Introduces all ASU transfer students to the unique elements, culture, challenges and opportunities of the university.	N	LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS or Sustainable Food Systems BS major; minimum 24 hours OR Visiting University Student
SOS	210	Society and Environment	Examines the interaction among social processes, key environmental issues, and nature's role as a resource at global and regional scales.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	G	Credit is allowed for only GPH 210 or SOS 210

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SOS	211	Calculus and Probability	Introduces two of the most important and useful mathematical frameworks used to study natural and social phenomena: probability and calculus. Probability is used to describe an attitude of mind toward some proposition whose truth is not certain. Calculus is the branch of mathematics used to study the behavior and dynamics of functions: calculus is the mathematical study of change. Students gain the basic competence needed for applying probability and calculus when thinking about and research problems in sustainability. Focuses on and discusses applications, the meaning of important concepts, the origins of the rules of derivation and integration, and logic behind why the methods work.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	MA	Prerequisite(s): AML 100 or SOS 101 with C or better OR Visiting University Student
SOS	212	Systms.Dynamics&Sustainability	Introduces the evaluation and construction of mathematical models used in the life and social sciences. Includes the basic steps in developing a model, analyzing it, and testing it with actual data. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, linear regression, and solving equations using computer software.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 211 OR Visiting University Student
SOS	215	Fund of Sustainable Food Sys	Introductory food course provides students with a panoramic understanding of American agriculture. Explores American-grown food through history, policy, society, business innovation, and environmental sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 215 or SFS 215 or SOS 215 OR Visiting University Student
SOS	216	The Sustainable Plate	Introductory food course explores agriculture by subsectors, such as livestock, grains and fruits and vegetables. Students learn how dietary choices affect health, the environment, and the people who produce and process food.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only AGB 216 or SFS 216 or SOS 216
SOS	220	Systems Thinking	Introduces systems thinking and complexity science, with an emphasis on analytical relevance for thinking about a myriad of issues involved in sustainability. Hones students' abilities to read critically, articulate their views clearly, and think about the many systems that shape their lives.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	230	Professional Skills-Sustainabi	Builds interpersonal competence, which is a key competence in sustainability. Students work on a small hands-on sustainability project in order to practice professional skills in four domains: teamwork, project management, self-directed and continuous learning, and stakeholder engagement. Students learn how to effectively collaborate in teams, use project management tools to achieve quality products in time, innovate their ways of learning, and create productive dialogue with stakeholders.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better
SOS	231	Careers in Sustainability	Aids in career exploration and development for School of Sustainability majors. Explores values, motivations and career options. Students learn how to approach the job search and how to communicate sustainability to employers; also how to prepare a quality résumé, cover letter, and gain a better understanding of the benefits of networking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): Sustainability BA or BS major or Sustainable Food Systems BS major; PUP 190 or SOS 111 with C or better; SOS 110 with C or better; minimum 45 hours OR Visiting University Student
SOS	232	Prof Skills in Sustainability	Students learn how to effectively and compassionately communicate, engage in collaborative teamwork, use project management tools to achieve quality products on time, innovate their ways of self-directed and continuous learning, engage with stakeholders on solutions, and ensure mindful self-care. Students work on a sustainability project, practicing this set of professional skills in a real-world context.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	272	Environmental Justice	Surveys key environmental justice issues and movements. Uses interdisciplinary social science perspectives to review and analyze U.S. and international case studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	SB	Credit is allowed for only ASB 272 or SOS 272
SOS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		
SOS	300	Adv Cncpts & Intgrtd Approches	Integrates disciplinary contributions to sustainability, teaches advanced concepts in sustainability, and explores methods for identifying sustainability challenges and generating solutions. Focuses on diversity of sustainability research, and integrates specialized approaches in sustainability. Advanced concepts in sustainability, including systems-thinking, complexity, nonlinearity, cascading effects, coupled natural-human systems, governance, future thinking, unintended consequences, normative concerns, transformation, power, participation, and equity.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 100, 110, 111 or PUP 190 with C or better; minimum 45 hours OR Civil Engineering (Sustainable Engineering) BSE major OR Visiting University Student

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SOS	309	Hist & Phil of Sustainability	Examines sustainability issues in a broadly interdisciplinary way, but with a special emphasis on humanities perspectives, focusing on human ideas, values and institutions as they have evolved over time.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102 or 105 or 108 with C or better; minimum 25 hours; Credit is allowed for only HST 308 or PHI 322 or SOS 309 or BIO/HST/PHI/SOS 394 (History & Philosophy of Sustainability)
SOS	310	Equity, Justice & Sustainblity	Introduces the "social justice" aspects of sustainability science and practice. Sustainability problems are a special class of problems arising from a complex set of issues spread across time, space and institutional scales. These problems can threaten underlying social, economic and ecological systems which are highly intertwined and interdependent. Explore these issues through study of both theory and practice.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	311	Future Thinking and Strategies	Offers a critical introduction to future-oriented theories and methods. Explores anticipation in contemporary society through a series of cases studies that probe real-world sustainability issues and how the future is created and contested. By characterizing and critiquing future-oriented practices across governmental, academic and private sectors, offers a critical perspective on different methodological approaches and the implications of their use.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): PUP 190 or SOS 111 with C or better; SOS 110 with C or better OR Visiting University Student
SOS	314	Basic Energy Science	Explains the concepts of the science of energy for those without a background in engineering. Allows non-engineering students to better grapple with the issues that surround sustainable energy issues. Covers the most common methods of electricity generation as well as renewable technologies and fuels.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SOS	315	Energy Policy	Examines the regulation of energy production and consumption in the U.S. at the federal, state and local levels. Identifies energy stakeholders in the U.S. and examines how they have shaped U.S. policies around energy. Explains past and current U.S. energy policies and how energy needs have shaped U.S. relations with other countries. Compares U.S. energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the U.S.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SGS 315 or SOS 315 OR Visiting University Student
SOS	320	Society and Sustainability	Establishes an understanding of the human, social, and cultural dimensions of sustainability from multi- and interdisciplinary perspectives and at a variety of spatial and temporal scales.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prereq(s) with C or better: Sust or Bus (Sust) mjr; ENG 101, 105 or 107; SOS 110; SOS 111 or PUP OR Non-Sust mjr with 2 of the following courses: SOS 100, SOS 110, SOS 111 or PUP 190, SOS 300; ENG 101, 105 or 107 OR Visiting University Student
SOS	321	Policy & Gov in Sustain Systms	Explores the wide array of political questions that are raised when we view the Earth's environment as an integrated, global system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	322	Intl Development&Sustainability	Historical roots of the idea of development; economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	323	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student

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SOS	324	Sustainable Energy Tech & Sys	Comprehensive survey of current and future energy systems; thermodynamics and energy analysis; environmental, economic and social impacts; resources, technologies and infrastructure for electricity and transportation.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	325	Economics of Sustainability	Applies economic principles to the allocation of environmental goods and services, external environmental effects, and environmental public goods; decision-making under uncertainty, adaptation to and mitigation of environmental change.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	326	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning, and the provisioning of ecosystem services; use of economic and other social science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	327	Sustainable Food and Farms	Food systems and sustainability. Theories of food security, rural livelihood sustainability, and food sovereignty. Critically examines the social, ecological, economic, and institutional dimensions of the many sustainability challenges associated food system activities (production, processing, distribution, consumption, waste). Students develop a food system framework and apply knowledge to an assessment of the sustainability of one aspect of the local food system.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereqs: Sustainability, Sustain Food Syst, or Business (Sust) major; SOS 110; SOS 111 or PUP 190 OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	328	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today. Delves into more specific case studies of attempts by current businesses to become greener and more sustainable, exploring challenges and opportunities that are commonly found as well as how decisions are often made in today's business settings and by whom. Explores alternative enterprise models and examples of businesses that are using the current context to redefine the sustainability and enterprise. Given the emergent nature of this effort, uses timely and real-world examples from current events where possible. Explores and applies an integrated approach to sustainability and enterprise. Readings include popular texts, original research articles and current events.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability or Business (Sustainability) major; SOS 110 and 111 (or PUP 190) with C or better; OR Non-Sustainability major with 2 courses: SOS 100, 110, 111 (PUP 190), SOS 300 with C or better OR Visiting University Student
SOS	330	Sustaining the Commons	Equips students with tools to analyze the conditions in which communities can be successful in managing their common resources such as forest, water and clean air. Students learn the institutional analysis and development framework to evaluate such collective action problems. Applies this approach of analysis to various sustainability topics from irrigation systems and fisheries to climate change and energy systems in urban environments.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; SOS 110; SOS 111; Credit is allowed for only SOS 330 or SOS 394 (Sustaining the Commons) OR Visiting University Student
SOS	343	Latinas/os and the Environment	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/s population in the U.S. Southwest.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)

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SOS	344	Culture&SocietyTransformation	Uses video documentaries and movies to explore the way in which cultural values, economic background and human interaction impact and transform societies. Societal changes in Central and Eastern Europe make a good case study for contrasting and comparing with other societies and understanding global trends and issues in today's world.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB & G	Prereq(s): ENG 101, 105, or 107 with C or better; Credit for only ASB 345 or ASB 394 (Cult & Soc Transform) or JUS 343 or JUS 394(Cult & Soc Transform) or ROM 343 or SLC 343 or SLC 394 (Cult & Soc Transform) or SOS 344 or SOS 394 (Cult & Soc Transform)
SOS	349	Nature,Sustainability&Religion	Explores how world religions have conceptualized the natural world, what they have contributed to the current environmental crisis and how they might also serve as inspiration to address the crisis. By focusing on Judaism, Christianity and Islam, the course introduces students to the field of religion and ecology and explores its relationship to other academic disciplines such as environmental philosophy and ethics, justice studies and gender studies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours; Credit is allowed for only HPS 349 or JST 349 or REL 349 or SOS 349 or JST, REL, or SOS 394 (Religion and Ecology) or JST, REL, or SOS 394 (Religion and Environment)
SOS	353	The Western Diet	Hybrid course covering political, ethical, social and cultural issues inherent in the U.S. food system. Topics include examination of U.S. food guidance; the food system and food environment; the history of food and farm policy; food security and aspects of sustainability in relation to food system impacts on the health of humans, society and the environment.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only NTR 353 or NTR 394 (The Western Diet: Food, Health, & Sustainability) or SOS 353
SOS	363	Cells to Society	Equips students with concepts and empirical examples they need to understand the role of complexity in the world around them. Complexity science is based on the fundamental principle that entities and phenomena in the world around us are systems composed of many parts that interact to produce their global characteristics. For example, cells interact to produce organs and tissues, which in turn interact to produce physiological processes (i.e., the capacity to metabolize food to produce new compounds and energy) and physical infrastructure (skeletal and muscular structure) which produce organisms. Organisms, (e.g., humans) interact to form groups, villages, cities, nations.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AML 394 (From Cells to Societies) or ASB 363 or ASB 394 (From Cells to Soc) or BIO 363 or BIO 394 (From Cells to Soc) or SOS 363 or SOS 394 (From Cells to Soc) OR Visiting University Student
SOS	370	Ethics of Eating	This multidisciplinary course examines the elements of modern food systems and current ethical issues regarding food production, distribution and consumption. Also provides a foundation for investigating the effects of social inequality in food systems and global and local responses to address those challenges.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	L or SB	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ASB 370 or ASB 394 (Production, People, and Environments) or ASB 394 (Ethics of Eating) or SOC 370 or SOS 370 or SSH 370
SOS	371	Inequality and Sustainability	Efforts to shift societies onto a sustainable trajectory are facing profound challenges from the degree and dynamics of global inequalities of income, wealth, and life chances. Data and ideas from a spectrum of disciplines are employed to examine, analyze, and criticize the prospects for redressing global inequalities in a sustainable manner.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ASB 371 or ASB 394 (Inequality and Sustainability) or SOC 371 or SOS 371 or SOS 394 (Inequality and Sustainability)
SOS	372	Earth Science in AZ & the SW	Place-based application of geology and allied Earth system sciences to explore and interpret the landscapes, rocks, geologic history, climate, resources, and natural hazards of Arizona and the Southwest. Integrates case studies of the interactions of Southwest cultures and societies (past and present) with Earth systems, and inquiry into the future sustainability of Southwestern communities and lifeways.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, 105 or 107 with C or better; GLG 101, 102, 110, GPH 111 or SES 121; MAT 117 or higher; Credit is allowed for only GLG 301 or GLG 394 (Earth Sci in AZ & SW) or SOS 372 OR Visiting University Student
SOS	373	Minerals, Energy, and Society	Studies the science and technology of the minerals and energy industries, how these industries interact with society, and how these interactions may change in the future.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 101, ENG 105 or ENG 107 with C or better; GLG 101, GLG 102 or GLG 110 or GPH 111 or SES 121 or Junior standing; Credit is allowed for only GLG 304, GLG 394 (Minerals, Energy & Society) or SOS 373

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SOS	374	Earth's Critical Zone	The Earth's near surface environment (the "critical zone") supports most life and is the dynamic interface between the solid Earth and its fluid envelopes where much of the geologic record is produced. We now know that we face rapid climate change and the consequences of changes in land use, water resources, and ecosystems. Critical to planning a response to, or mitigation of, environmental change is understanding how the Earth surface works. Focuses on how changes to the environment manifest themselves in the critical zone--in the form and function of the Earth's surface (landforms, water resources, soils, ecosystems). Offers a quantitative introduction to the form and function of the processes impacting the Earth's critical zone to build an understanding of the interactions of physical, chemical and biotic processes in shaping the surface and determining fluid, solute and sediment fluxes.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereq(s) w/ C or btrr: GLG 101 & 103 or SES 121 & 123; BIO 100, 181, 182, 281, 282 or CHM 101, 107, 113, 114 or PHY 101, 111, 121, 150 or SES 220 & 225; MAT 170, 171, 210, 251, 265 or 270; Creditor only GLG 327 or SOS 374 OR Visiting University Student
SOS	375	Humans and the Environment	How do diverse human groups across global ecosystems (desert, tropics, arctic, alpine, urban) interact with and adapt to their environments and how are these relationships changing in response to globalization, climate change and other social, historical and political-economic drivers? Cultures situated in landscapes are the basis for an incredible global diversity of worldviews and behaviors that in turn affect how humans experience and "use" their environments. This course will provide an introduction to current and benchmark literature and methods in environmental and ecological anthropology that address people-environment interactions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; min 45 hours; Credit is allowed for only ASB 375 or SOS 375 or ASB 394 (People: Env Connections in Anthropology) or ASB 494 (Ecological & Environmental Anthropology) OR Visiting University Student
SOS	380	Entrepre for AI Sustainability	Concentrates on developing a product or service idea, creating an entrepreneurial model and plan to implement the product or service in the context of an AI sustainable venture (profit and nonprofit). Begins with a review of established AI context with additional focus on tribal economic development throughout the course. The innovation process executed during the semester and the resulting product/service ideas and choices. Students are also encouraged to embark on new venture ideas as well. Students are then introduced to all aspects of venture (profit and non-profit) and entrepreneurial model creation, including strategy, product/service development planning, marketing, operations, alliances, management, finance and investment. In parallel, teams continue refinement and, where possible, further prototyping of the idea they chose from the previous semester and/or creation of new high-impact, high-potential ideas.	N	LEL	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AIS 385 or AIS 394 (Entrepreneurship for American Indian Sustainability) or SOS 380
SOS	385	Business & Sustainability I	First of two related courses; provides a general overview of sustainability topics that are important to business today with a focus on consumer products and services and the social and environmental impact of the organizations that provide them.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 60 hours; SCM 300 or SOS 110 with C or better; Credit is allowed for only SCM 385 or SOS 385 OR Visiting University Student
SOS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prereqs: Sustainability or Business (Sust) major; SOS 110 & SOS 111 (or PUP 190) w/C or better OR Non-Sustainability major with 2 of the following courses: SOS 100, SOS 110, SOS 111 (or PUP 190), SOS 300 w/C or better OR Visiting University Student
SOS	412	Conservation in Practice	Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only BIO 412 or SOS 412
SOS	414	Urban and Environmental Health	Integrates theory and practice of social sciences (including anthropology, demography, and human geography) to understand environmental contexts of health, particularly urban.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3	SB	Prerequisite(s): AML 100, ASB 100, 102, 222, 223, ASM 104, SOS 100, 110, 111 with C or better; minimum 45 hours
SOS	421	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 with C or better; Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521 OR Visiting University Student

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SOS	424	Dynamic Modeling	Introduces the development and use of dynamic mathematical models to study social and ecological phenomena.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): MAT 210, 251, 265, or 270 with C or better; Credit is allowed for only ASM 424 or BIO 424 or SOS 424 OR Visiting University Student
SOS	429	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): BIO 320 (or SOS 326); Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	433	Sustainable Water Use	A clustered learning network on the problem of water scarce regions, includes insights from hydrology, engineering, biology, economics and public policy. May be repeated once for credit.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		
SOS	434	People-Nature:EcosystemService	Explores the drivers of biodiversity change and the consequences they have for human wellbeing, taking both an ecological and an economic perspective.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Pre-requisites: MAT 117 or SOS 101; Junior standing. Credit is allowed for only BIO 434, SOS 434, or BIO 494 (Ecosys Servcs:People&Nature)
SOS	435	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Credit is allowed for only SOS 435 or SOS 494 (Energy and Environmental Policy) or SOS 494 (US Energy: Pathways to Sustainability) or SOS 555 or SOS 594 (Energy & Environmental Policy)
SOS	441	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s) with C or better: AML 253, or SOS 210(or SOS 294 Intro to Math Tools & Modeling). Credit is allowed for only AML 441 or 494 (Math Concepts & Tools in Sustainability) or SOS 441 or 494 (Mathematical Concepts and Tools in Sustainability)
SOS	442	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
SOS	456	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3	(L or SB) & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 456 or JUS 497 (Seminar in Human Rights) or SOC 455 or SOS 456
SOS	463	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
SOS	465	Sustainable Urbanism	Examines the history, practice and core ideas of "sustainable urbanism," including leading thinkers, tools and strategies up to the present day. Topics include codes, metrics, certifications, charters, the Sustainable Development Goals and the New Urban Agenda.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prereq(s) w/C or better: Sustainability major or in a sustainability concentration; SOS 110; SOS 111 or PUP 190; min 45 hours OR non-Sus major, non-sus conc; PUP 301; Credit is allowed for only PUP 465 or PUP 565 or SOS 465 OR Visiting University Student
SOS	467	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or ART 567 or ART 598 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)
SOS	474	Collaborative Design Develop I	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 464 (or MGT 464) or GRA 464 or IND 464 or SOS 474 OR Visiting University Student
SOS	475	Collaborative Design Dev II	Team-based product development course featuring applied projects. Open to senior students from business, engineering, design, and other disciplines.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	5	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only ENT 465 (MGT 465) or GRA 465 or IND 465 or SOS 475 OR Visiting University Student
SOS	476	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Also considers recent climate science-related controversies, as well as assessments of scientific statements related to these controversies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only GLG 476 or GLG 576 or SOS 476 or SOS 576 or GLG 494 (Climate Sci Sustain) or GLG 598 (Climate Sci Sustain) or SOS 494 (Climate Sci Sustain) or SOS 598 (Climate Sci Sustain)

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SOS	480	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Challenges students to explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 110, SOS 111, PUP 190 with C or better if completed; Credit is allowed for only SOS 480 or SOS 494 (Achieving Career Success in Sustainability)
SOS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): School of Sustainability undergraduate student
SOS	485	Business and Sustainability II	Second of two related courses focusing on the environmental, social and economic dimensions of sustainable technologies and exposes students to a variety of related concepts and theories. Describes technology hotspot analysis, life cycle assessment and a variety of models of technology forecasting and diffusion.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SCM 385 or SOS 385 with C or better; Credit is allowed for only SCM 485 or SCM 494 (Business and Sustainability II) or SOS 485
SOS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Barrett Honors student
SOS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	College of Global Futures	School of Sustainability	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SOS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): Sus or Bus Sus major; SOS 110 w/C or better; SOS 111 or PUP 190 w/C or better OR non-Sus major w/2 of the following courses: PUP 190, SOS 100, SOS 110, SOS 111, SOS 300 w/C or better OR Visiting University Student
SOS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Global Futures	School of Sustainability	1-7	L	Prerequisite(s): School of Sustainability undergraduate student; ENG 101, 105 or 107 with C or better; minimum 9 hours of SOS upper-division courses
SOS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	SEM	Y	Z1	College of Global Futures	School of Sustainability	1-3		
SOS	501	Foundations of Sustainability	Provides a knowledge base to help students to succeed in the online MSL program. Supports MSL students in the four learning threads of the program, which include communications and sustainability, global context, strategic sustainability and sustainability leadership.	N	LEC	N	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	502	Tools & Techqs Sustainability	Forthcoming federal legislation and Executive Orders will set new standards for operational efficiencies, energy and water conservation, use of renewable energy sources, and waste minimization in the Army and Army National Guard. Tools and Techniques for Sustainability presents a systems approach to meet those standards by integrating principles of sustainability into existing Army policies, procedures, and reporting systems. The course features the Framework for Sustainable Strategic Development as an organizing framework to analyze systems and develop strategic plans to move toward sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Global Sustainability Leadership certificate student; Pre- or co-requisite: SOS 501
SOS	503	Operational Sustainability	Sustainability is a means to addressing the significant physical, statutory, and regulatory requirements that affect and can encumber the Army's ability to train Soldiers at ranges and maneuver areas across the United States. With hundreds of imperiled species proposed for federal protection in the next few years, threatened and endangered species and sensitive habitat will continue to be a concern. Participants in Operationalizing Sustainability will explore how innovative training practices, improved land and natural resource management practices, and enhanced community relationships can ensure continued access to the land and water assets needed to maintain readiness and can help to 'win hearts and minds.' Proactive approaches to promoting well-being for soldiers, families, civilians, neighbors, and communities, both at installations and downrange, are stressed.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502

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SOS	504	Energy & the Built Environment	Provides practical approaches to applying sustainability principles and practices to public works activities, housing, facilities operations and management, military construction, master planning, and energy management. Presents approaches to implement high-performance sustainable building design, construction, operation and management, maintenance, and deconstruction. Also covers cost-effective, innovative strategies, such as highly reflective and vegetated roofs, to minimize consumption of energy, water, and materials.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	505	Sustainable Military Acq & Log	Sustainable Military Acquisition and Logistics provides practical approaches to applying sustainability principles and practices to all areas of procurement, acquisition, and logistics. Through weapon systems acquisition or procurement of installation goods and services, the Army hopes to drive innovation and promote sustainability while reducing costs. The inclusions of energy and resource efficiency and other sustainability criteria in acquisition and procurement decisions can reduce long-term operation and maintenance costs, conserve resources, and continue to expand innovation throughout the supply chain. This course introduces the application of sustainability principles to procurement and acquisition, transportation, and materiel. The use of life cycle analysis and multicriteria assessment for all 10 classes of supply is also featured significantly in the course.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Sustainability Leadership certificate student; SOS 501; SOS 502
SOS	508	Pathways to Sustainability	Covers the fundamentals of sustainability and sustainability science. Gives beginning graduate students, or prospective graduate students, a broad look at sustainability using global examples that prepare them for future coursework in the field. As such, exposes students to the concepts and competencies, with examples, that are essential for achieving sustainability outcomes. Explains, in detail, the essential competencies a student of sustainability must attain in order to be appropriately equipped for graduate coursework and/or working in the field. Finally, examines sustainability leadership; that is, how to move from the what and the why of sustainability challenges to the how to use knowledge and skills to initiate sustainability solutions in various organizations.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	509	Leading Sust Transitions	The vast majority of organizations must significantly change their operational models in order to become sustainable. Leaders must determine how to champion this change, generate momentum, and align internal reward systems to facilitate these transitions. Exposes students to different change models that are applicable to private, public and nonprofit organizations. Introduces a variety of practical cases that serve as a foundation to apply different frameworks that help transition organizations toward being sustainable.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	510	Perspectives on Sustainability	University-wide course covering basic perspectives on sustainability. Uses case studies; faculty and students from engineering, architecture, social sciences, and natural sciences exchange ideas on the major challenges faced in forming a sustainable future at the local, national, and global levels.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student
SOS	511	Adv Sustainability Prob Solvng	Conveys advanced procedures of how to identify and analyze sustainability problems and how to develop solution visions and strategies that can solve and mitigate sustainability problems. Introduces and facilitates training in how to use an integrated framework for sustainability problem solving, which is applicable to all sustainability-related professions. Prepares students for their applied projects on sustainability solutions.	N	LEC	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): School of Sustainability graduate student
SOS	512	Environmental & Resource Econ	Microeconomic theory applied to problems of the environment and natural resources, principles of nonmarket valuation of the environment, market failures in the provision of environmental goods and services, dynamic management of natural capital stocks, the economics of sustainable development.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	513	Science for Sustainability	Key ideas, concepts and principles of sustainability science that focuses on the dynamic relationship between society and nature. Examines the structure, functioning and dynamics of coupled human-environment systems (CHESs) on local, regional and global scales with a systems perspective. Covers major sustainability science issues including: fundamentals of ecology, energy, agro-food systems, renewable and non-renewable resource systems, economic development and human well-being.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	514	Human Dimensions of Sustain	Concepts and definitions of the human dimensions of sustainability; the role of attitudes and values in shaping sustainability goals, practices, and programs; the diversity of values and socio-cultural contexts relating to sustainability; bottom-up and top-down sustainable policy development, social data collection methodologies.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GCU or SOS 514
SOS	515	Industr Ecol & Design for Sust	The conceptual, ethical, and practical challenges in the design, manufacture, and life cycle performance of products; environmental evaluation via materials flow analysis and life cycle assessment; global economic, environmental, cultural, and social aspects of competitive and functional product development and manufacture.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only CEE 582 or SOS 515
SOS	516	Science, Tech & Public Affairs	Explores the political, economic, cultural, and moral foundations of science and technology policy and governance in democratic society.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 515 or GLG 547 or HSD 515 or PAF 547 or SOS 516
SOS	517	Sustainability and Enterprise	Examines the evolving interface between sustainability and human enterprise. Explores and reviews key fundamental concepts in the sustainability arena, including economic and scientific drivers and select historical and structural aspects that create the current context for the enterprise and sustainability interface found today.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 517 or SOS 591 (Sustainability and Enterprise)
SOS	518	Uncertainty & Decision Making	Knowledge is always incomplete, yet decisions must be made. Explores uncertainty and its relation to decision making, with a particular focus on the ways that science and science-derived information is applied with the intent of improving decisions. Explores the many meanings and origins of uncertainty, using theoretical and case-based approaches. A central theme is the relation among uncertainty, scientific prediction, and decision making, especially in politically charged issues, for example as related to management of the environment. Ultimately understands how effective decisions can be made in the face of inevitable uncertainties and contested knowledge.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ASB 517 or BIO 517 or BIO 591 (Uncertainty & Decision Making) or HSD 517 or POS 527 or SOS 518
SOS	519	Research Data Management	Provides foundations of sound research data management. Upon completion of the course, students are aware of tools and approaches to effectively manage research data from project inception through publication of both findings and data. Topics include sound data management principles, version control, database concepts, metadata generation, data management plans, research collaboration, and tools for data processing (e.g., spreadsheets, R). This is a hands-on course in which students perform exercises with sample data and/or their own research data.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 519 or SOS 494 (Research Data Management) or SOS 598 (Research Data Management)
SOS	520	Research Design	Provides skills and knowledge that help students design their own research and place it in the context of other disciplines or bodies of work. Not a "methods" class because no specific method is taught in depth. Instead, it is an initial introduction to the research design process and is intended as a platform through which students develop the skills to appreciate and contextualize the approaches taken (and methods used) by others, and during which they can identify the types of specific training they require as they define their own research.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Pre- or corequisite(s): SOS 510; Credit is allowed for only SOS 520 or SOS 598 (Intro Design/Mthds)
SOS	521	Landscape Ecology	Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only BIO 421 or BIO 521 or SOS 421 or SOS 521

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SOS	522	Qualitative Methods for Sustai	Theory and application of qualitative methods to sustainability research and practice. Students define and frame a sustainability problem and apply a range of qualitative methods to it, articulate the strengths and weaknesses of these methods, and have a framework for assessing the appropriate use and evaluation of qualitative methods.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 522 or SOS 591 (Qualitative Methods for Sustainability Problems)
SOS	525	SETS Domains and Interfaces	Guide students in developing an integrated approach and framework for thinking about complex systems in a sustainability context. Presents overviews of content, theories and methods from each of the SETS domains (Social, Ecological and Technical Systems); primarily focuses on how to bring these domains together. Explores the SETS interfaces (intersections) from an integrated perspective and equips students to make those linkages in their research and in subsequent elective courses. Each semester students use a sustainability problem or theme to explore the concepts presented in the course.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	526	Sustainability Science	Addresses core ideas in sustainability science--an emerging field of research dealing with the interactions between human and environmental systems. The problem that motivates the course is the challenge of sustainability: improving the well-being of present and future generations in ways that conserve the planet's life support systems over the long term. Students critically discuss a set of presentations and papers covering the field in a systematic way, drawing on and integrating contemporary research from earth systems science, resource economics, institutional analysis, ecology, geography, development studies, health sciences, engineering, and other disciplines. Covers from the theory of sustainability to its multiple applications in the field and explores the impacts of different value systems on both theory and applications.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 526 or GCU 526 or SOS 526 or BIO 591 (Sust Sci: Int Btwn Hum &Env Sys) or GCU 591 (Sust Sci: Int Btwn Hum &Env Sys) or SOS 591 (Sust Sci: Int Btwn Hum &EnvSys)
SOS	527	Environ Ethics & Policy Goals	Advanced seminar in applied environmental ethics, focusing on the most influential and policy-relevant approaches in the field of environmental ethics. Core topics include the historical and philosophical foundations of alternative understandings of environmental responsibility; the debate over utility and preservation in environmental policy argument; and the interplay of ethical principles, scientific knowledge and societal priorities in environmental decision making. Consideration of the ethical and value dimensions of biodiversity conservation, wilderness protection, environmental valuation, environmental activism, climate change and sustainability, among other challenges.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only BIO 527 or SOS 527 or BIO 591 (Environ Ethics & Policy Goals)
SOS	528	Human Impacts: Ecosys Function	Explores our current understanding of how humans are impacting the functioning of ecosystems and how changes in ecosystems would affect provisioning of ecosystem services and ultimately human well-being. The two primary drivers of ecosystem change are growth of the human population and increased consumption per capita. These drivers affect the Earth's cycles of carbon, nitrogen and water, as well as regional and global-scale changes in biodiversity and climate. Includes an in-depth discussion of scenarios for the next 50 and 100 years, which articulate costs and benefits of alternative development pathways in terms of climate change, food production, clean water and biodiversity. Scenarios of change in biodiversity lead to the topic of the consequences of biodiversity change for the functioning of ecosystems from the point of view of their productivity and stability. Human activities have disrupted several biogeochemical cycles including nitrogen and carbon cycles.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only BIO 429, BIO 528, SOS 429, SOS 528, or SOS 494/598 (Human Impacts on Ecosystem Functioning), or BIO 494/598 (Human Impacts on Ecosystem Functioning)
SOS	529	Sem in Environ and Sust Econ	Runs in parallel with the ASU-wide biweekly seminar in Environmental and Resource Economics in that class sessions consist exclusively of these seminar sessions. Research presentations in the seminar are given by graduate students, faculty and visiting speakers.	N	SEM	Y	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	530	Intl Development&Sustainability	Historical roots of the idea of development: economic theories of growth and their implications for sustainability; interrelationship among population growth, food security, poverty, inequality, urbanization, technological change, international trade, and environmental change at local, regional and global scale.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	531	Achieve Sust Career Success	The need for sustainability-minded workers and leaders has never been more important than right now. Yet sustainability as a career track is still very new and means different things to different people. Students explore their own ambitions and "personal brands," to shape their work personas, to model the behaviors and competencies that build long-term career success, and to uncover the sustainability potential of any job, whether or not "sustainability" is in the job title.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 510; Credit is allowed for only SOS 531 or SOS 598 (Achieving Career Success in Sustainability)
SOS	532	Sustainable Urban Dynamics	Human and physical processes shaping urban ecologies and environments; human-environment interactions in the context of an urban region; effect of the institution and regulatory framework on the ability of social and urban-ecological systems to be resilient and sustainable; urban design, materials, transport, planning, and regulation.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	533	Sustainable Water	Hydrological, legal, political, and ecological implications of alternative water management strategies; effect of institutional and regulatory frameworks; changes in water demand and supply due to human (population growth, economic changes) and natural (drought, climate change) factors	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	534	Sustainable Energy & Matl Use	Sustainable engineering; overall energy needs and impacts; thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CEE 516 or SOS 534
SOS	535	Sustainable Ecosystems	How human activities and management practices alter biodiversity, ecosystem functioning and the provisioning of ecosystem services; use of economic and other social-science perspectives to estimate the value of ecosystem services; evaluation of options for achieving the sustainable flow of services from ecosystems.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only ELS 535 or SOS 535
SOS	536	Food System Sustainability	Broad view of food systems and the sustainability of such systems. Concepts, theory, methods and empirical analyses from diverse disciplines, including agro-ecology, agronomy, political science, agricultural economics, geography, anthropology, and food and nutrition studies. Studentso choose a theme that is a core concern to food system sustainability and pursue that theme in diverse course activities and through engaging in the broader food system we are embedded in as residents in the Phoenix area. Culminates with a term paper/project that synthesizes experience and knowledge, providing a unique perspective on their role in food systems.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	537	Disasters Opportunity for Sust	Explores how disasters can give rise to sustainability transitions and sustainability solutions. Disasters are revealing crisis. As hazards roll into disasters they lay bare the underlying conditions of socio-ecological vulnerability and inequities that affect almost all aspects of daily life. They also affect the infrastructures and institutions supporting daily life. This realization stimulates improvisation and ideas for just, green, inclusive and resilient futures. Investigates case studies to reconstruct how people, affected by and surviving a disaster, advanced sustainability transitions and reduced disaster risk. Uses an interdisciplinary perspective to analyze these transitions, drawing on theories of change from sustainability transitions and transformation as well as disaster management research. Moreover, students ground the literature in concrete experiences as shared through guest speakers, professional experiences, documentaries and an applied project.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only CPP 537 or SOS 494 (Disasters as Opportunities for Change Towards Sust) or SOS 537 or SOS 598 (Disasters as Opportunities for Change Towards Sust)

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SOS	540	Statist. Modeling for Sustain.	Equips students with sufficient knowledge of statistical theory and methods of applied data analysis to begin conducting empirical analyses in their domains of interest; bring students to a high level of competency in using a cutting-edge statistical software package (Stata) for data management and data analysis tasks; expose students to applications of statistical methods in the economics/policy/social science sustainability literatures in order to develop an understanding for how statistical tools are operationalized in the research world; and develop an appreciation for the careful synthesis of social and natural science theory, knowledge of data and its limitations and command of statistical tools that constitute quality empirical research.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	4		Prerequisite(s): degree- or non-degree-seeking graduate student; Credit allowed for only AML, ESS or SOS 540
SOS	541	Math Concepts/Tools in Sustain	Explores various mathematical analysis and models pertinent to sustainability science drawn from both social and natural sciences and introduced in a problem-based context. Demonstrates basic concepts from game theory such as pure-strategy and mixed-strategy Nash equilibriums in such classic games as prisoner's dilemma, hawk-dove, coordination. Explores the evolutionary dynamics of these games through the replicator equations. Studies important concepts of stability and regime shift for selected problems. Also discusses some basic solution concepts in cooperative game theory (depending on interest and time).	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit allowed for only AML 494 (Math Concepts & Tools in Sustainability), AML 541, SOS 494 (Math Concepts & Tools in Sustainability), SOS 541 or SOS 598 (Math Concepts & Tools in Sustainability)
SOS	542	Sustainability Indicators	Measures of sustainability (or sustainable development), focusing on sustainability indicators and indices (SIs). Discusses key conceptual and methodological issues on gauging sustainability and examines a wide range of sustainability indicators and indices that have been commonly used at global, regional and local scales.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only SOS 442, 494 (Sustainability Indicators and Indices), 542 or 598 (Sustainability Indicators and Indices)
SOS	545	Creating Sustainable Orgs	Sustainability is a strategic concern for managers in all types of organizations: private, public and nonprofit. Forward-thinking managers are redefining their operational strategies to balance economic development, environmental quality and social justice needs. By drawing on practical cases and a real-time project with a local client, students explore these connections through multiple lenses. Topics covered include creating organization change, involving stakeholders, transformational vs. incremental sustainability, sustainability market strategies, strategic alliances, enhancing the organization value from sustainability initiatives, and assessing organization sustainability.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only PAF or SOS 545
SOS	546	Life Cycle Assessment	Covers fundamental and advanced concepts of the life cycle assessment framework exploring products, services, activities and infrastructure systems. Examines key concepts for system boundary selection, functional unit selection, inventorying, impact assessment and interpretation stages with a focus on energy and environmental assessment. Advanced concepts include allocation of effects, problem formulation for assessing footprints versus decisions or policies, and assessment of infrastructure interdependencies and supply chains. Exposes tools and data sources and presents approaches for evaluation of sensitivity and uncertainty of results. Encourages students with broad sustainability interests to enroll and explore how life cycle assessment can aid their work by shifting their views from direct to cradle-to-grave effects.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only CEE 506 or CEE 598 (Lifecycle Assessment) or SOS 546 or SOS 598 (Lifecycle Assessment)
SOS	547	Urban Infrastructure Anatomy	Understanding how built environment infrastructure systems interact with ecosystem services is critical for policies and decisions directing urban sustainability. Brings together students from several disciplines to develop a semester-long research project focused on a particular urban sustainability problem in Phoenix. During the semester, students are given background on how infrastructure systems work and are interdependent, and explore tools and methods for urban sustainability assessment with peers from several disciplines. As a class, students evaluate a particular urban sustainability problem for Phoenix, interact with local policy and decision makers in developing solutions, and present their findings at the end of the semester to the ASU community.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only CEE 507 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or PUP553 or 598(Urban Infrastruct Anatomy/Sustainable Dev) or SOS547 or SOS598 (Urban Infrastr Anatomy & Sustain Dev)

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SOS	548	Transformational Sust Entrepren	Familiarizes students with concepts and examples of sustainable entrepreneurship models that are radically different from conventional business models. With a focus on small- and medium-sized enterprises, students learn about structure and function of sustainability-oriented benefit corporations (B Corps), cooperatives, business incubators, impact investment companies and other models. Discusses each model in general and then illustrates through one or more business case studies from around the world. Guest speakers (sustainability entrepreneurs) from Arizona, interdisciplinary peer teaching and learning, online elements, a field visit, and review panels provide a diverse and active learning environment. Open to graduate students from across Arizona State University and has included in the past students from as many as 7 different graduate programs.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate; Credit is allowed for only SOS 548 or SOS 598 (Transformational Sust Entrepreneurship)
SOS	552	Adv Earth Systems Engr&Mgmt	Advanced introduction to earth systems engineering and management, and the technological, economic and cultural systems underlying the terraformed Earth.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only CEE 581 or SOS 552
SOS	553	Chngng Human-Nature Relatnshp	Explores key concepts in Western and non-Western thinking now intersecting in the Anthropocene to influence human interactions with and descriptions of Nature. Humans may protect Nature, but simultaneously use/overuse resources and drive change in social-ecological systems. Examines evolving assumptions about Nature, values/world views, progress, change, uncertainty, rationality, knowledge, tradeoffs and control/management, using a range of theoretical lenses (e.g., environmental/ecological/historical anthropology, culture, geography, ecology, economics, institutions, economic development, complex systems and sustainability science). Also studies a set of iconic Human-Environmental challenges and examines how theories and assumptions explain behaviors and human, ecological and policy outcomes. In turn, focuses on lessons that emerge for interdisciplinary scholarship. Encourages students to apply methods, concepts and theories to their evolving research questions.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASB 530 or SOS 553
SOS	555	US Energy: Pathways to Sustain	Organized around four mores of energy and environmental policy: energy supply, technology for efficiency, environmental sustainability and infrastructure. Also incorporates the wider context of energy and the environment in the society in which we live, taking into account our historic past and future potential life experience with energy availability and use. Through critical examination and analysis of these mores, students apply knowledge to the creation of a comprehensive energy and environmental policy plan that addresses past conditions, present states and future possibilities.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit for only SOS 435, SOS 494 (Energy & Environ Policy) or SOS 494- US Energy: Pathways-to Sustain or SOS 555 or 594 (US Energy: Pathways to Sustainability) or SOS 594 (Energy & Environmtl Policy)
SOS	557	GSS Sust Research Prep	First part of the project track of the double-degree master's program Global Sustainability Science (GSS). The project track runs from semester 1 to semester 3/4. This course prepares GSS students to develop their research proposal as well as to conduct sustainability research in transnational teams.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	558	GSS Sust Research Project	Takes a solutions-oriented sustainability learning approach in which students work on real-world sustainability solutions and collaborate in small teams coached by instructors. Trains students in the use of an analytical-evaluative framework for sustainability solutions and applies it to different solution efforts.	N	RSC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 558 or SOS 594 (Global Sustainability Research)
SOS	559	GSS Perspectives Seminar	Seminar fulfills four functions: (1) students get familiar with sustainability research areas and faculty across ASU, based on the collective interest of the GSS cohort; (2) students receive training on scientific writing; (3) students have the opportunity to participate in a community of sustainability students that supports exchange, bonding and peer-teaching; and (4) students reflect on and provide feedback on the GSS program and their academic development, as well as receive feedback on their pathway through the program and beyond (career opportunities).	N	SEM	N	OPT	College of Global Futures	School of Sustainability	1		Prerequisite(s): SOS 557

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SOS	567	Art and Ecology	Designed for students with advanced independent studio art practices or sustainability studies students who have an interest in the way that their lives and practices engage environments. Through readings, slide presentations, discussions, guest visits, hands-on activities and screenings, explores the work of many contemporary ecological artists engaging with environments and environmental issues from a multitude of angles. Artists engage land remediation, agriculture, socio-ecological justice, sustainable materials, landscape design and much more. As cultural workers must be informed, the course content addresses some basic literacy with regard to environmental concerns and shares examples of realized accessible sustainable solutions. In addition to learning about ecologies and artists, students complete three art or research projects, inspired by assignments.	N	STO	Y	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ART 467 or ART 494 (Art and Ecology) or SOS 467 or SOS 494 (Art and Ecology) or SOS 567 or SOS 598 (Art and Ecology)Pre-req for SOS 567
SOS	570	Fundamentals of CAS Science	Many phenomena of critical relevance to human society are dynamic systems that change over individual and evolutionary time scales, and are highly interactive, both within and between systems. That is, they are complex adaptive systems (CAS), and thus share isomorphic properties like near-decomposability, hierarchical organization, scale-free networks, self-organized criticality, and emergence. Fundamentals of CAS science explores the diverse, interdisciplinary applications of a complex adaptive systems across the social, behavioral, and life sciences.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ASM 570 or BIO 570 or CAS 570 or SOS 570
SOS	571	Sustainable Energy Tech & Sys	Provides a primer on the scientific, technological and social aspects of energy. Includes three core modules: (1) primer on physical, economic and environmental metrics used to measure energy; (2) a review of power systems and electricity generation technologies; and (3) a review of transportation systems and fuel/vehicle technologies. Focuses on energy technology and also incorporates discussions of the human dimensions of energy systems.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	572	Sustainable Energy Transitions	A sustainable future requires a transition away from fossil fuels. This process is far more complex than a simple substitution of fuels. Energy transitions are multifaceted and complex social phenomena, involving economic, technological and political processes that unfold across decades. Delves into these processes for past energy transitions, addressing how energy use evolved throughout history, how it influenced urbanization and socioeconomic development, and how technological change facilitates and constrains energy transitions. What do past energy transitions tell us about how easy or hard it will be to undergo another energy transition?	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	573	Sustainable Energy Policy	Provides a comprehensive survey of energy policies that are shaping the transition to sustainable energy. For context, begins with two views of energy transitions: interdisciplinary socio-technical perspectives and conventional environmental economic perspectives. Next, examines theory and case studies for numerous policies, including carbon pricing, regulatory standards, subsidies, utility regulation, community energy and innovation policies. Lastly, discusses the political drivers and energy system impacts of energy policies.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	574	Data Analytics for Sust Energy	Examines the data sources, methodologies and metrics used to measure sustainable energy and explores how they are used to shape public policy and track progress toward sustainability goals. The metrics, which relate to cost, efficiency and environmental impacts, provide the foundation for assessing the relative merits of energy technologies and systems based on a variety of criteria. In addition to quantitatively evaluating a multiplicity of energy sources and systems, the course builds skills in research methods, data analytics and critical thinking.	N	LEC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SOS	575	Sust Energy Res Sem	Seminar-based course for sustainable energy Ph.D. students focusing on research skills for interdisciplinary energy research. Taken over two years. Second-year students are expected to take on more of a leadership role in the class and to contribute more developed research presentations in the spring semester. The seminar has a different focus in the fall and spring. In the fall, the course focuses on research methods. In the spring, the course focuses on the process of generating research ideas and writing effective research proposals.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	576	Earth's Past Climates	Dynamic interactions among the oceans, earth surface and atmosphere that control Earth's climate in its present state, in the context of past climates and projections for future climates. Assesses the factors that affect the trajectory of future climate change, and the sources and measurement of the critical climate parameters that are essential for guiding decisions for a sustainable future. Considers recent climate science-related controversies and assessments of scientific statements related to these controversies.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only GLG 476 or GLG 576 or GLG 494/598 (Climate Science for Sustainability) or SOS 476 or SOS 576 or SOS 494/598 (Climate Science for Sustainability)
SOS	577	Interdisciplinary Writing Sem	If you want your work to make a difference in the world, you need to be able to communicate your ideas to diverse audiences in a way that is interesting and accessible. Teaches students to write clearly, persuasively and ethically to people in their disciplines, in other disciplines, and outside academia. Approaches writing as a way to think critically and refine ideas, as well as to communicate them to others.	N	SEM	Y	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is only allowed for ESS 577 or SOS 577 or SOS 598 (Interdisciplinary Writing) or SOS 598 (Writing Seminar)
SOS	578	Writing Papers for Publication	Students produce a draft of a research paper for submission to a peer-reviewed journal. Analysis of exemplary published papers and narrative strategies, along with peer review, support the writing process.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	2		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SOS 578 or SOS 598 (Writing Papers for Publication)
SOS	579	Proposal Writing	Proposal writing and reviewing with a focus on the NSF dissertation improvement grant format. Discusses professional development.	N	SEM	N	OPT	College of Global Futures	School of Sustainability	3		Credit is allowed for only ASM 579 or SOS 579
SOS	581	Synthesis for Sustainability	Aimed at students who have already gained training in content areas and are writing their research or projects for publication in peer-reviewed journals or other outlets. Challenges students to link their own research to other disciplines and the broader field of sustainability research.	N	RSC	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): SOS 510; SOS 520; SOS 525; Corequisite(s): SOS 596 or 599
SOS	582	Project Management for Sustain	Provides exposure to the tasks and challenges facing project managers, i.e., those people responsible for the vital function of managing complex projects in sustainability in today's environment. Successful project managers have the abilities and skills to simultaneously manage people, schedules, risks, and resources while delivering successful outcomes. This course is a prerequisite for the MSUS culminating experience.	N	LEC	N	OPT	College of Global Futures	School of Sustainability	3		Prerequisite(s): Graduate Sustainability major; SOS 510. Pre- or corequisite: SOS 511
SOS	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	589	Community of Scholars	Provides the opportunity to develop new skills, to foster cohort building, to interact with other students and faculty, and to network and build support with the alumni network. Overseen by a faculty member but is primarily directed by the students. All MA or MS students take this course each semester. Although there is an overall structure as demonstrated in the course schedule, the specific content of the course varies each semester depending on the needs and interests of the students.	N	LEC	Y	YGB	College of Global Futures	School of Sustainability	1		Prerequisite(s): School of Sustainability graduate student
SOS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		

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SOS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Global Futures	School of Sustainability	1-12		
SOS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	STO	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	LEC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	596	Capstone: Scientific Paper	MA/MS students are required to devote six hours to conducting research and writing a scientific paper of publishable quality based on the research. The paper topic, the research methodology, and the written format must be approved by the supervisory committee. Students must decide if they will complete the paper on their own or as a group.	N	RSC	Y	GNA	College of Global Futures	School of Sustainability	1-6		Prerequisite(s): Sustainability MA or MS student; SOS 510
SOS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-12		
SOS	656	Human Rights & Sustainability	Addresses the connections between human rights and environmental sustainability. Legal and scholarly approaches linking these areas present new perspectives for addressing some of the greatest challenges of our time, given the important resource dimensions of economic and social rights and the human dimensions of sustainability. Yet human rights demands and environmental concerns are not always in harmony. Explores these tensions and opportunities by examining three substantive areas: urban ecology and human rights, the human right to food, and the human rights implications of extractive industries such as oil and mining. Following an introduction to the key concepts of human rights and sustainability, explores the substantive areas through theoretical and empirical readings on each; grassroots accounts of struggles over environment-related human rights; and selections from literature and film that illustrate the environmental justice issues at stake.	N	SEM	N	GNA	College of Global Futures	School of Sustainability	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only JUS 656 or SOS 656 or JUS 691 (Human Rights & Sustainability)
SOS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Global Futures	School of Sustainability	1-12		
SOS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	College of Global Futures	School of Sustainability	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SOS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		
SOS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	College of Global Futures	School of Sustainability	1		
SOS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Global Futures	School of Sustainability	1-15		

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SPA	101	Elementary Spanish I	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 101 if credit with C or better earned in SPA 102, 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	102	Elementary Spanish II	Fundamentals of the language. Emphasizes listening, speaking, reading, and writing.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Prerequisite(s): SPA 101 w/ C or better OR Spanish Placement Test score of 250-369; Students may not enroll in SPA 102 if credit w/ C or better earned in SPA 110, 111, 201, 202, 203, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	110	Intensive Spanish I	First-semester intensive course for students who (1) have never taken Spanish language courses before, or (2) have studied Spanish for one year at the high school level, or (3) have authorization from the Spanish section. This six-hour course meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course focuses on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prereq(s): Spanish Placement Test score of 0-249; Students may not enroll in SPA 110 if credit w/ C or better earned in SPA 101 or 102 or 111 or 201 or 202 or 203 or 204 or 210 or 313 or 314 or 315 or 316 or 325 or 412 OR Visiting University Student
SPA	111	Fundamentals of Spanish	Primarily for students with two years of high school Spanish who need review to enter second-year study.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4		Students may not enroll in SPA 111 if credit earned in SPA101, 102, 201, 202, 203, 204, 311, 312, 313, 314, 315, 316, 325, or 412
SPA	118	Basic Spanish for Health Care	Focuses on helping students develop basic oral Spanish skills that allow them to interact with patients in health care settings. Health care-related vocabulary, simple medical scenarios and basic grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week. Requires no prior knowledge of Spanish.	N	LEL	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Placement Test score of 0-369 OR Visiting University Student
SPA	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	201	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prereq(s): SPA 102, 110, or 111 with C or better OR Spanish Placement Test score of 370-420; Students may not enroll in SPA 201 if credit with C or better earned in SPA 202, 203, 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	202	Intermediate Spanish	Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	G	Prerequisite(s): SPA 201 or 203 with C or better OR Spanish Placement Test with a score of 421-520; Students may not enroll in SPA 202 if credit with C or better earned in SPA 204, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student
SPA	203	Intermed Spanish I Bilinguals	In lieu of SPA 201. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a basic conversation in the language. Builds on the skills students already have in order to expand their written and oral proficiency for real communication in a confidence-building environment. Students also explore their cultural heritage and learn about Hispanic cultures in the United States and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	C & G	Prerequisite(s): SPA 102, 110 or 111 w/ C or better OR Espanol Placement test score of 0-369; Students may not enroll in SPA 203 if credit w/ C or better earned in SPA 201, 202, 204, 210, 313, 314, 315, 316, 325 or 412 OR Visiting University Student
SPA	204	Intermed Spanish II Bilinguals	For heritage learners who have been exposed to Spanish from the household, relatives or community and who can understand and hold a conversation in the language. Builds on the Spanish language skills students already have in order to expand their written and oral proficiency in a nurturing environment. Students also learn about Hispanic cultures, traditions and customs in the United States and Latin America and the language diversity of its speakers.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	4	C & G	Prerequisite(s): SPA 201 or 203 w/ C or better OR Espanol Placement Test score of 370-520; Students may not enroll in SPA 204 if credit w/ C or better earned in SPA 202, 210, 313, 314, 315, 316, 325, or 412 OR Visiting University Student

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SPA	210	Intensive Spanish II	Second-semester intensive course for students who have authorization from the Spanish section. This six-hour course that meets on Mondays, Tuesdays, Wednesdays and Thursdays for 75 minutes in the classroom. To achieve the maximum level of proficiency, the course is focused on the development of speaking and written skills.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	6-8	G	Prerequisite(s): SPA 102 or SPA 111 with B or better OR SPA 110 with C or better; Credit is allowed for only SPA 201 and SPA 202, or SPA 203 and SPA 204, or SPA 210
SPA	218	Inter Spanish for Health Care	Intermediate Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and intermediate grammar form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 118 OR Visiting University Student
SPA	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	313	Spanish Conversation and Comp	Designed to develop skill and accuracy in spoken and written Spanish. Required of majors; SPA 313 and 314 must be taken in sequence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Spanish placement test score of 521+; Students may not enroll in SPA 313 if credit with C or better earned in SPA 314 or SPA 315 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student
SPA	314	Spanish Conversation and Comp	See SPA 313.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 313 or 315 with C or better; Students may not enroll in SPA 314 if they have received a C or better in SPA 412 OR Visiting University Student
SPA	315	Advanced Spanish I Bilinguals	In lieu of SPA 313. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can speak and understand the language. Students strengthen their written and oral language to use them fluently in professional and academic contexts. Provides a rich cultural context to critically examine issues related to language and Spanish speakers in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 202, 204, or 210 with C or better OR Espanol placement test with score of 521+; Student may not enroll in SPA 315 if credit with C or better earned in SPA 313 or SPA 314 or SPA 316 or SPA 325 or SPA 412 OR Visiting University Student
SPA	316	Advanced Spanish II Bilinguals	In lieu of SPA 314. For heritage learners who have been exposed to Spanish from the household, relatives or community and who can read and write in the language. Students continue to strengthen their written and oral language to develop advanced skills for use in professional, educational and academic contexts. Provides a dynamic cultural context to critically examine issues related to Hispanic communities, bilingualism and education in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 313 or 315 with C or better; Students may not enroll in SPA 316 if credit with C or better earned in SPA 314 or SPA 412 OR Visiting University Student
SPA	317	Spanish for the Professions	Advanced-level course that serves as an introduction to the Spanish for the Professions minor or certificate. Develops oral and written skills that prepares students to use their Spanish in their careers and/or professional fields of interest. Also covers several cultural points that facilitate effective interaction with Spanish speakers in the professional world and global community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	318	Adv SPA for Health Care Prof	Advanced Spanish course that focuses on helping students develop oral Spanish skills that allow them to interact with patients in the health care settings. Health care-related vocabulary, the impact of culture on health care, medical scenarios and advanced grammatical structures form the majority of the course curriculum. Students are responsible for completing virtual oral dialogues with a partner each week.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Spanish Language Placement Score of 521+ or any upper-division Spanish course OR Visiting University Student
SPA	319	Business Correspondence/Comm	Organization and presentation of clear, effective business communications; vocabulary applicable to modern business usage.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	325	Intro to Hispanic Literature	Critical approach to and analysis of literary types, including poetry, drama, short story, and novel. Required of all majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 313, 314, 315, 316, 412 or 413 with C or better OR R Visiting University Student

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SPA	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
SPA	385	Cinema and Culture of Spain	Offers a historical and cultural survey of major films from Spain. Studies key works with a focus on their aesthetic, cultural, political and historical context. Trains students to develop the skills to critically view how films are constructed, how films create meanings and values, and how films are connected to the cultural and historical contexts in which they are created and watched.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only SLC 385 or SPA 385 or FMS 394 (Cinema and Culture of Spain) or SLC 394 (Cinema & Culture of Spain) or SPA 394 (Cinema & Culture of Spain) OR Visiting University Student
SPA	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	400	Fundamentals/Span Linguistics	Introduces the discipline and methods of linguistics through the study of Spanish data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Pre- or corequisite(s): SPA 412 or 413; Students who have credit for SPA 400 may not enroll in SPA 539 OR Visiting University Student
SPA	401	SPA Oral Comm. for the Prof	Explores the process of creating and delivering effective public communication in the Spanish language in the context of serving U.S. Latinx community (e.g., government, nonprofit organizations, schools, media). Topics include the cultural conventions of public speaking in Spanish, perceptions of others, the articulation of verbal and nonverbal messages, and techniques of oral presentation and persuasion. This course is practice-oriented and aims at reducing students' anxiety in public presentations, emphasizing research, design and delivery, and trains students on how to evaluate their performance and that of others.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	402	Written Comm. for the Prof	Students hone their Spanish literacy (reading and writing) skills in the context of serving U.S. Latino clients in the community (e.g., schools, government agencies, social work settings, medical settings) or reporting on issues of interest to the Hispanic community. Students read and understand documents in Spanish that they would come across in the process of assisting monolingual Spanish-speakers in the public sector or doing research on the Hispanic community (e.g., birth certificates, academic transcripts, medical reports, criminology documents, newspaper or magazine articles). Students gain practice in creating written documents in Spanish that would assist their communication with Latino clients in formal (professional) and informal contexts or that would allow them to report intelligently on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): SPA 314 or 316; Credit is allowed only for SPA 494 (Spanish Written Communication) or SPA 402 OR Visiting University Student
SPA	403	SPA Gram and Stylistics for Pr	Students raise their level of awareness of appropriate grammatical, lexical and stylistic forms to use in their oral and written communication with U.S. Latino clients in formal (professional) and informal contexts in the community (e.g., schools, government agencies, social work settings, medical settings) or for reporting on issues of interest to the Hispanic community. Students enhance their analytical skills by analyzing and comparing Spanish oral and written discourse for genre-appropriate features (stylistics), grammaticality, mechanics, coherence and for a logical flow of ideas in public documents and oral discourses meant for a U.S. Latino audience.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314 or 316; Credit is allowed for only SPA 494 (Span Gram & Stylistics for Pro) or SPA 403 OR Visiting University Student
SPA	404	SPA in U.S. Prof. Communities	Students investigate linguistic issues that impact the U.S. Latino community's interaction with professionals (e.g., interaction with service providers in schools, government agencies, social work settings, medical settings; language planning at state and local levels; Spanish spoken in different regions in the U.S.; Spanish language assessment of public sector employees; creation of Spanish for Professional Purposes courses). Students also learn to report on issues of interest to the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316; Students who have credit for SPA 494 (Spanish in the Community) may not enroll in SPA 404 OR Visiting University Student

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SPA	405	Latino Cult. Persp. for the Pr	Requires students to investigate the Latino cultural perspectives that underlie and affect communication in the professional world. Students come to understand the historical context that has affected the lives of Latino community in the U.S. and take a critical look at values traditionally associated with Latino culture (e.g., the importance of family ties, fatalism, honor, respecting elders, machismo or marianismo), which provide background information for professionals in the public sector who need to serve the needs of the Hispanic community.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	(L or HU) & C & G	Prerequisite(s): ENG 101, 105, or 107 with C or better; SPA 314 or 316; Credit is only for SPA 405 or SPA 494 (Latino/a Cultural Perspective Pro) OR Visiting University Student
SPA	406	Intro. to SPA/ENG Med. Interpr	Provides an introduction to interpretation theory and practice with a specific focus on interpretation for medical fields. Constitutes an academic introduction to the field and does not certify students to be medical interpreters. Students who enroll in this course should have an advanced level of conversational Spanish.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): SPA 314, SPA 316, or SPA 394 (Introduction to Spanish for the Professions); Credit is allowed for only SPA 406 or SPA 494 (Interpretation for Medical/Law Enforcement Personnel) or SPA 494 (Intro to Spanish/English Medical & Legal Interp) OR Visiting University Student
SPA	412	Adv Conversation/Composition	Oral and written Spanish communication skills, with particular attention given to developing fluency and facility. Required of majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 413 with C or better OR Visiting University Student
SPA	413	Spanish Grammar in Context	Intensive analysis of the Spanish language. Required of teaching majors.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	G	Prerequisite(s): SPA 314, 316, or 412 with C or better OR Visiting University Student
SPA	414	Spanish for Sustainability	Provides language skills to engage in meaningful communication and official transactions in sustainability and environmental studies with an intermediate to high level of Spanish speaking, reading and writing competence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 314 or 316 with C or better; Credit is allowed for only SPA 394 (Spanish for Sustainability) or SPA 414
SPA	417	The Sounds of Spanish	Analyzes the speech sounds of the Spanish language, including articulatory and acoustic phonetics as well as phonology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS or SB	Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student
SPA	418	Architecture of Spanish	Introduces the syntax of the Spanish language by analyzing different word categories, their groupings in phrases, and the structure of both simple and complex sentences. Advanced course that requires some previous knowledge of basic structures of the language and their internal structure.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 412 or 413 with C or better OR Visiting University Student
SPA	419	Spanish Around the World	Spanish dialectology and variationist/quantitative sociolinguistics.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	CS & C	Prerequisite(s): SPA 400 with C or better OR Visiting University Student
SPA	420	Applied Spanish Linguistics	Applies linguistic principles to the teaching of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; SLC 201 or SPA 400 with C or better OR Visiting University Student
SPA	421	Spanish in the Southwest	Discussion and linguistic analysis of Southwest Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 412 with C or better
SPA	425	Understanding Spain: Lit&Cultr	Surveys Spanish literature from its beginning to 1700.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105, or 107 with C or better; SPA 325 OR Visiting University Student
SPA	426	Lit & Society in Modern Spain	Surveys Spanish literature from 1700 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	427	Colonial&Postcol Latin Am Lit	Surveys major works, figures, and movements from Colonial period to 1880.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L or HU	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	428	Found Texts Latin Am Lit Mod	Surveys major works, figures, and movements from 1880 to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	429	Writing Mexico: Major Texts	Selected readings from pre-Columbian writers/poets (e.g., Macuilxochitl) through the novel of the Revolution to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	434	Drama of the Golden Age	Dramatic works of Lope de Vega, Calderon de la Barca, and their contemporaries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325
SPA	440	Translation Theory & Practice	Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301; SPA 412; Credit is allowed for only SLC 401 or SPA 440 OR Visiting University Student
SPA	441	Technical&Scientific Translatn	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 481 or SPA 441

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SPA	442	Business&Financial Translation	Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate.	N	LEL	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 482 or SPA 442
SPA	443	Translation of Legal Texts	Provides guided practice in the successful completion of professional translation tasks in the legal field. Studies the origin and traditions of contrasting legal approaches as each system of governance (Civil Law Tradition and Common Law Tradition) perceives reality and structures its institutions to reflect differing cultural and linguistic norms. Students work with a broad selection of legal texts involving property rights, family law and commercial law. Places particular emphasis on criminal law. Analyzes legal texts from several Latin American countries as well as from Spain for content and translated into English. Similarly analyzes and translates into Spanish specialized texts currently used in Maricopa County Superior Court.	N	LEL	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 485 or SPA 443 (or SPA 410) OR Visiting University Student
SPA	444	Medical Translation	Guided practice in the successful completion of professional translation tasks in the medical and scientific domain: medical correspondence, discharge instructions, medical information for patients, general information on topics related to the medical field with a focus on low-literacy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): ENG 301 with B or better; SPA 412 with B or better; Credit is allowed for only SLC 486 or SLC 494 (Medical Translation) or SPA 444
SPA	449	LatinAmCinema:Dead/Disappeared	Studies Latin American politics and culture through film with particular focus on recent periods of Latin American history in which there have been social upheavals, dictatorships and state repression, and dirty wars. Discusses film as an art form with specific aesthetic goals, a tool to effect change within society, a mode of cultural and social expression, and a vehicle for reconciling collective trauma and preserving memory.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	G & H	Prerequisite(s): ENG 102, 105, or 108 w/C or better; Credit allowed for only FOR 449, LAS 449, SPA 449, FOR 494 (Lat Am Cinema: Dead & Disap), LAS 494 (Lat Am Cinema: Dead & Disap), SPA 494 (Lat Am Cinema: Dead & Disap) OR Visiting University Student
SPA	456	20th-Cen Spanish Amer Fiction	Major works and movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325
SPA	459	Latin American Jewish Culture	Focuses on forms of cultural production in Latin America marked by or under the aegis of Jewish diasporic identity from the late nineteenth century to the present. While Jewish immigrants and Latin Americans of Jewish descent may be found in all Latin American societies, cultural production is found concentrated in countries like Argentina, Brazil, Mexico and Chile. Investigates essentially cultural versions of a sociohistorical consciousness, and ranges across a broad spectrum of Latin American Jewish texts in an investigation of what forms of production have emerged to represent this important immigrant component of Latin American national societies. Examines novels and other literary works, along with photography and films, and looks at theme, motifs, characters that can be identified with what might be called a Jewish consciousness or Jewish sensitivity.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JST 459 or JST 494 (Jewish Latin American Culture) or SLC 459 or SLC 498 (Jewish Latin American Culture) or SPA 459 or SPA 498 (Jewish Latin American Culture)
SPA	464	Jaitón Works in Chicano/a Lit	Representative literature in Spanish and English by Mexican Americans, emphasizing sociocultural as well as literary values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & C	Prerequisite(s): SPA 325 OR Visiting University Student
SPA	470	Law, Societies&Jus Lat-Am	Reviews justice-related sociological and criminological theories in the target language. Introduces the application of social theories and human right principles to the issues affecting Latino communities both in Latin America and the United States. Students engage in critical inquiries and focused research to develop culturally sensitive and insightful solutions to criminal and justice-related topics that affect Latinos in their communities (physical or virtual).	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	SB & G	Prerequisite(s) with C or better: ENG 102, 105 or 108; SPA 202 or 204 OR Spanish Placement Test score of 421-520 OR Español Placement Test score of 370-520; Credit allowed for JUS 475, SPA 470 or JUS/SPA 494 (Law, Societies & Justice in Latino-America)
SPA	471	Indohispanomexicano Civilizatzn	Political, intellectual, social, economic, and artistic development of the Spanish-speaking people of the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316 OR Visiting University Student
SPA	472	Latin Am Society:5 CaseStudies	Growth of the institutions and cultures of Spanish American people.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & H & G	Prerequisite(s): SPA 314 or 316
SPA	473	Old&New Spaniard:Cul&Civ Spain	Political, intellectual, social, economic, and artistic development of the Spanish nation from its origin to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(HU or SB) & G	Prerequisite(s): SPA 314 or 316 OR Visiting University Student
SPA	474	Revolutnr Mexico&Postmdm Revs	Examines diverse aspects of Mexican culture since the 1910 Revolution.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 314 or 316 OR Visiting University Student

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SPA	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
SPA	481	Dictatorships & Dirty Wars	Examines aspects of Latin American politics and culture of and through the optic of social unrest. Examines films focusing on the period(s) of recent Latin American history in which there have been social upheavals, dictatorships and state repression, "dirty wars": understood as clandestine wars waged on the citizenry by the government, social movements from below.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 481 or SPA 481 or ENG 494 (Dictatorships/Dirty Wars:Lat Am Cinema) or SPA 494 (Dictatorships/Dirty Wars:Lat Am Cinema)
SPA	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	485	Chicano/a Short Story:Espnglish	Critical study of contemporary short stories by Mexican American authors, with emphasis on their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	L & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; SPA 325 OR Visiting University Student
SPA	486	Chicano/a Novel:Ultima,Rafa	Social and literary contexts of representative novelists, emphasizing their Spanish-language writings.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): SPA 325 OR Visiting University Student
SPA	487	Chicano/a Drama: Pachucos	Representative dramatic works, with emphasis on the history and development of this genre from its regional origins to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	C	Prerequisite(s): SPA 325
SPA	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6		Prerequisite(s): Barrett Honors student
SPA	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SPA	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		
SPA	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-7		
SPA	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
SPA	520	Preparing Professional Careers	Professional training of graduate students who pursue an academic job. Guides these students through their career and provides the tools they need to navigate their new and demanding academic life, not only as current students but also as future faculty. Among others topics, covers the following: research, publishing, surfing the Internet and the library for articles and books, bibliographical matters, conferences and presentations, professional ethics, choosing a dissertation director, writing and publishing the dissertation, first job search, differences among institutions, cover letters, CVs, tenure issues, and balance of personal and professional life. Explores all the practicalities of the academic profession to direct students to the right track from the first day of graduate school.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	536	Generation of 1898	Works of Unamuno, Baroja, Azorín, and their contemporaries, studied against the ideological background of the turn of century in Spain.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	537	Women in Spanish Literature	Major female writers and their texts from Spanish literature (María de Zayas, Ángela Grassi, Concepción Arenal, Emilia Pardo Bazán, Carmen Laforet, Paloma Pedrero) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	538	Chicana Writers	Major female figures and works in Spanish or translation by contemporary writers (Zamora, Castillo, Corpi, Anzaldúa, L.D. Cervantes, D. Chávez, Duarte, Cisneros) interpreted via current feminist and other critical theories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	540	Hist of the Spanish Language	Analyzes and discusses the development of Spanish from Vulgar Latin to the present day.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	541	Spanish Language in America	Discusses and analyzes various regional and social varieties of Spanish in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	542	Studies in the Spanish/SW	Examines bilingualism and the social and regional dialects of Spanish in the Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	543	Structure of Spanish	Analyzes and discusses data on selected topics in Spanish morphology, semantics, and syntax.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		

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SPA	544	Spanish Phonology	Surveys problems of Spanish phonology within the context of recent phonological theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	545	Concepts of Literary Criticism	Aims and methods of modern literary scholarship. Discusses major theories of literary analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 545 or SPA 545
SPA	546	Heritage Language Pedagogy	Sociolinguistic and pedagogical issues around the teaching and learning of heritage languages. Through a close examination of seminal articles in the field of heritage language pedagogy and research, students gain an understanding of the issues that concern these students and the teaching of this population. Defines the field, describes heritage language learners, and discusses the goals and sociolinguistic concerns of HL instruction. Also reviews the most appropriate teaching methodologies and principles for the heritage language classroom, especially in relation to literacy development. Contains a practical component that includes observations together with lesson plan and material development to prepare future teachers for effective classroom experiences and/or language program development. Course requirements include critical essays, online discussions, class observations, lesson plans and a research/applied paper.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 546 or SPA 546 or SPA 598 (Heritage Language Pedagogy)
SPA	547	Applied Linguist Online Learn	Technology has changed the way we teach and learn languages. Examines how online language learning is informed by research and theory; explores how different tools and environments can support online language learning. Familiarizes students with research methods and tools used to examine online language learning. Participants either design and develop the instructional materials for an online course of their choice or design and conduct a research project.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 547 or SPA 547 or SLC 598 (Topics in Applied Linguistics: Online Learning) or SPA 598 (Topics in Applied Linguistics: Online Learning)
SPA	550	Spanish for Reading Knowledge	Teaches nonspeakers of foreign language, or those with only basic notions of the language, how to read in a foreign language at an advanced level. Emphasizes developing reading and translation skills through exposure to a variety of texts (journalistic, historical, literary and scientific). Requires no previous knowledge of Spanish.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPA 550 or SPA 598 (Spanish for Reading Knowledge)
SPA	552	Chicano/a Film	Major figures and films by contemporary filmmakers (Sylvia Morales, Cheech Marin, Gregory Nava, Lourdes Portillo, Roberto Rodriguez, Evelina Fernández) interpreted via critical film theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	553	Latin Am Fem Film	Examines Latin American feminist films in the context of contemporary Latin American culture; films viewed analyzed as casework examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): Degree- or Nondegree-seeking graduate; Credit is allowed for only SPA 553 or 583 (Feminist Filmmaking)
SPA	566	Generation of 1927	Major poets of the Generation of 1927, with emphasis on works of Lorca, Guillen, Salinas, and Aleixandre.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	567	Contemporary Spanish Novel	Major works of post-Civil War Spanish fiction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	568	Cervantes	Extensive analysis of the prose and theater of Cervantes as a key figure of the Spanish Golden Age.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	569	Studies in Spanish Film	Examines major figures and films in Spanish cinema. Critically interprets films through current film theory, history, and critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	572	Spanish American Drama	Major contributions of Spanish American drama, with emphasis on contemporary dramatists.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	573	Spanish American Essay	Major works of the essay, within the framework of intellectual history and literary movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	576	Contemp Span Amer Short Story	Principal short stories of the <i>Nueva Narrativa Hispanoamericana.</i> within the context of contemporary theories of the narrative.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		
SPA	577	Regional Spanish American Lit	Figures and works of major national (Peru, Argentina, Chile, and Mexico) and regional (Caribbean) literatures. Topics offered on a rotating basis.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	582	Studies in Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		

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SPA	586	Chicano/a Novel	Major novels and figures in Spanish or translation by contemporary Chicano novelists (Hinojosa-S., Méndez, Morales, Cota-Cárdenas, Cisneros) interpreted via current narrative theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	587	Chicano/a Drama	Major works of Chicano/a drama, with emphasis on contemporary playwrights (Valdez, Portillo-T., Morton, Moraga, Gómez-Peña) interpreted via current critical drama theory and other methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	588	Chicano/a Essay	Major figures and essays in Spanish or translation by contemporary essayists (Rendón, Anzaldúa, Villanueva, Rodríguez, Mora, Stavans) interpreted via current critical theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	596	Second Language Methodologies	Provides a solid overview of current methodologies in foreign/second language teaching and learning, including the World-readiness standards for learning languages and the Proficiency Guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). Focuses on current pedagogical trends and theories in several areas of second language acquisition, including grammar and vocabulary, reading, writing, listening and speaking, and intercultural competence. Also provides opportunities to obtain practice in creating and adapting instructional materials, preparing and implementing individual lesson plans, written and oral assignments, and exams. Focuses on discussing student diversity in today's classrooms and differences between heritage and second language learners. Students have the opportunity to research a topic of their interest. Course consists of lectures, discussion, hands-on experience to encourage meaningful and collaborative learning.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3		Prerequisite(s): degree- or nondegree-seeking grad stdnt; Credit only allowed for CHI 591 (Lang Teach Mthd & Prin) or CHI 596 or SLC 591 (Lang Teach Mthd & Prin) or SLC 596 or SPA 591 (Teach Mthd) or SPA 591 (Lang Teach Mthd & Prin) or SPA 596
SPA	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPA	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SLC 691 or SPA 691
SPA	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		

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SPA	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-12		
SPA	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPA	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1		
SPA	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-15		
SPE	222	Orient to Ed Exceptional Child	Introduces legal aspects of special education and community services to support students with disabilities. Also examines the nature and characteristics of students with disabilities as defined by federal law. Introduces high-leverage practices (HLPs) in special education to promote effective, inclusive practices for K-12 students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB & C	
SPE	223	Society, Disability, Inclusion	Examines foundational factors affecting the impact of a disability on: equity, inclusion, personality, life circumstances, support systems and members of society. Future educators enhance their knowledge of varied inclusive experiences. Emphasizes the understanding of individual characteristics, cultural differences, civil rights and stereotypes.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		
SPE	317	Spec Educ for Cultura/Linguist	General issues and practical applications regarding the education of culturally and linguistically diverse students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	321	Classroom and SPE Assessment	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs and monitor progress of students with disabilities. Includes academic, language disorders and transition assessments. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
SPE	323	Behavioral Strategies	Focuses on behavior analysis and classroom management intervention and consultation strategies in general education and special education settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
SPE	325	Lang Literacy 1 in Elem Schls	Theoretical knowledge and pedagogical skills for implementing a high-quality reading program. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (INTASC) standards, and the National Reading Panel Report (2000). Focuses on emergent literacy, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support students of a variety of ability levels and cultural backgrounds with a specific focus on the struggling readers and English language learners. For education majors only.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only RDG 322 or SPE 325
SPE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		Prerequisite(s): minimum 45 hours

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SPE	396	Clinical Experience I	Provides opportunities for students to engage as a teacher and learner in a variety of classroom settings that serve students with visual impairments. Fulfills two (2) of six (6) required semester hours of practicum in Special Education: Visual Impairments. Develops knowledge and skills for effective implementation of strategies for teaching skills and adaptations specific to visual impairments. Introduces the TAP instructional rubric, the college professionalism rubric, backwards design of a direct instruction lesson plan, and strategies for co-teaching.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-2		Prerequisite(s): admission to the Professional Program
SPE	397	Clinical Experience II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons to a whole group, small group and individual students. Successful completion of this course fulfills two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-608 for an Elementary Education Teaching Certificate or two (2) of eight (8) required semester hours of practicum as required by SBR R7-2-602 for a Special Education Teaching Certificate.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 397 or SPE 397
SPE	400	Language Dev & Disorders	Language development course for the general education or special education teacher candidate. Covers how language develops and disorders from infancy through adulthood. Topics include the receptive and expressive language (prelinguistic communication, phonology, morphology, syntax, semantics, pragmatics) in speaking, listening, reading and writing for infants through adults with and without related disabilities. Students also understand the principles of prevention, assessment and intervention within the school environment and across multiple ecologies through transdisciplinary practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	404	Inst Design for CLD Students	Provides a foundation in instructional design to meet the academic and linguistic needs of culturally and linguistically diverse students, with a focus on English language learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only BLE 404 or ELL 504 or SPE 404
SPE	410	Mathematics in Elem Schools	Methods of teaching mathematics to all students at the K-8 level, instructional planning and assessment.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program; Credit is allowed for only EED 412 or MTE 412 or SPE 410
SPE	411	Family Involvement & Reg Issues	Emphasizes family and school relations through effective communication and state and federal regulations impacting services for students with disabilities.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR enrolled in Early Childhood minor OR Visiting University Student
SPE	416	Quality Prac/Collaborative CIs	Develops skills, strategies, and a knowledge base for preservice teachers in building collaborative partnerships with special educators.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		Prerequisite(s): admission to the Professional Program
SPE	417	Inclusion Practices/Second Lvl	Applies curricular practice and how preservice teachers work with students with special needs in middle and secondary levels.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	423	Cross-Categorical Spec Ed I	Focuses on implementing research-based strategies in reading, language arts, math and language for students with mild/moderate special needs. Includes using data from all stakeholders in the development of the IEP, making instructional decisions using assessment data, monitoring student progress and developing lesson plans.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	424	Cross-Categorical Spec Ed II	Emphasizing pedagogy, content knowledge and evidence-based strategies, focuses on assessment, curriculum development and instruction across content areas (e.g., reading, language, writing, mathematics, science, social studies) for students with low-incidence disabilities or intensive support needs (e.g., significant intellectual disabilities, multiple disabilities, orthopedic impairments [OI], and other health impairments [OHI]). Particular focus includes access to the general curriculum, inclusion, instructional and assistive technologies, communication and language development and disorders, and transition for this population.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program

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SPE	430	Collaborative Teaching	Methods and issues in cooperative teaching for students with disabilities in the general education classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L	Prerequisite(s): admission to the Professional Program; ENG 101, 105 or 107 with C or better
SPE	431	Collaborative Teaching Methods	Methods and issues in cooperative teaching for special education students in general education classrooms.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
SPE	441	Reading and Writing Braille	Provides future teachers of students with visual impairments with the knowledge and skills for reading and writing braille that enable mastery of the literacy braille code. Students produce braille using a variety of methods, research resources for braille materials and electronic devices that support the braille teacher and student, and explore methods for teaching braille to readers of all ages.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	442	Teaching Methods Students w/VI	Provides a foundation for understanding the education of students with visual impairments (VI) with past and current practices and philosophies situated in the context of special education. Begins with a brief history of VI education, legislation and educational philosophies, including the prevalence of visual impairment in society and an overview of the visual system. Prospective teachers of students with VI learn to assess, plan and implement strategies that support students in accessing academic content, career objectives and activities of everyday living across the lifespan.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	443	Foundn Instructn Students w/VI	Principles of curricular and instructional design for children with visual impairments with respect to licensure (pre-K-12). Emphasizes selecting, developing and adapting curricular and instructional units/themes/lessons so that they are appropriate for children within the licensure range. Students demonstrate knowledge of basic terminology related to the function of the human vision system and the implications for teaching and learning. Also discusses adaptations and modifications, especially of the general education curriculum.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	444	Diag Assmt Pro fr Vis Impaired	Future teachers of the visually impaired learn to interpret medical records, conduct assessment, establish meaningful and measurable goals for an ISFP or IEP, and make recommendations for classroom accommodations, modifications and goals. Examines the impact of strategies with dual sensory loss and deaf-blindness for students in the classroom. Following an overview of the senses of hearing, touch, taste, smell as well as the vestibular and proprioceptive senses, the course examines how each sensory system supports access to information.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours
SPE	445	Orientation & Mobility for TVIs	Leads future teachers of the visually impaired (TVIs) to become familiar with the philosophy and history of orientation and mobility. Explores the skills taught in orientation and mobility and experiences techniques taught to demonstrate those skills including concepts, protective techniques, sighted guide, pre-cane techniques, guide dogs and electronic aids in order to be a confident and efficient traveler. Emphasizes early concept development and mobility for students with visual impairment and multiple disabilities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
SPE	446	Modes of Communication	Explores multimodal teaching methods (i.e., braille, typing, script, note-taking, sound reproduction systems, listening skills, electronic reading devices and calculation) to support students who are blind or have visual impairments with communication. Students participate in laboratory experiences, so students can develop and demonstrate competencies in the skill of reading, producing and teaching braille as well as the skill of identifying and using assistive technology.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): SPE 441
SPE	447	Stdt Tch Teachers Vis Impaired	Student teaching in preK-12 school classrooms is a synthesized experience in curriculum, instruction and classroom management. Successful completion fulfills six (6) required semester hours of education courses, including practicum in grades prekindergarten-12, which teach knowledge and skills such as learning theory, classroom management, methods and assessment, as required by the Standard Visually Impaired Special Education Certificate.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	6		Prerequisite(s): minimum 45 hours
SPE	478	Student Teaching: SPE K-12	Student teaching in special education classrooms grades K-12: synthesized experience in curriculum, instruction, assessment and classroom management.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	8		Prerequisite(s): admission to the Professional Program

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SPE	496	Clinical Experience III	Applies course content in an instructional setting serving students with visual impairments. Emphasizes observation, pupil management, assessment, planning and delivering instruction to students with visual impairments. Continues use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Emphasizes focused observation; co-planning with a placement teacher; and co-teaching lessons.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): admission to the Professional Program
SPE	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
SPE	502	LangCommunication MethodAssess	Theory and practice of language and communication development from infancy through adolescence. Explores language and communication disorders in children with and without disabilities and children who are culturally linguistically diverse speakers. Includes phonological processing, syntactical rules and pragmatics/social communication embedded in culture; and how to use formal and informal assessment data for intervention and differentiation of instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	503	Collaboration & Consultation	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. Explores connections in depth with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 503 or SPE 540 or SPE 541
SPE	504	Methods in Content Areas	Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluating in elementary schools.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 550 or SPE 504
SPE	505	Collabortng Effective Planning	Provides an introduction to transition planning for students with disabilities, focusing on person-centered planning and collaborative practices with families and service providers. Emphasizes understanding employment, self-determination, community participation, collaborative practices, family systems and person-centered planning. Introduces and applies a family systems perspective to understanding of families of all children, including infants and toddlers, adolescents and adults with disabilities. Emphasizes understanding diversity in values, belief and traditions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	506	Assessmnt Plannng Instrc Strat	Prepares teachers with the skills to effectively work with children and young adults with moderate to severe/profound disabilities (i.e., intensive support needs). Topics focus on assessment, curriculum planning and instructional strategies using evidence-based practices. Activities include direct observation and assessment techniques in inclusive environments; designing curriculum within multiple contexts with a focus on access to the general education in inclusive environments; selecting and implementing behavioral, communicative and instructional strategies; collaborative practices; and supporting across the educational lifespan of students. Students participate in class sessions two hours per week and engage in field experiences 6 to 8 hours per week in educational environments with students with intensive support needs. Emphasizes current research-based evidence to support students with intensive support needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	507	Augmentative&Alternative Comm	Focuses on issues and strategies for teaching communication to individuals with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Discusses specific assessment and intervention strategies as they relate to augmentative and alternative communication systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	508	Educational Foundations Severe	Provides an overview of the etiological nature of individuals with moderate to severe disabilities (intellectual disabilities, multiple disabilities, sensory impairment and physical disabilities); characteristics of this population; and the associated support needs across the lifespan. Topics focus on the historical and legal contexts that influence services for this population; supports-based assessment and instruction; and key issues related to self-determination, person-centered planning in school contexts for children, youth and adults with moderate to severe disabilities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	509	Positive Behavior Supports	Knowledge and skills to assess, implement and evaluate positive behavior supports for students with intensive support needs (moderate to severe/profound intellectual disability, autism spectrum disorder, multiple disabilities), terminology reflective of a support-based model of disability rather than a deficits-based model. Students learn and apply the foundations of positive behavior supports, understanding the function of behavior and developing replacement behaviors, and implementing plans from a person-centered perspective that reflects the cultural needs of individuals and their families while drawing on interdisciplinary team members' expertise.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	510	Assistive Technology Supports	Focuses on specialized health care needs, policies and procedures for working with students with intensive support needs (i.e., students with moderate to severe/profound disabilities such as intellectual disability, autism or multiple disabilities). This terminology is reflective of a support-based model of disability rather than a deficits-based model. Provides an overview of methods for accommodating students including task or environmental modifications, assistive technology and adaptive equipment options.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	512	Indiv/Intellectual Disability	Etiology, diagnosis and management of individuals with intellectual disability. Current trends in prevention, programming and teacher preparation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking). Credit is allowed for only SPE 312 or SPE 512
SPE	513	Instr Learn Exceptionalities 1	Focuses on methods, instruction and assessment in special education for K-12 students with mild and moderate disabilities, emphasizing assessment terminology, procedures and ethical principles, reading, writing, behavior and social-emotional learning. Also focuses on collaboration, co-teaching and partnering with families. Builds a foundation for methods and assessment in special education to build toward the subsequent course work.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	520	Verbal Behavior	Based on the theories of B. F. Skinner, this course increases student knowledge and understanding of the role of verbal behavior in learning and communication. Students gain experience recognizing the function of communication, applying standardized assessment measures to assess and develop targeted interventions to address communication challenges.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	521	Found Autism Spectrum Disrds	Increases the understanding of characteristics of individuals with autism.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	522	Instr Learn Exceptionalities 2	Focuses on methods, instruction and assessment in special education for K-12 students with mild and moderate disabilities, emphasizing mathematics, writing, content area learning, social skills, transition, strategy instruction, and self-determination. Extends and builds upon the methods and assessment concepts in previous course work.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): SPE 513
SPE	524	Effective Classroom Behav Mgmt	Addresses behavioral management techniques for children with special needs, including the organization and delivery of instruction and functional behavioral analysis.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	525	Measurement and Exp Design	Examines data collection techniques, design methodologies, visual analysis and interpretation approaches. Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	526	Concepts and Principles of ABA	Provides an overview of and introduction to the basic concepts and principles of applied behavior analysis. Students gain understanding of behavior analytic process and terminology, defining and providing examples of concepts and principles and applying to a range of situations. Applied behavior analysis is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree, and to demonstrate that the interventions employed are responsible for the improvement in behavior.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	527	Behavior Analytic Assessment	Focuses on assessment procedures of applied behavior analysis. Students learn to determine the need for behavior-analytic services; identify, design and prioritize socially significant behavior change goals; conduct assessments of relevant skill strengths and deficits; conduct preference assessments; describe the common functions of problem behavior; conduct a descriptive assessment of problem behavior; conduct a functional analysis of problem behavior and interpret functional assessment data. Critically evaluates environmental variables in order to make informed recommendations for behavior change.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	531	Meth App Beh Analy for Ex Pop	Methods based on the principles and concepts of applied behavior analysis. Students learn to operationally define problem behavior, conduct functional behavior assessment and generate recommendations for the development of behavior analytic interventions. Students gain knowledge and understanding of specific scientifically valid behavior change procedures. Discusses and applies their corresponding literature base.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	534	Assessment and Evaluation	Norm-referenced and criterion-referenced assessment and evaluation of student learning to determine eligibility, plan individualized programs, and monitor progress of students with disabilities. Includes assessments in academic areas, language disorders and transition. Emphasizes integration and adaptation of curriculum, instruction and evaluation for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	535	Curricula, Methods, Tech/Adapt	Develops strategies for effective adaptation of special education and general education curriculum through use of technology. Includes methods for addressing special needs in reading, math and language disorders.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	536	Characteristics/Chldrn/Behavrl	Variables contributing to behavior patterns of behaviorally disordered children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	538	Language and Literacy I	Focuses on the theoretical knowledge and pedagogical skills necessary to equip future teachers to plan and implement high-quality reading and writing instruction in a classroom setting. Course objectives and topics are aligned to standards for reading and research from the International Reading Association (IRA), Arizona College and Career Ready Standards (ACCRS), Interstate Teacher Assessment and Support Consortium (InTASC) standards, and the National Reading Panel Report (2000). Focuses on reading readiness, language development, phonemic awareness, phonics, fluency, vocabulary and comprehension. Presents strategies and assessments to support struggling readers as well as a variety of ability levels and cultural and linguistic backgrounds to include English language learners.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College graduate student; Credit is allowed for only RDG 531 or SPE 538

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SPE	540	Family-Centered Practices	Provides definitions, models, activities and exploration in the various roles in collaboration, consultation and teamwork in the field of special education. In-depth exploration of connections with families, professionals and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	541	Consultation Frameworks/Issues	Models, activities, and roles of educational consultants working with families, professionals, and support personnel across disciplines and agencies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	548	Cross-Categorical Foundations	Foundations course compares cognitive, motor, and affective developmental and educational issues across LD, ED, MR, and PI/OHI.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	555	Inclusive Pract Diverse Learn	Adapting instruction and assessment to meet the needs of all learners in inclusive settings. Includes the creation of plans to address challenging classroom behaviors.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	556	Internship I	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and examining K-12 learner behavior. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 557 or SED 557 or SPE 556
SPE	558	EPS Found Law Assess Ethical	Provides special education professionals with knowledge and skills to improve the academic achievement and functional performance of children with disabilities, including the use of scientifically based instructional practices, to the maximum extent possible.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	559	Methods for Tchng Dvrse Lmr	Apprentice teachers select a specific population, based on placement (mild to moderate or moderate to severe), for individualized investigation. Utilizes practical strategies for curriculum development and IEP implementation. Gains a deeper understanding of their practice by analyzing and reflecting for the purposes of monitoring and adjusting instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisite: MEd Special Education (Teacher Certification) major
SPE	560	Behavior Change Procedures	Examines scientifically validated behavior change procedures. Students gain experience critically analyzing and selecting interventions informed by measurement, data display and interpretation. Students gain experience in application of knowledge by conducting a behavior change project, analyzing, interpreting and presenting results.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	561	Characteristics/Diagnosis/Lm	Theories related to learning disabilities, including identification and characteristics.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	562	Personnel Sprvsn OBM in Ed	Focuses on the use of data informed procedures for training, management, supervision and support of behavior health practitioners in educational settings. Students gain experience and develop expertise with organizational behavior management (OBM) techniques.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	563	Phil Foundation ABA in Ed	Reviews the history and foundations of the field of applied behavior analysis in educational settings. Interprets the impact and utility of radical behaviorism and experimental analysis of behavior in classrooms, clinics, homes and community settings.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	564	Cntrvrsl Therapies Sci in Ed	Investigates the role and impact of fads, pseudoscience, false beliefs, dubious assumptions and spurious reasoning on treatment decisions of professionals, politicians, educators, parents and clients in educational settings. Interprets philosophical positions and traditions that influence and inform consumers in selection of treatments. Examines and designs responsible evaluation and strategies for effective communication.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	565	Behavior Change Systems	Focuses on applied behavior analysis-based behavior change systems and procedures. Students learn to identify, implement, manage and supervise interventions based on fundamental elements of behavior change. Addresses behavior change considerations, including ethical use of behavior change systems and ongoing data collection for fidelity and progress monitoring.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate
SPE	566	Appl Beh Analysis Inklus Set	Examines definitions, characteristics, assumptions and basic principles of applied behavior analysis. Describes and applies fundamental elements of behavior change, including reinforcement schedules, modeling, shaping, chaining and other behavior change procedures. Activities center on the design and delivery of social skill interventions with individuals with special needs in inclusive settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	567	Ethics Applied Behav Analysis	Addresses knowledge and application of the Behavior Analyst Certification Board Guidelines for Responsible Conduct for Behavior Analysts. Examines and resolves ethical dilemmas which may be encountered by behavior analysts. Addresses roles and responsibilities of members of a multidisciplinary treatment team comprised of educators, behavior analysts, parents, learners and other professionals. Students conduct risk-benefit analysis of evidence-based treatment approaches and develop declarations of professional practices and procedures for behavior analysts.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	568	Behavior Assessment	Focuses on critical aspects of applied behavior analysis, experimental design and the identification and implementation of effective assessment methodologies. Addresses client-centered responsibilities of the behavior analyst including problem identification, measurement, assessment, data collection and analysis. Students gain experience conducting functional behavior assessment and stimulus preference assessment to inform intervention design. Emphasizes measuring and ensuring treatment integrity.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): SPE 531; SPE 566; degree- or nondegree-seeking graduate. Credit is allowed for only SPE 568 or SPE 598 (Behavioral Assessment)
SPE	569	Res Meth Applied Behv Analysis	Students gain expertise and practical experience in the interpretation and application of experimental design to inform decision making. Focuses on evaluation of the effectiveness of interventions through use of behavior analytic technologies in clinical and applied settings. Students learn to interpret and describe behavior in behavior analytic terms and explain concepts and approaches in everyday language. Students research and evaluate skill assessment approaches through strategic review of the behavior analytic literature. Course addresses single-subject methodologies to inform design and delivery of effective instruction and clinical interventions.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Graduate student (degree seeking or nondegree seeking); SPE 531; SPE 566; Credit is allowed for only SPE 569 or SPE 598 (Research Methods Applied Behavioral Analysis)
SPE	570	Internship II	Develops knowledge and skills for effective classroom management, establishing a positive classroom environment, and effective lesson delivery. Introduces use of the TAP instructional rubric, the college professionalism rubric, and strategies for co-teaching. Provides opportunities for students to engage as a teacher and learner in a classroom setting.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 567 or SED 567 or SPE 570
SPE	571	Apprentice Teaching I	Semester one of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Introduces classroom management, curriculum, instruction and assessment supervised and reinforced by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 571 or SED 571 or SPE 571
SPE	572	Testing&Measurement Gifted Ed	Covers current and historical aspects of testing and measurement in the field of gifted education. Topics include: the history and purposes of IQ testing, definitions of various types of tests, purposes of testing for gifted education services, ability tests and achievement measures, how tests are used in Arizona in programs for gifted learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SPE 572 or SPE 591 (Testing&Measurement Gifted Ed)
SPE	573	Diff Instruction Gifted Child	Explores the design of differentiated curriculum and instruction for gifted learners in elementary and secondary education	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-requisite: Graduate student (degree seeking or nondegree seeking); Credit is allowed for only SPE 573 or 591 (Diff Curriculum Gifted Child)
SPE	574	Apprentice Teaching II	Semester two of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record. Reinforced application of developing proficiency in classroom management, curriculum, instruction and assessment occurs through supervision and individualized support by a clinical instructor.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 574 or SED 574 or SPE 574
SPE	575	Survey, Issues, & Foundations	Explores the foundations of special education through characteristics and eligibility of exceptional students. Analyzes historical, political, social, and legal factors impacting special education services for exceptional students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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SPE	576	Internship III	Develops knowledge and skills for creating learning experiences for a range of learners, executing instructional cycles, using assessment methods, and reflecting on best teaching practices. Provides opportunities for pre-service educators to engage as a teacher and learner in a classroom.	Y	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-8		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 576 or SED 576 or SPE 576
SPE	578	Student Teaching SPE	Student teaching in special education school classrooms. Synthesized experience in curriculum, instruction and classroom management.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	579	Apprentice Teaching III	Semester three of apprentice teaching in an elementary (EED)/secondary (SED)/special education (SPE) setting for students who are currently working as the teacher of record and enrolled in the masters plus certification program. Continued development toward proficiency in classroom management, curriculum, instruction and assessment.	N	PRA	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2-15		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 579 or SED 579 or SPE 579
SPE	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	585	Creativity: R&D in Gifted Ed	Explores nature of creativity in terms of philosophical underpinnings, empirical evidence, human development, self-actualization, and the ecology surrounding the creative event.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	586	Advising the Gifted Learner	Focuses on educational planning and guidance, social and emotional development, and family problem solving regarding needs of gifted children.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	587	Special Populations/Gifted Ed	In-depth analysis of major controversies in educating the gifted, including nature/nurture, the role of mental tests, and sex differences.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	588	The Gifted Learner	Gifted children's characteristics, identification, needs, school and home environments, definitions, and misunderstandings. Research by Pressey, Stanley, Terman, and others.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	589	Gifted Education Programming	Approaches for designing and implementing optimal and comprehensive gifted education services in a broad range of educational settings.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only EED 593 or SED 593 or SPE 593
SPE	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	597	Capstone	Applies theoretical and practical information presented through coursework in a real-world setting.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student

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SPE	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Pre-requisite: Special Education Graduate student
SPE	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
SPE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre-requisite: Special Education Doctoral student
SPF	301	Culture and Schooling	For the professional teacher preparation program. Overview of the cultural, social, and political milieus in which formal schooling takes place in the United States.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SPF	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
SPF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
SPF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SPF	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Pre Requisite: Must be Post Bacc UG, Non Degree Graduate or Degree Graduate
SSH	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	300	Food and Culture	Uses the case of food to explore how culture shapes human well-being, including the impact of political-economic systems on what we have and chose to eat.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	(L or SB) & C	Pre-requisite: ENG 101, 105, 107, or ENG 111; Credit is allowed for only ASB or SSH 300
SSH	301	Global History of Health	Examines disease and health transitions in broadest context of human history, from primate ancestors to hunter-gatherers, to transcontinental contact, colonialism, industrialization, urbanization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3	SB & G & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 301 or HST 301 or SSH 301 OR Visiting University Student
SSH	314	HIV/AIDS: Sci/Behavior/Society	Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only MIC 314 or SSH 314 OR Visiting University Student

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SSH	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	402	Commnty Partnrshps Global Hlth	Supervised community-based activities relevant to a global perspective on contemporary U.S. health. Addresses community-identified issues using appropriate methodologies.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-9	SB	Prerequisite(s): ASB 100 or SSH 100; minimum 45 hours; Credit is allowed for only ASB 452 or SSH 402 OR Visiting University Student
SSH	403	Cross-Culturl Stds Global Hlth	Direct investigations of society, ecology, and health in international settings.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	3-6	(L or SB) & G	Prerequisite(s): ASB 100 or SSH 100; ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 443 or SSH 403 OR Visiting University Student
SSH	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-4		
SSH	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSH	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	PRA	Y	Z1	The College of Liberal Arts and Sciences	School of Human Evolution & Social Change	1-12		
SSP	242	Res Trng Foundation Performanc	Provides knowledge and hands-on skills in executing and teaching the foundational resistance training movements required to be successful in performance training programs.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		
SSP	275	Exper Seminar Sports Science	Experiential course designed to introduce students to the various career opportunities in the field of sports performance training or sports science. Students meet on a weekly basis to gain further insight into different ways to get involved in the field and gain the valuable experience that is required for their future success. Guest speakers introduce new ideas, training concepts and new ways students can get involved. Includes discussion groups and presentations from students to further explain the various positions and experiences they have had allowing the class to open their minds to different areas. This course meets the requirements of early experiential experience required to receive certification from the National Strength and Conditioning Association as a Certified Strength and Conditioning Specialist.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 101; Pre- or corequisite(s): SSP 242 OR Visiting University Student
SSP	315	Exercise and Sport Physiology	Develops an understanding of the body's abilities to perform various types and intensities of exercise and sport, to adapt to stressful situations, and to improve its physiological capacities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): BIO 160 or 201 with C or better; Corequisite(s): SSP 316 (EXW 316) OR Visiting University Student
SSP	316	Exercise and Sport Phys Lab	Allows for exploration and application of exercise physiology theories in controlled experiments measuring performance capacities.	N	LAB	N	GNA	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): BIO 160 with C or better or both BIO 201 and 202 with C or better; Pre- or corequisite(s): SSP 315 (EXW 315) OR Visiting University Student
SSP	320	Coach Lead, Perf Team and Mgt	Discusses leadership skill development and team building related to performance staff and athletes. Details specific concerns related to management of training facilities.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): minimum 45 hours; Credit is only allowed for EXW 320 or SSP 320 OR Visiting University Student
SSP	325	Appl Anat & Biomech Sport Mvmt	Provides a detailed introduction into the mechanics of motion and the underlying anatomy that provides the structure for that motion. Students learn to appreciate the consequences of external forces, how the body generates internal forces to maintain position, the consequences on the structure of handling the forces and an applied knowledge of how the result of these forces is motion. Emphasizes applying biomechanical principles to analysis of human performance and understanding the background for movement optimization science and the reduction of injury potential through movement correction.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	4		Prerequisite(s): BIO 201 with C or better; KIN 101 with C or better OR Visiting University Student

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SSP	423	Performance Test & Technology	A detailed presentation of laboratory and field-based methods used to evaluate athletic performance and measure effectiveness and progress of sports performance training routines. Students are shown the skills to evaluate the most effective tools, techniques and technologies available to carry out individual and team based assessments. Students are exposed to the best practices of performance testing and the wide range of available methods to determine different performance measures, allowing them to make the most effective and cost-efficient choice when asked to make those decisions in the field.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 315 (EXW 315); SSP 316 (EXW 316); SSP 325 OR Visiting University Student
SSP	434	Plyometrics Movement&Condition	Applied course providing students with experience and knowledge in plyometric exercise, sprint technique, sports movement skills and sport conditioning program design. Information applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced speed, agility and conditioning exercises and programs for varying individuals and teams.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 325; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 534 or SSP 434 (or EXW 434) OR Visiting University Student
SSP	460	Resistance Training App/Theory	Covers advanced resistance training and performance programming methodologies. Applies to professionals working with individuals in whom a major goal of their physical activity program is to maximize human performance potential either for personal fitness goals or success in specific sports or for applications in occupational athletes (military, fire and police). Guides students in development of techniques and skills critical to safe, effective and motivating instruction of advanced resistance training exercises and programs for varying individuals and teams. Addresses a significant number of core competencies identified for the NSCA Certified Strength and Conditioning Specialist (CSCS) examination.	N	LEC	N	OPT	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): EXW 215, 216, or SSP 242; Pre- or corequisite(s): SSP 315 (EXW 315); Credit is allowed for only EXW 530 or EXW 598 (Resistance Training Application and Theory) or SSP 460 (or EXW 460) OR Visiting University Student
SSP	461	Perform Prog Comp & Periodiztn	Culminating course allows students to construct complete performance training programs using all of the performance activity components (power, conditioning and strength) learned throughout the degree program. Students select how to apply correct periodization models to their program designs based on athlete or client needs and experience.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): SSP 434; SSP 460; Credit is allowed for only SSP 461 or EXW 494 (Plyometrics & Power Transfer Exercise) or EXW 598 (Plyometrics and Power Training) or EXW 598 (Plyometrics and Power Transfer Exercise) OR Visiting University
SSP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): SSP 242; SSP 275; SSP 434
SSP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
SSP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	College of Health Solutions	College of Health Solutions	1-3		
SSP	501	Data Collection and Analysis	Discusses the use of evidence-based practice and scientific principles to assess athletes, analyze the results and interpret the data for application. Provides a comprehensive understanding of the theories and methods which provide the framework for implementing strength and conditioning programs. Explores research methods and examines ethical and cross-cultural considerations when collecting testing data.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	530	Adv Performance Programming	Covers the application of periodization principles to the design of a comprehensive performance-based training program including appropriate assessment and recovery strategies.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 530; KIN 540

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SSP	534	Measurement in Sport & Fitness	Sports and/or tactical performance coaching involves the integration of athlete monitoring and readiness techniques. Presents the student with the assessment knowledge necessary to provide feedback for the sport coach and athlete to utilize in planning their performance. Covers information regarding the theory behind quantitative analysis techniques, proper equipment usage, data processing, and the connection of all of the above to exercise science principles. Students also gain experience utilizing advanced equipment and technologies common in the performance field. Additionally, students make recommendations and assign exercises to correct impaired movement, when appropriate.	N	LEL	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): KIN 540
SSP	560	Performance Sports Coaching	Discusses the use of evidence-based practice and scientific principles to design the optimal training session for athletes. Application of lessons learned from motor learning, skill acquisition and sport psychology shift the focus of training sessions to learning rather than performance outcomes.	N	LEC	N	GNA	College of Health Solutions	College of Health Solutions	3		Prerequisite(s): Strength and Conditioning MS student
SSP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	PRA	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Health Solutions	College of Health Solutions	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SSP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	LEC	Y	Z3	College of Health Solutions	College of Health Solutions	1		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	220	Intro to Social Transformation	Introduces key concepts in the study of social change, social innovation, and social transformation. Studies examples of social movements, social activism, community organizing, and coalition building and how such efforts have transformed society and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only APA 220 or JUS 220 or SST 220
SST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
SST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	301	Research Methods-American Comm	Provides a foundation in the concepts and tools of community-based participatory research for studying American cultures, including how to identify and utilize appropriate quantitative and qualitative research methods for working with diverse American communities. Students learn to take part in participant observation, conduct surveys, interviews and focus groups as well as explore existing data sets to conduct secondary data analysis and utilize visual and narrative means of data collection and presentation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 117, 142, 170 or completion of MA General Studies course; minimum 2.00 GPA; minimum 24 hours
SST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		

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SST	428	Critical Race Theory	In-depth analysis of the ways in which race has been historically utilized, constructed, and contested in American civil society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AFR 428, APA 428, JUS 428 or SST 428 OR Visiting University Student
SST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7		
SST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
SST	501	Fnds of SocialTransformation	Introduces the foundations of social transformation and social change. Looks at social transformation through an interdisciplinary lens and explores the connections between the objective and subjective factors that enable or inhibit social transformation in different contexts.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	510	Social and Cultural Pedagogy	Engages students with the academic literature and scholarly debates on social and cultural pedagogy, reviews practical lessons from the field, and provides an overview of different areas of intervention and professional practice. Considers the historical, local, and international dimensions of social and cultural pedagogy, illustrating them with selected case studies. Encourages the study of social and cultural pedagogy using a critical and interdisciplinary perspective.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	520	Learning Tech-Native Education	As the Internet and digital devices become more accessible in Indian country, educators are increasingly developing digital systems for formal and informal learning environments. From distance learning systems to digital language learning and apps for informal learning, this course reviews types of educational technologies in different American Indian and Indigenous educational settings, highlighting the relationship among technical affordances, pedagogical approaches, and social impacts. Students (1) understand how technical affordances shape learning in face-to-face and online environments; (2) describe the relationship between digital learning tools and curricular and programmatic objectives; and (3) describe and propose the basic limitations and possibilities of types of educational technologies for specific American Indian and Indigenous educational settings.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	530	Culture and Education	Examines the relationship between local cultures, local knowledge and education. Drawing from comparative and international education and paying particular attention to the world's most marginalized populations—Indigenous peoples. Additionally, explores historical trajectories of education, the global expansion of schooling, state and international education and language policies, as well as notions of local/Indigenous resistance, agency, response and educational innovation. Three major sections comprise the course: (1) patterns in education and language policy for historically underrepresented and underserved populations; (2) the role of families, communities and local and place-based pedagogies; and (3) alternative models of education toward social transformation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SST 530 or SST 591 (Culture and Education)
SST	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		

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SST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
SST	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
SST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	604	Sexuality Studies	Examines the social construction of sexuality, sexual identities and cultures, including LGBT people and other non-normative gender and sexual formations not captured by modern LGBTQ categories. Studies genders and sexualities that both pre-date current LGBT subjectivities and community formations, as well as develops theoretical and analytic tools to examine future gender and sexual possibilities. Interrogates forms of heterosexuality, heteronormativity and homonormativity, from an intersectional perspective. Examines issues and institutions that impact and are impacted by sexuality as a vector of power, such as sexual stratification, carceral genders and sexualities, reproductive rights/justice, sexual health and justice, HIV/AIDS and disease, sex work, the state and legal system, and transnational and diasporic sexualities, just to name a few.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
SST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
STC	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	501	Theories of Data & Society	Surveys the development of social theory with regard to structures of knowledge and data exchange. Prepares students to engage in theory building and deploy theoretical frameworks that inform and support their social research.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	505	Theories of Social Technology	Examines key theories of social technologies from social and behavioral perspectives. Examines the political dimensions of technologies; technology's role in constructing social structures; and how mobile technologies encourage, structure and delimit social interaction.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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STC	510	Data Wrangling	Provides a technical grounding in the processes of extracting, processing and combining data for the purposes of understanding social and institutional changes. Introduces structures of the Web, programming for the extraction of data, storing data effectively, and basic tools for manipulating, visualizing, summarizing and transforming collected data.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	512	Data, Places, People & Things	While the Web continues to be our front door to networked data, the fastest growing segment of internet traffic is produced and consumed by sensors and embedded systems. Examines the ways in which these data may be acquired and used, and how new locative technologies may be prototyped to help understand their social impact.	N	LEL	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510; Credit is allowed for only STC 512 or STC 598 (Mobile & IoT Systems)
STC	520	Advocacy and Social Technology	Examines the potential for social technology in advocating for social change.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	525	Politics and Social Technology	Concerns the political implications of social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	527	Ethics&Policies of Social Data	Explores the applied ethics of data, and how this relates to public policy, both from a social and an institutional perspective.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	528	Communicating Data Science	Making use of data means more than just designing algorithms that work consistently. Big data is useless if it cannot be effectively communicated to those who need it, whether that is policy makers, managers or the public at large. Participants acquire techniques that allow them to effectively communicate complex data in writing, verbally, visually and through interfaces.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 551
STC	530	Algorithmic Society	Examines perspectives on the algorithmic turn, including the emergence of software studies, big data, platformed sociability and automation.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	535	Networked Social Technology	Surveys human and social behaviors from the perspective of networks, with an emphasis on social technology.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	536	Networked Publics	Traces the move from mass society to networked society and the changes this has led to in the public sphere, political participation and systems of governance.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 501
STC	537	Technologies of Community	Examines the ways in which communities form, manage themselves, and improve through the use of networked technologies.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	539	Social Search and Filtering	Traces the role of search (and search engines) in the development of networked knowledge; how this biases social access to information; and the technologies of filtering, ranking and sorting that increasingly affect social access to information.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STC 539 or STC 598 (Search, Algorithms, and Society)
STC	540	Critical/Cultural Approaches	Examines critical and cultural studies approaches to social technologies. Explains a critical/cultural studies approach to social issues and the cultural and social dimensions of technologies. Explores how social technologies both shape and are shaped by power and how cultural understandings of technology contribute to the shaping of everyday life.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	545	Games as Social Technology	Explores how games as networked and collaborative technologies facilitate community formation, interaction and development.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	547	Political Econ of Social Tech	Examines the economic, political and material structures of contemporary social and participatory media. Considers patterns of ownership, regulatory policy, corporate ideology and practice, intellectual property, the nature of labor in the information economy, and more, all with an eye toward understanding how social technologies are developed, distributed and deployed.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	550	Computational Social Methods I	Provides a foundation in the structure of scholarly inquiry and research design in the context of data and society.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 510
STC	551	Computational Social Meth II	Extends exposure to advanced computational methods in the practice of social science.	N	SEM	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): STC 550

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STC	570	Social Data Projects	Participants collaborate on a substantial project relating to social use of data. In the process they bring to bear their theoretical and technical skills and demonstrate professional interaction and communication skills. Participants also produce a public portfolio of their work during their graduate program.	N	PRA	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	REC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1		Prerequisite(s): Social Technologies MA student
STC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
STC	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Social and Behavioral Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STM	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-12		
STP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	226	Elements of Statistics	Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or other course meeting General Studies MA requirement with C or better or ALEKS score of 61 or higher OR Visiting University Student
STP	231	Statistics for Biosciences	Concepts and methods of statistics; display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 117 or 142 or higher with C or better or ALEKS score of 61 or higher OR Visiting University Student
STP	280	Probability Statistics Research	Methods for data summary, numerical summary measures, probability concepts, discrete and continuous probability distributions, expected values, statistics, sampling distributions, point estimation, and introduction to statistical inference for a single parameter.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3	CS	Prerequisite(s): MAT 251, 265, or 270 OR Visiting University Student
STP	281	Stat Analysis for Researchers	Confidence intervals, hypothesis testing, one- and two-factor analysis of variance, simple linear regression, multiple regression, chi-square tests, and introduction to statistical quality control.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): MAT 266 or 271; STP 280
STP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	298	Honors Directed Study	Independent study or practicum under the supervision of a faculty member.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student

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STP	310	Design/Analysis of Experiments	Factorial and nested designs, randomized designs, randomized complete block designs, Latin squares, fixed and random effects, expected mean squares, multiple comparisons, and analysis of covariance.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	311	Regression & Time Series Anal	Simple linear regression, multiple linear regression, indicator variables, influence diagnostics, stepwise selection, logistic regression, introduction to time series models, autocorrelation, and some ARIMA models.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 281 or 420 OR Visiting University Student
STP	315	Statistical Computing	Statistical techniques using a professional statistical programming language (e.g., SAS, R). Emphasizes correct methods, writing and presentation of results	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 310 or STP 311 OR ACO 320 and STP 226
STP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-4		
STP	420	Introductory Applied Statistic	Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, regression analysis, analysis of variance, and nonparametric tests.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): MAT 210, 251, 265, or 270 with C or better OR Visiting University Student
STP	421	Probability	Laws of probability, combinatorial analysis, random variables, probability distributions, expectations, moment-generating functions, transformations of random variables, and central limit theorem.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 267 or 272 with C or better; Credit is allowed for only ACT 415 or ACT 515 or STP 326 or STP 421 or Visiting University Student
STP	425	Stochastic Processes	Markov chains, stationary distributions, pure jump processes, 2-D order processes, and other topics in stochastic processes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): MAT 342 or 343 with C or better; MAT 371 with C or better; STP 421 with C or better OR Visiting University Student
STP	427	Mathematical Statistics	Limiting distributions, interval estimation, point estimation, sufficient statistics, and tests of hypotheses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): ACT 415 or STP 421 with C or better; STP 281 or 420 with C or better OR Visiting University Student
STP	429	Applied Regression	Statistical inference for controlled experimentation. Multiple regression, correlation, analysis of variance, multiple comparisons, and nonparametric procedures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3	CS	Prerequisite(s): STP 420 with C or better OR Visiting University Student
STP	450	Nonparametric Statistics	Rank- and order-based tests and estimation procedures for 1 sample and 2 or more related or independent samples, measures of correlation, and introduction to resampling methods, including bootstrap and randomization tests.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 310
STP	451	Quality Improvement	In-depth concentration on statistical process control for attribute and variables data, process capability analysis and measurement systems analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): STP 311
STP	452	Multivariate Statistics	Statistical analysis of multivariate data including methods for preparation and presentation of multivariate data, MANOVA, discriminant analysis, principal component analysis, factor analysis, cluster analysis, random forests and classification trees.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: STP 311; MAT 343
STP	460	Categorical Data Analysis	Statistical methods for the analysis of categorical (discrete, count) data. Topics include exact and approximate tests and confidence intervals for one- and two-binomial proportions, contingency tables, generalized linear models, logistic regression and loglinear models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 310, 311; MAT 272
STP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z2	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1-12		
STP	485	Statistics Capstone	Students work in a team and partner with a client to solve a real-world problem requiring statistical analyses. Emphasizes problem development, integration of technical skills, teamwork and communication among the students and with the client. Requires regular meetings and presentations with team, client and faculty advisor.	N	LEL	N	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Pre-requisite: Senior standing; STP 310, 311, 6 additional hours of upper-division STP excluding STP 492, 493, 498, 499
STP	486	Peer Mentoring in STEM	Advanced students learn and apply mentoring skills in science classes or teaching labs.	Y	SEM	Y	YGB	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	1		Prerequisite(s): minimum 45 hours; Credit is allowed for only ACO 486 or BIO 486 or LSC 486 or MAT 486 or PTX 486 or STP 486 OR Visiting University Student
STP	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6		Prerequisite(s): Barrett Honors student
STP	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better

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STP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		
STP	495	Undergraduate Research	Supervised research in statistical or probability studies.	N	RSC	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): minimum 45 hours. Credit is allowed for only MAT 494 (UG Research in Math) or STP 495
STP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-7		
STP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-3		
STP	501	Theory of Stats I: Dist Thy	Introduces rigorous probability theory, including distributions and expectations of random variables, transformations of random variables and order statistics, generating functions and basic limit concepts. Supplements the understanding of applied statistics with a firm grasp of the probabilistic underpinnings of theoretical statistics.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): graduate student (degree seeking or nondegree seeking); Credit is allowed for only STP 501 or STP 598, Theory of Statistics I
STP	502	Theory of Stats II: Inference	Presents techniques and basic results of mathematical statistics at a rigorous level. Develops the structure of statistical inference procedures, including the principles of data reduction, theory of estimation, confidence sets, hypothesis testing, and prediction for common parametric models.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 501 with B- or better; Credit is allowed for only STP 502 or STP 598, Theory of Statistics II
STP	505	Bayesian Statistics	Provides knowledge of Bayesian statistical methods. Covers the essential conceptual ideas for Bayesian analysis and discusses a variety of computational ideas that facilitate a Bayesian analysis in real-world applications. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including exposure to mathematical proof, linear algebra, multiple semesters of calculus, exposure to coding and a basic course in statistical concepts and methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 505 or STP 598 (Bayesian Statistics)
STP	526	Theory/Statistic Linear Models	Multinomial distribution, distribution of quadratic forms, full and nonfull rank models, generalized inverses, unbalanced data, variance components, and the large sample theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	527	Statistical Large Sample Thy	Types of convergence, central limit theorems, theory of maximum likelihood estimation, efficiency, robustness, influence functions, theory of bootstrap methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	530	Applied Regression Analysis	Method of least squares, simple and multiple linear regression, polynomial regression, analysis of residuals, dummy variables, and model building.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	531	Applied Analysis of Variance	Factorial designs, balanced and unbalanced data, fixed and random effects, randomized blocks, Latin squares, analysis of covariance, and multiple comparisons.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	532	Applied Nonparametric Stats	One-sample test, tests of 2 or more related or independent samples, measures of correlation, and tests of trend and dependence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	533	Applied Multivariate Analysis	Discriminant analysis, principal components, factor analysis, cluster analysis, and canonical correlation.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	535	Applied Sampling Methodology	Simple random, stratified, cluster sampling; variance estimation in complex surveys; nonparametric superpopulation approaches; nonresponse models; computational methods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	540	Computational Statistics	Presents computational tools for statistical inference and data analysis. Uses R software (the lingua franca of statistics) in a wide variety of examples. Emphasizes simulation of random variables, Monte Carlo experiments, evaluation of statistical models via cross-validation, construction of confidence intervals via bootstrap and hypothesis testing via permutations. Focuses on the numerical solution of least squares problems, on stepwise methods for model building and on estimation of regression models for high-dimensional data. Presents computational tools for maximum likelihood estimation with an emphasis on estimation of logistic regression models. Assumes a mathematical and statistical maturity that is required for admission as a graduate student in statistics, including mathematical proofs, linear algebra, multiple semesters of calculus, coding and statistical concepts.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only STP 540 or STP 598 (Computational Statistics)

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STP	560	Experimental Statis in Biology	Principles of experimental design, hypothesis testing and advanced data analysis in the biological sciences using statistical software (R and/or SAS). Applies statistical topics to biological data and emphasizes the identification of the appropriate statistical methodology. Topics include exploratory data analysis with visualization, experimental design, categorical data analysis, generalized linear modelling, survival analysis, CART methods and power analysis.	N	LEC	N	GNA	New College of Interdisciplinary Arts and Sciences	School of Mathematical and Natural Sciences	3		Prerequisite(s): degree- or nondegree-seeking graduate student; BIO 614
STP	581	Statistical Consulting Clinic	Provides practical experience in the application of statistical theory and methods to problems from a wide variety of disciplines, exposing students to a diverse range of data types and clients. Develops nontechnical consulting skills, for example explaining statistical concepts to non-statisticians, writing reports, and making oral presentations.	N	PRA	Y	GNA	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	3		Prerequisite(s): STP 530 with B or better; STP 531 with B or better; Credit is allowed for only STP 581 or STP 598 (Statistical Consulting)
STP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
STP	784	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-12		
STP	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		
STP	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1		
STP	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Mathematical and Statistical Sciences	1-15		

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STS	101	Intro Science, Tech & Society	Overview of the basic issues, definitions and literature involved in the study of science, technology and human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Credit is allowed for only STS 101 or STS 304 OR Visiting University Student
STS	110	Global Technology&Development	Introduces awareness and understanding of how technology, processes of globalization, and society influence one another. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317
STS	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	235	Technology and Urban Systems	Focuses on the relationship between technology and urbanization, especially on how technological innovation and change impact all aspects of urban systems, including urban social and economic development, sustainability, governance, environmental, and community change.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
STS	260	Politics of Sci andTechnology	Explores the relationship among government, politics, science, and technology, especially the interdependence of public policy and science and technological pursuits.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	301	Research in Sci & Tech Studies	Examines methods of inquiry in the social sciences with emphasis on STS, including both qualitative and quantitative approaches, philosophy of science, and scientific revolutions.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	302	Philosophy of Science & Tech	Focuses on the nature and implications of science as a body of knowledge, set of practices, specific methods, and how these differ from other human enterprises and activities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	303	History of Science&Technology	Examines the history of technology within social, cultural, political, and economic contexts and the critical relationship between society and technology.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): minimum 45 hours
STS	304	Science, Technology & Society	Overview of the major issues associated with the study of science, technology, and human systems, including theoretical approaches. Credit is given for only STS 304 or 101.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only STS 101 or STS 304 OR Visiting University Student
STS	305	Science and Social Theory	Explores the different theoretical traditions that inform social interpretations of science, including awareness of the historical traditions that define these interpretations.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	306	Social Effects of Science Tech	Examines the effects of science and technology on social life and the contexts in which those effects manifest.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	317	Sci, Tech, & Global Engagement	Overview of international issues associated with both the development and deployment of technologies, including matters concerning international relations. Credit is given for only STS 317 or 110.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Credit is allowed for only STS 110 or 317
STS	318	Science, Tech, & Government	Examines the foundations of the interrelationship of science, technology, and democratic governance, with emphasis on the American political system.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	325	Science, Tech, & Public Policy	Examines the interaction of science and technology with American domestic policy.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	328	Science, Technology, & Culture	Overview of technology and international cultures, including cultural definitions of science and technology. May intersect issues of culture and religion.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	329	Tech in Developing Countries	Covers specific issues relating to building technological capability in newly industrializing countries.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	330	Info Tech and Globalization	Examines the intersection of advances in information technology and globalization and the impact of these processes on human systems.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & G	
STS	331	Ethical Issues in Sci and Tech	Examines the interconnections between values and science and technology by examining such topics as computers and privacy, medical malpractice, reproductive technologies, patents, and hazardous facilities.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	332	Global Issues in Science &Tech	Examines contemporary international debates in science and technology and how those issues impact globalization.	N	SEM	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	364	Science, Tech,& Nat'l Security	Examines how changing technologies impact all aspects of national security policy in the United States.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	Prerequisite(s): minimum 45 hours OR Visiting University Student
STS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	401	Statistics in Sci&Tech Studies	Introduces statistical techniques for the social sciences, including the role and rationale of statistics, descriptive measures, associational measures, and inferential statistics.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	CS	Prerequisite(s): MA general studies requirement satisfied OR Visiting University Student
STS	425	Law, Values, Sci,& Technology	Examines the interconnections of law, values, and science and technology with a view to establishing their reciprocal relationships.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB	
STS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		

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STS	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
STS	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
STS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
STS	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-7		
STS	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
SWG	501	Micro Human Behav Soc Environ	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	502	Macro Human Behav Soc Environ	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspective in a macro context.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	510	Foundation Practice I	Basic social work methods with emphasis on the problem-solving process as it pertains to individuals, families, and small groups.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW student; Pre- or corequisite(s): SWG 501 with C or better if completed
SWG	511	Foundation Practice II	Theory and methods of direct practice with groups and selected practice models.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Master or Doctor Social Work student; SWG 510 with C or better
SWG	514	Bridge Seminar I	Professional social work practice at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist or Social Work - Advanced Standing - Direct Practice or Social Work - Advanced Standing (Planning, Administration and Community Practice) MSW student
SWG	515	Bridge Seminar II	Generalist practice problem-solving skills with diverse individuals, groups, families and systems at the master's level.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre- or corequisite(s): SWG 514
SWG	516	Social Work Skills Seminar	Focuses on the acquisition of practice skills for advanced interaction with individuals, families, groups and communities.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Corequisite(s): SWG 514; SWG 515
SWG	519	Research Methods/Social Work	Conceptual foundations and methods of nomothetic research in social work. Includes problem identification, hypothesis formulation, measurement, sampling, and experimental design.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	526	Mental Health/Sentencing	Helps justice system professionals understand existing mental health diagnoses, the DSM-5, and how specific DSM-5 categories are associated with specific types of crime.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	527	Mitigation Death/Life Cases	Issues and skills for practicing as a mitigation specialist in cases of death and life without parole.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	528	Presentence Investigations	Examines the functions and objectives of presentence investigation reports and prepares students to perform different types of investigations for limited and general jurisdiction courts for local, state and federal courts.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	529	Alternatives Penal Sanctions	Prepares individuals to practice as sentencing advocates on defense teams, as consultants to problem-solving courts, or as private presentence investigators hired by the defense to advocate for alternatives to incarceration.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	531	Social Policy and Services	Conceptual, analytical, and historical perspectives on the social welfare institution. Emphasizes poverty and inequality. Principles of policy analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	533	Diversity/Oppression/Soc Work	Explores issues of social inequality related to disability, ethnicity, gender, race, and sexual orientation. Emphasizes populations of the Southwest.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	540	Professional Experience I	Explains the historical origins of the social work profession, discusses the values and ethics unique to the profession, and familiarizes students with resources available at the school and the university for students enrolled in the MSW online program.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work - Standard Program MSW student; Credit is allowed for only SWG 540 or SWG 598 (Professional Seminar I)
SWG	541	Field Practicum I	With SWG 542, two consecutive semesters (480 hours) of supervised social work practice in an approved placement.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; Pre- or corequisite(s): SWG 510 with C or better if completed

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SWG	542	Field Practicum II	See SWG 541	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW or PhD student; SWG 510 with C or better; SWG 541 with a Y grade; Pre- or corequisite(s): SWG 511 with C or better if completed
SWG	545	Domestic Violence & Nat AmCorp	Provides students with basic domestic violence education and training in preparation for working with domestic violence survivors in the community, as well as support throughout their first semester of internship placement. Provides training in evidence-based interventions, including the implementation of an evidence-based safety decision aid, a tool to enhance risk assessment, safety planning, and referral to additional community resources. Also emphasizes the unique mission of AmeriCorps members through the Corporation for National & Community Service.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545
SWG	546	Teen Dating Violence Prevent	Covers theoretical and practice frameworks for understanding and preventing teen dating violence. Specifically, provides an overview of intimate partner violence in the adolescent developmental context, considers risk factors and impacts of victimizations and investigates methods of assessing and preventing dating violence in multiple contexts. Students critically engage with how practitioners and researchers might engage in dating violence risk reduction and prevention throughout the course, building up to a final project in which they develop their own prevention program. Focuses on issues of gender throughout the semester, and highlights the importance of community-based and culturally-responsive prevention and intervention. Students have the opportunity to think critically about the current understanding of dating violence, explore their own attitudes, and develop ideas for effective intervention and prevention	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	554	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 554 or SWG 591 (Overview of Addictions) or SWU 454 or SWU 498 (Overview of Addictions)
SWG	556	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 456 or SWG 556 or SWG 591 (Immigrants and Refugees)
SWG	557	SW Borderland Immigratn Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Credit is allowed for only SWG 557 or SWU 457
SWG	558	Intro Behavioral Hlth Services	Explores mental health. Develops a basic understanding of mental health and co-occurring conditions. Gains an understanding of public- and employer-financed contemporary behavioral health services with a focus on Arizona models.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 458 or SWG 558 or SWG 591 (Introduction to Behavioral Health Services)
SWG	559	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 459 or SWG 559 or SWG 591 (Spirituality & Helping Profession) or SWG 598 (Spirituality and the Helping Professions)
SWG	560	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student, Credit is allowed for only SWU 460 or SWG 560 or SWG 591 (Legal Issues in Social Work)
SWG	561	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 461 or SWG 561 or SWG 591 (Lesbian and Gay Issues)

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SWG	562	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 562 or SWG 591 (International Social Work) or SWU 498 (International Social Work)
SWG	563	Multicul Persptv Comm Devepmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWG	570	Aging in Perspective	Biopsychosocialspiritual perspectives on aging, including intergenerational matters, international trends, policies, programs, services and issues unique to populations of the Southwest.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 570 or SWG 591 (Aging Soc Wk Perspective)
SWG	571	Mental Health Aspects of Aging	Older adult mental health assessment, treatment, planning, policy and service delivery from a cross-cultural, interprofessional, intergenerational, international and continuum-of-care perspective.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 571 or SWG 591 (Mental Health & Aging)
SWG	572	Interprofessional Hlthy Aging	In-depth examination of healthy aging, interprofessional practice and interprofessional practice approaches designed to foster healthy aging for older adults.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	573	Policies: Promote Hlthy Aging	Age-based policy process and various social policies/programs that address financial, medical and psychosocial needs of older Americans.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	576	War and Disaster	Covers traumatic and stressful aspects of natural and mass disaster and war for individuals, families and communities and implications for working with those affected.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 576 or SWG 591 (War and Disaster)
SWG	577	Traumatic Death	Explores the various experiences of grief, trauma and bereavement through a phenomenological perspective and using creativity, art, literature, poetry, indigenous wisdom and evidence-based research. Practice techniques and psychosocial care to the traumatically bereaved. Examines the micro, mezzo and macro aspects of death and grief in contemporary society. Theory, philosophy and direct practice with individuals, families and groups experiencing traumatic death and grief.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only SWG 577, 591 (Trauma & Death Counseling) or 598 (Trauma&Death: Counseling, Theory, &Practice Issues)
SWG	579	Critical Incident Stress Mgt	Theory and research behind coping strategies and mechanisms commonly experienced by Emergency Management Teams (EMT) and DHS. Explores topics of stress, trauma, vicarious trauma and mass trauma as experienced by the individual and large populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	585	Macro Social Work Practice	Examines communities and human service organizations as social systems. Introduces strategies for initiating planned change.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prerequisite(s): SWG 606, 610, 623, or 645 with C or better; Pre- or corequisite(s): SWG 614 with C or better if completed; SWG 632 with C or better if completed; SWG 646 with C or better if completed

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SWG	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-4		Pre-requisites: Master Social Work student
SWG	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solution	School of Social Work	1-12		
SWG	603	Soc Work Prac-Health Settings	Advanced social work practice in health and behavioral health settings, focusing on enhancement of client functioning and quality of life.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	604	Adv Soc Wrk Practice in Health	Addresses the crucial social work practice issues of health and healthcare in the new millennium.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 603 with C or better
SWG	606	Assessment of Mental Disorders	Theories and concepts of mental health and illness. Attention to classification systems and nomenclature used in assessing mental disorders.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) MSW student; SWG 511 with C or better; SWG 542 with Y grade
SWG	608	Ecol Appr Pract Child,Yth Fam	Provides a theoretical and practical orientation to working with children, youth, and families from an ecological strengths perspective.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisites: SWG 542 with Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	609	Adv Prac Child Welfare Fam	Focuses on substance abuse, family violence, and serious mental illness in practice with families and children in the child welfare system.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	610	Adv Social Work Practice III	Knowledge and skills for advanced practice with individual and families.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW student OR SWG 542 with Y grade; Pre- or corequisite(s): SWG 640 with C or better if completed
SWG	611	Social Work with Families	Theory, concepts, and skills for working with diverse family populations. Emphasizes a systems and integrative approach.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	612	Social Work with Groups	Practices applications of knowledge and skill to social work with groups.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	613	Adv Soc Wk Prac/Behav Hlth	Treatment of prevalent disorders encountered by social workers, selected from the following: anxiety disorders, personality disorders, depression, and schizophrenia.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	614	Adv Generalist Soc Wk Prac IV	Knowledge and skills for advanced practice with groups and communities.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 640 with C or better
SWG	617	Adv Soc Wk Prac/Children	Theory, research, and intervention that focus on children and adolescents.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work MSW student; SWG 542 with Y grade or Social Work (Advanced Direct Practice) MSW or Social Work (Policy, Administration and Community Practice) MSW student
SWG	618	Adv Pract in Domestic Violenc	Theory, research, intervention, and prevention strategies relevant to child maltreatment, partner abuse, and elder abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major

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SWG	619	Practice-Oriented Research	Accelerated course in application of scholarly and scientific principles to field practice, problem formulation, interventional procedures, and impact assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 519 with C or better or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	621	Integrative Seminar	Explores the fit between theoretical frameworks and practice with clients. Requires presentation of empirical studies with clients.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 606 with C or better; SWG 619 with C or better; SWG 641 with Y; Pre- or coreq(s): SWG 613 with C or better if completed OR SWG 617 with C or better if completed OR SWG 661 with C or better if completed; SWG 642 with Y if completed
SWG	623	Program Evaluation	Research design techniques and data collection in human service agencies and communities. Analysis for program evaluation and needs assessment.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) or Social Work (Advanced Generalist) MSW major OR SWG 519 with C or better; SWG 542 with Y grade
SWG	626	Crisis Intervention/Short-Term	Comprehensive analysis of crisis and solution-focused brief intervention strategies and approaches used in advanced social work practice.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	630	Brief Social Work Intervention	Concepts and techniques of solution-focused, systematic, and strategic approaches to therapy in the context of brief therapy.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major
SWG	632	Policy Practice	Develops advanced knowledge and skills in social welfare policy analysis, policy formulation, and advocacy and intervention for policy change.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW, Social Work (Advanced Generalist) MSW, Social Work (Planning, Administration and Community Practice) MSW student OR SWG 531 with C or better; SWG 542 with Y grade
SWG	633	Child Welfare Services	Examines, using ecological and system theories, services that supplement, support, and substitute for parental care of children.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisites: SWG 542 with grade of Y or MSW Social Work (Advanced Direct Practice) or MSW Social Work (Planning, Administration and Community Practice) major
SWG	640	Professional Seminar II	Applies social work's knowledge base to advanced generalist social work.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW major OR SWG 542; Credit is allowed for only SWG 640 or SWG 598 (Professional Seminar II)
SWG	641	Adv Practicum: Direct Prac I	With SWG 642, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student OR SWG 542 with Y grade; minimum 3.00 GPA
SWG	642	Adv Practicum: Direct Prac II	With SWG 641, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 641 with Y grade; minimum 3.00 GPA
SWG	643	Adv Practicum: Plan,Soc Wk Adm	With SWG 644, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prereq(s): Social Work Adv Standing (Policy, Admin & Community Prac) MSW student OR SWG 542 with Y grade; min 3.00 GPA; Pre- or coreq(s): SWG 681 with C or better if completed; SWG 682 with C or better if completed; SWG 685 with C or better if completed
SWG	644	Adv Pract: Plan,Soc Wk Prac II	With SWG 643, two consecutive semesters (480 hours) in social work practice in an approved placement related to the student's career goal.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 681 with C or better; SWG 682 with C or better; SWG 685 with C or better; SWG 643 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 623 with C or better if completed; SWG 632 with C or better if completed

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SWG	645	The Professional Experience III	With SWG 646, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work - Advanced Standing - Advanced Generalist MSW student OR SWG 542 with Y grade; SWG 640 with C or better; Pre- or corequisite(s): SWG 610
SWG	646	Professional Experience IV	With SWG 645, two consecutive semesters (480 hours) of supervised social work practice in an approved placement related to the student's career goal.	N	PRA	N	YGB	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWG 610 with C or better; SWG 645 with Y grade; minimum 3.00 GPA; Pre- or corequisite(s): SWG 614
SWG	647	The Domestic Violence Movement	Provides training and education in preparation for political and community advocacy to address domestic violence and sexual assault from a macro social work perspective. Provides education in the history of the domestic violence movement, including its roots in the feminist perspective and the rape crisis movement. Furthermore, students critically analyze the domestic violence movement, examining the role of marginalized populations within the movement as well as unintended consequences of the movement. Concludes by planning for the future of the domestic violence movement, including next steps in policy advocacy, programming and community engagement.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	648	Intimate Partner Violence	Examines the use of intimate partner violence (IPV, aka, domestic violence) risk assessment in social work practice with survivors of IPV. Examines theories and research that explain, define and describe IPV risk assessment; the intended uses and predictive value of the various available IPV risk assessment instruments; and the use of IPV risk assessment instruments in social work practice interventions, including within risk informed collaborative interventions (e.g., the Lethality Assessment Program). Presents an evidence-based practice framework for the use of risk assessment in social work practice. Encourages students to think critically about the use of risk assessment across social work practice settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	654	Introduction to Sexual Abuse	Develops general knowledge and skills for working with persons who have been impacted by sexual abuse.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	655	Qual Life Master Mindfulness	Addresses key elements of a healthy life style contributing to wellness and disease through experiential learning and evidenced-based research.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	656	Treating the Whole Person	Addresses treating the "whole person's" physical and behavioral health through interviewing, intervention, and treatment within the context of an interdisciplinary model.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	657	Holistic Therapies Modern Time	Historical development and research of the ancient healing teachings of traditional Chinese medicine, Ayurvedic medicine, homeopathic, naturopathic, and indigenous medicine and how they are used in today's health systems.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Assessment of Integrative Health Modalities (certificate) or degree-seeking graduate student
SWG	661	Cognitive Behavior Therapy	Knowledge and skills to understand and apply cognitive-behavioral approaches to treatment (CBT), including diagnostic information and empirically supported interventions targeted to individuals, families and groups across the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW student OR Pre- or corequisite(s): SWG 542 with Y grade
SWG	662	Soc Wk Practice w/Adolescents	Advanced elective focuses on working with adolescents in a variety of intervention settings (e.g., mental health agencies and schools).	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Social Work Practice With Adolescents) or 662
SWG	663	Clinical Trauma Treatment	Explores the assessment and treatment of PTSD in people throughout the lifespan.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Clinical Trauma Treatment) or 663

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SWG	664	Treatment Substance Disorders	Knowledge and skills to understand substance abuse disorders, including diagnostic information and evidence-based interventions targeted to individuals, families and groups.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: SWG 542 with grade of Y OR MSW Social Work (Advanced Direct Practice) or Social Work (Planning, Administration and Community Practice) major; Credit is allowed for only SWG 591 (Treatment Substance Use Disorders) or 664
SWG	681	Social Work Administration	Administrative skill building and theory application within human service nonprofit social work settings.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work Advanced Standing (Advanced Direct Practice) MSW or Social Work Advanced Standing (Policy, Administration and Community Practice) MSW student OR SWG 542 with Y grade
SWG	682	Community Participation Strats	Reviews strategies to involve citizens and the consumers of social and human services in community decision-making systems. Participation is viewed as a means to facilitate the empowerment of oppressed peoples.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work Advanced Standing (Advanced Direct Practice) MSW or Social Work Advanced Standing (Policy, Administration and Community Practice) MSW student OR SWG 542 with Y grade
SWG	685	Program Planning Soc Services	Social services planning process; includes needs assessment, goals and objectives, program design, budgeting, management information systems, and program evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work (Advanced Direct Practice) MSW or Social Work (Planning, Administration and Community Practice) MSW student OR SWG 542 with Y grade; SWG 585 with C or better
SWG	686	Dev Grants & Fund Raising	Identifies potential funding sources, technical and interpersonal/political aspects of proposal development and fund raising.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student
SWG	687	Public Policy and Advocacy	Covers public policy at the federal level, including administrative, legislative and judicial policy. Students understand how to develop congressional policy and methods to engage in advocacy at the federal level to impact macro social work practice.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only SWG 687 or SWG 591 (Advocacy and Public Policy)
SWG	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prerequisite(s): Master or Doctor Social Work student
SWG	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-12		Pre-requisites: MSW or MSW Advanced Standing student
SWG	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	SEM	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		Prereq(s): SWG 606 w/ C or better; SWG 610 w/ C or better; SWG 623 w/ C or better; SWG 640 w/ C or better; SWG 645 w/ Y grade; Pre- or coreq(s): SWG 614 w/ C or better if completed; SWG 632 w/ C or better if completed; SWG 646 w/ Y grade if completed
SWG	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solution	School of Social Work	1		Pre-requisites: MSW, MSW Adv Standing, or PhD student
SWG	718	Qualitative Research Methods	Provides comprehensive qualitative research methods training for doctoral students to complement their quantitative survey research methods knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 718 or 791 (Qualitative Research Methods)
SWG	719	Quantitative Research Methods	Provides the tools for independently designing and conducting methodologically sound, ethical, quantitative research that advances social work and social welfare knowledge.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Doctoral student
SWG	720	Phil of Sci Issues in Soc Wk	Critical examination of social science, social work practice, and policy in terms of philosophical assumptions and varying frames of reference.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Master or Doctor Social Work student.

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SWG	721	Statistics	Logic and application of statistical methods for analyzing social welfare-based data pertaining to social work. Includes ethical issues concerning the appropriate application, interpretation and use of social research, as well as the potential limitations and biases of applications that fail to adequately consider issues of population diversity. Students learn to independently design a research project from start to finish employing statistical analysis of primary data.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: doctoral major
SWG	722	Pedagogy in Social Work	Prepares doctoral students to teach for the profession of social work. Provides an opportunity for students to develop or enhance their philosophy of teaching, their attitudes toward learning, teaching and students, and the knowledge and skills necessary to teach effectively. Explores teaching to the diverse students present in social work programs, the challenges that teaching presents and the responsibilities that come with social work education.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Doctoral student; Credit is allowed for only SWG 722 or SWG 791 (Pedagogy in Social Work)
SWG	723	Proposal Development	Provides an opportunity for doctoral students to formulate a dissertation proposal or a research plan for a three-paper option. Provides a forum for presenting ideas, receiving feedback and defending one's proposal.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 723 or 791 (Proposal Development)
SWG	731	Welfare State	Examines the evolution of the welfare state as a problem of political economy.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre-requisite: Doctoral student; Credit is allowed for only SWG 731 or 791 (Welfare State)
SWG	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-12		Pre-requisite: Master or Doctor Social Work student.
SWG	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWG	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	Watts College of Public Service & Community Solution	School of Social Work	1		
SWG	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	IND	Y	Z2	Watts College of Public Service & Community Solution	School of Social Work	1-15		Pre-requisite: Master or Doctor Social Work student.
SWU	171	Introduction to Social Work	Descriptive and historical perspectives of social problems, social justice issues and society's response to them.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	SB & H	
SWU	180	Intro to LGBT Studies	A historical, socio-cultural introduction to lesbian, gay, bisexual, transgender, transsexual, and intersexed communities and their resilience to challenges and barriers.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB & C	Credit is allowed for only SWU 180 or SWU 194 (Introduction to LGBT Studies) OR Visiting University Student
SWU	181	Econ: Social Issue Perspective	Introduces economic principles through the lens of contemporary social issues for social work and related fields.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Credit is allowed for only SWU 181 or SWU 194 (Economic and Social Issues in Perspective) OR Visiting University Student
SWU	182	Soc Serv Perspective Gov't	Explores levels of government and policy practice in advancing social and economic justice and effective social services within the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB	Credit is allowed for only SWU 182 or SWU 194 (AZ/National Government: Social Work Perspective) OR Visiting University Student
SWU	183	Intro Ethics:Soc Issue Perspec	Introductory exploration of ethics from a historical and multicultural perspective viewed through the lens of contemporary social issues.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	HU	Credit is allowed for only SWU 183 or SWU 194 (Intro Ethics: Social Issues Perspective) OR Visiting University Student
SWU	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-4		

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SWU	250	Stress Management Tools I	Helps students develop an understanding and behaviors to create a healthy balance in their lives by studying the bio/psycho/social aspects of wellness.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	SB	
SWU	291	Social Service Delivery Syst	Federal, state, private not-for-profit and for-profit social service delivery system's purpose, structure, and professional roles. Includes 40 volunteer hours.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-4		
SWU	295	Found of Social Wk Practice	Theoretical foundation and skill base for effective culturally competent communication and interviewing with individuals, families, small groups, and larger systems.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	SB & C	Prerequisite(s): PSY 101 or SOC 101; Pre- or corequisite(s): SWU 171 with C or better if completed OR Visiting University Student
SWU	302	Human Biology for Soc Workers	Overview of human anatomy and physiology, and the reciprocal relationship between physical and social environments. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		
SWU	303	Micro Human Behav Social Envir	Human behavior in the social environment throughout the life cycle, analyzing theories of human development within an integrative multidimensional framework.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	L or SB	Prerequisite(s): Comm Advoc & Soc Pol BA major; ENG 101, 105 or 107 with C or better OR ENG 101, 105 or 107 with C or better; PSY 101 or SOC 101; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better OR Visiting University Student
SWU	306	Ethics in Social Services	Focuses on following the NASW Code of Ethics in making ethical decisions in social service settings.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; PHI 101, PHI 105, or SWU 183; SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	310	Social Work Practice I	Introduces social work methods, emphasizing the following skills: relationship development, cross-cultural interviewing, communication patterns, and case-recording.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWU 171 or SWU 271 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 303 with C or better if completed
SWU	311	Integrative Soc Wk Practice	Social work practice skills emphasizing cross-cultural interviewing, assessment and professional recording.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 312 OR Visiting University Student
SWU	312	Integrative Soc Wk Prac Skills	Applies social work content from SWU 311 focusing on practice skills and professional behavior.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWU 171 with C or better; SWU 291 with C or better; SWU 295 with C or better; Pre- or corequisite(s): SWU 306; Corequisite(s): SWU 311 OR Visiting University Student
SWU	320	Research Methods in Social Wk	Applies scientific principles to field practice, problem formulation, intervention procedures, and impact assessment in social work.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Pre- or corequisite(s): SWU 311 with C or better if completed; SWU 312 with C or better if completed OR Community Advocacy and Social Policy BA major OR Visiting University Student
SWU	321	Statistics for Social Workers	Teaches social work students how to use and interpret descriptive and inferential statistics in social work practice. May be repeated for credit.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	CS	Prerequisite(s): MAT 142 or an MA general studies course OR Visiting University Student
SWU	332	Social Policy and Advocacy	Contemporary social, political and economic issues. Special emphasis on advocating for oppressed populations. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Community Advocacy and Social Policy major or Public Service and Public Policy major; POS 110 or POS 310 or SWU 182 OR Visiting University Student
SWU	340	Macro Human Behav Social Envir	Human behavior in the social environment, focusing on groups, organizations and communities and examining theoretical perspectives in a macro context.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB	Pre- or corequisite(s): Community Advocacy and Social Policy BA major OR SWU 303 with C or better if completed OR Visiting University Student

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SWU	349	Stress Management Tools II	Developing mindful strategies toward managing stress, developing instinct awareness; healthy decisions in nutrition, relationship with self, others and creating a personal carbon footprint.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB	Credit is allowed for only SWU 349 or SWU 294 (Stress Management Tools II) OR Visiting University Student
SWU	350	Whole Person Health	Development of mindful strategies toward managing stress and identification, implementation and integration of skills and knowledge for well-being across the lifespan.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	351	Sustainable Living-Mndful Eating	Addresses issues related to foods we eat, how we eat, and impacts of choices on health, the environment, locally and globally.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
SWU	374	Diversity/Oppression/Soc Wk	Issues of social inequality related to race, ethnicity, gender, sexual orientation, and disability. Emphasizes populations of the Southwest.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	C	Prerequisite(s): Community Advocacy and Social Policy BA major or Social Work BSW major OR Visiting University Student
SWU	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
SWU	410	Social Work Practice II	Knowledge and skills in social work practice with individuals and families.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; PHI 101 or PHI 105 or PHI 306 or SWU 183; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 412; SWU 413 OR Visiting University Student
SWU	411	Social Work Practice III	Knowledge and skills in social work practice with groups, communities, and organizations.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410, 412, or 413 with C or better; Corequisite(s): SWU 414; SWU 415 OR Visiting University Student
SWU	412	Field Instruction I	16 hours a week of supervised practice in an approved placement. "Y/E" grade only.	N	PRA	N	YGB	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 410; SWU 413 OR Visiting University Student
SWU	413	Field Instruction Seminar	Field-focused seminar, including practice evaluation.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412 OR Visiting University Student
SWU	414	Field Instruction II	16 hours a week of supervised practice in an approved placement. Y/E grade only.	N	PRA	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with Y grade; SWU 413 with C or better; minimum 2.00 GPA; Corequisite(s): SWU 411; SWU 415 OR Visiting University Student
SWU	415	Integrative Field Seminar	Field-focused seminar to help students integrate practice and theory.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; SWU 410 with C or better; SWU 412 with C or better; SWU 413 with C or better; Corequisite(s): SWU 411; SWU 414 OR Visiting University Student
SWU	416	Domestic Viol & Natl AmeriCorps	Prepares students for working with domestic violence survivors in the community and to implement evidence-based practices in domestic violence services.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only SWU 416 or SWU 494 (Domestic Violence Americorp Serv Practicum) or SWG 545 OR Visiting University Student
SWU	417	Tech, Interpersonal Relationships	Examines the influence, impact and role of information communication technologies within interpersonal relationships. Draws from theoretical concepts, current events and student experiences to understand the risks and benefits to incorporating mediated communications into personal relationships. Also examines ways that technology can further abuse and mistreatment of marginalized groups by reviewing research about online harassment, cyberbullying, cyberstalking, monitoring, surveillance, and other forms of online exploitation. Students use readings, lectures and assignments to understand ethical implications when incorporating technology into our social lives.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum 45 hours

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SWU	418	Global Violence Against Women	Examines experiences of and responses to violence against women (VAW) from global perspectives. Throughout the semester students explore drivers and consequences of violence against women across geographic and practice contexts. Examines critical approaches and evidence-based practice modalities. While the focus of the course is on women's experiences of violence, students have opportunities to explore a wide range of identities related to gender, sexual orientation, race, social status and differing abilities. Draws from local expertise in the practice community and offers integration of classroom content with contemporary issues related to both policy and practice at the local, state, national and international levels.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum 45 hours
SWU	432	Social Policy and Services	Contemporary social, political, and economic issues. Special emphasis on poverty and inequality in the Southwest. Analysis and development of social welfare policies and programs.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; ECN 211 or SWU 181; POS 110, POS 310, or SWU 182; SWU 311 with C or better; SWU 312 with C or better; Corequisite(s): SWU 410; SWU 412; SWU 413 OR Visiting University Student
SWU	442	Child Welfare Practice	Focuses on the characteristics, strengths, and service needs of families and children in the Child Welfare System.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Social Work BSW major; Service & Community Solution with C or better; SWU 413 with C or better OR Visiting University Student
SWU	450	Mastering Mindfulness	Facilitates mastering mindfulness practice. Students teach a lesson and develop a training proposal that will be implemented and evaluated.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWU 250; SWU 349
SWU	454	Overview of Addictions	Addictions and their impact upon society including alcohol, legal and illegal drugs, gambling, the Internet, sex and pornography. Focuses on the etiology of addictions that impact our society on a micro, mezzo and macro level. Provides an ecological perspective to view human behavior across the life span as it relates to addictive behaviors.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 454 or SWU 498 (Overview of Addictions) or SWG 554
SWU	456	Immigrants and Refugees	Provides basic conceptual approach to understanding immigrant and refugee issues and how these factors influence social work practice with immigrant and refugee populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 456 or SWU 498 (Immigrants & Refugees) or SWG 556 OR Visiting University Student
SWU	457	SW Borderland Immigratn Issues	Reviews immigration history, trends, policies, and legislation. Focuses on immigrant experience from economic, educational, social, political, familial perspectives in Southwestern U.S.	N	SEM	N	OPT	Watts College of Public Service & Community Solution	School of Social Work	3	C	Credit is allowed for only SWU 457 or SWG 557 OR Visiting University Student
SWU	458	Behavioral Health Services	Behavioral health conditions; their impact on the individual, family and community; and historical and contemporary service models.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 458 or SWU 498 (Behavioral Health Services) or SWG 558 OR Visiting University Student
SWU	459	Spirituality and Helping Prof	Provides a framework for spiritually and culturally competent practice with diverse populations.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 459 or SWU 494 (Spirituality and the Helping Professions) or SWU 498 (Spirituality & Helping Profession) or SWG 559
SWU	460	Legal Issues in Social Work	How the law relates to social work practice, administration and policy.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 460 or SWU 498 (Legal Issues in Social Work) or SWG 560 OR Visiting University Student
SWU	461	LGBTQ Issues	Historical, socio-cultural introduction to lesbian, gay, bisexual and transgender communities and their resilience to challenges and barriers.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	C	Prerequisite(s): minimum junior standing; Credit is allowed for only SWU 461 or SWU 498 (Lesbian/Gay Issues) or SWG 561 OR Visiting University Student
SWU	462	Global Social Welfare	Analyzes social work's response to international social issues and human need from the perspectives of globalization, development and human rights.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3	G	Prerequisite(s): minimum junior standing; Credit is allowed for only SWG 562 or SWU 498 (International Social Work) or SWU 462

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SWU	463	Multicul Perspvt Comm Developmn	Analyzes solutions to contemporary social and economic problems from a global perspective. Focuses on local community issues; helps community members from diverse ethnic and cultural backgrounds understand differences and their impact on social behavior.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): Junior standing; Credit is allowed for only SWU 463 or SWG 563 or CRD 494, CRD 598, NLM 494, PAF 494, PAF 591, SOS 494, SSH 494, SWG 591, or SWU 498 (Multicultural Perspective on Community Development)
SWU	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-12		
SWU	488	Advocacy Strategies	Comprehensive advocacy approach that spans administrative, legislative and community strategies.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Social Work	3		Prerequisite(s): SWU 303; SWU 306; SWU 320; SWU 340; SWU 350; SWU 374; senior standing OR Visiting University Student
SWU	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-6		Prerequisite(s): Barrett Honors student
SWU	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	IND	N	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
SWU	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-4		
SWU	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Social Work	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
SWU	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Watts College of Public Service & Community Solution	School of Social Work	1-3		Pre-requisite: Bachelor of Social Work student
TAM	505	Navigating Gbl & RBES	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. Develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. Deals with the regional business environment. Begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the Latin American business environment. While the emphasis is Latin America, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	511	Global Accounting	Covers the fundamentals of financial accounting and managerial accounting in a global environment. Financial accounting focuses on providing useful information to users for external decision making. By understanding the structure and process of preparing a balance sheet, income statement and statement of cash flows, students learn how to interpret, analyze and evaluate domestic and international companies. Managerial accounting focuses on providing useful information for internal decision making. By identifying and understanding different types of cost information, students learn how to utilize and prepare cost-volume profit analysis, relevant cost analysis, activity-based costing and performance evaluation within global organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	521	Finan Value Creation for Ldrs	Covers fundamental concepts and practices of modern financial management within a market-oriented framework. Develops analytical skills for sound financial decision making and management. Emphasizes practical applications and equips learners with tools necessary to make investment and financing decisions in a global setting. Achieves learning via problem solving, video lectures, case analysis and discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TAM	530	Leading Digital&Data Decision	Includes global examples across industries and how leaders make managerially relevant decisions based on data. Explores how companies benefit from a digital ecosystem including sensors (IoT), Blockchain, artificial intelligence (AI), and augmented reality (AR) that move data-driven insights from the data scientist to the boardroom. Examines implications for customer relationship management, privacy, security and global government regulation that are shaping and are shaped by the democratization of data. Examines the importance of data visualizations and dashboarding for decision making that transform mere data into information and insight. Identifies how to be a more effective diagnostic leader in a data-rich world, identifying opportunities to improve business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	531	Project and Ops Leadership	Strategies and challenges associated with leading projects and designing and improving service and manufacturing processes. Topics include project management, value-chain structures, supplier partnerships, logistics, risk management and value-stream mapping.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	534	Global Venture Creation	Covers the most essential topics for first-timer startup founders. Teaches how to quickly identify and test new business ideas, and how to launch a new venture when an idea worth pursuing is found. Provides a good understanding of the entrepreneurial journey and what is involved when launching a new business. Students develop a new business idea, build and test business model and deliver a professional business pitch at the end of the course. Highly experiential and involves a great deal of customer interactions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TAM 511; TAM 541
TAM	541	Strat in a Competitive World	Focuses on choices that have an impact on the performance of the entire organization or business start up. Includes the problems faced by, and the decisions made by, executive leaders who have to balance the needs and expectations of stakeholders including customers, shareholders and employees with the requirements of local country practices and government regulations. Analyzes problems and decisions from the point of view of the founder, general manager or chief executive who has responsibility for the welfare of the entire organization. By focusing on policy decisions, concerns the choice of goals as well as the organization; management and deployment of scarce resources to pursue these goals within the context of an imperfect, changing and competitive world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	542	Global Ldrshp & Personal Devlp	Personal leadership development is optimized by grounded reflection, self knowledge and continuous learning as we interact with others. Therefore, the personal development part of this course cultivates introspective and skill-building competencies that include conceptual grounding that is based in an experiential learning focus. Discusses self- and other-awareness and engages in group/team interaction, as well as conducts individual self-assessments and individual feedback. In addition to developing ourselves at the personal level, developing ourselves as leaders at the organizational level is imperative to sustainability of the company.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird graduate student
TAM	557	Gibl Mktg Strat & Mgmt	Focuses on macro issues such as market orientation, segmentation, targeting and positioning and their strategic implications within the context of customer, competitor and context analysis. Emphasizes analytical and managerial decision tools for creating competitive advantage, and the similarities and differences in domestic and global marketing. Also examines how digital transformation has influenced the role of analytics in today's hyper competitive organization. Also focuses on the micro topics used to execute and implement strategies learned in the first part of the course. Covers the marketing mix (4Ps), namely pricing, product, promotion and place, and examines how these tools could be used to add value to firms in an international setting, and how they could be effectively applied to create, price, communicate and deliver value to customers and important stakeholders using quantitative and qualitative analyses.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TAM	582	Comm & Neg in Dyn Gbl Wrld	Improves global mindset and negotiation skills by focusing on cross-cultural issues, communication issues and negotiation in cross-cultural environments. Provides an in-depth examination of culture, its managerial implications and negotiation. Explores various methodologies to understand and measure national cultures. Embarks on a rigorous and practical journey to examine the impact of national culture, no matter how it is measured, on communication dynamics in a cross-cultural environment and focuses on specific skill sets to help students succeed in such situations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	589	Global Field Seminar	Businesses confront significant differences among countries in regard to industry structures as well as economic, political, societal and cultural forces, especially in the new era of Industry 4.0. These differences create new challenges and opportunities for businesses that extend their activities internationally. Given the tremendous diversity and rapidly changing business environment across the globe, it is important to address (1) the forces impacting a country's business environment, (2) the implications of these factors for business strategies. Provides a framework and an analytical approach to study the dynamics of business environment in a particular region. Conducted on the ground in country, focuses on-site visits to companies and/or government entities, and interactive discussions with speakers. Emphasizes contemporary issues relevant to understanding the business environment.	Y	SEM	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TAM	597	Integrative Project	Integrates business subjects covered in the program online. Helps students fine tune their business plans and prepare presentations for potential fund raising. Provides tools for effective presentation, preparing pitch deck for fund raising and successful negotiation of the term sheets. Learning is achieved via lectures, discussions, presentations and role play as negotiators.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TAM 511; TAM 521; TAM 534; TAM 541; TGM 505; TGM 540; TGM 551; TGM 579
TCL	101	Latinas/os in the U.S.	Historical and contemporary issues in Latina/o communities in the U.S.; focuses on the diverse economic, sociological, cultural and political status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	111	Latinx Cultural Studies	Interdisciplinary analysis of customs, values, belief systems, and cultural symbols; special attention is given to cultural continuity and change.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	201	Transborder Society&Culture I	Intensive overview of Mexican origin and Latina/o populations through various sociological, historical, anthropological, economic, political, cultural, literary, and analytical lenses.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	202	Transborder Society&Culture II	Examines contemporary transborder culture; issues of health, gender, class, race, sexuality, family, colonialism, community development, migration and well being, within a transnational context.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	
TCL	210	Intro to Ethnic Studies in US	Covers diversity of experiences and relations among racial and ethnic groups in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only AFR 212 or APA 210 or JUS 210 or TCL 210 OR Visiting University Student
TCL	211	Latinx Poetics	Writing seminar on Latina, Latino and Latinx poetics; intensive creative writing workshop.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	
TCL	220	Tmsbrdr Latina/o Exprsv Cltre	Examines media, literature, performance, and visual art grounded in the historical experiences of transborder Latina/o communities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	230	Exprsv Cltr Latin Am/Caribbean	Interdisciplinary social science introduction to various forms of cultural expressions found throughout Latin America and the Caribbean region and in Latina/o communities within the United States. Uses a transborder perspective to examine how migration, race, ethnicity, gender, power, history and identity shape and influence different aspects of Latina/o culture and identity. Focuses on the study of a wide array of expressive practices including music, dance, verbal arts, myths and folktales, festivals, sports and food in Mexico, the Spanish Caribbean and their counterpart Latina/o communities in the United States. Class lectures and readings introduce basic concepts such as ethnography, ethno-musicology, culture, representation and globalization.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; Credit is allowed for only ASB 220 or TCL 230 OR Visiting University Student

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TCL	275	Culture, Language & Learning	Examines the dynamic and complex interplay of language, culture and learning within and across individuals, groups, institutions and cultures in diverse multicultural, multilingual and transborder contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Credit is allowed for only ASB 275 or TCL 275
TCL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	303	Transborder Theory	Studies historical, cultural, and economic theories contributing to understanding the emergence of Mexican and Latina/o origin populations in the Americas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 303 or TCL 303 OR Visiting University Student
TCL	304	Transborder Research Methods	Emphasizes critical skills: quantitative/qualitative, spatial, archival, and reflexive methodologies, including ethnographic, biographical, historical, and mapping.	N	RSC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours
TCL	305	Transborder Practicum	Field work with faculty incorporating practical experience while honing research skills and ability.	N	PRA	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Pre- or corequisite(s): TCL 303 with C or better if completed; TCL 304 with C or better if completed
TCL	310	Folklore of the Southwest	Analyzes the folk beliefs, practices and expression of Mexican-origin and other Latinx populations. Focus includes art, music, performance and every day practices.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	314	Transborder Latin Am Migration	Historical/contemporary overview of Mexican and other Latin American migration into and within the U.S.; factors affecting population movement, settlement patterns and migrants' incorporation into society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & H & C	Prerequisite(s): ENG 101, 105 or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 314 or TCL 314 OR Visiting University Student
TCL	315	Latinx Family Structures	Traditional and changing family relationships of Mexican-origin and Latinx populations; emphasizes gender and intergenerational relations and impact of modern society on traditional family values.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	321	Transborder Comm Dev & Health	Emphasizes core concepts and practices relevant to regional community development and health, including demographic health indicators, individual, and community models.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only SOC 320 or TCL 321 OR Visiting University Student
TCL	323	Latina/o Health Issues	Health issues among U.S. Latina/o populations; interplay among political economy, health, family, culture and community.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours OR Visiting University Student
TCL	326	Health of Chicanas and Latinas	Examines gender, ethnicity, and health; critical issues affecting health status of Chicanas and Latinas.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better
TCL	327	Health and Migration	Focuses on health status among various immigrants; health trajectories following migrations, adaptive behaviors, health practices, and the role of policy.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): ENG 102, 105, or 108 with C or better or minimum 24 hours
TCL	328	US Latino Religion & Culture	U.S. Latino and Latin American religious history with special attention to what have become Hispanic mestizo hybrid cultures.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 earned hours; Credit allowed for only REL 326 or TCL 328
TCL	331	Mexican American Hist to 1900	Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 331 or TCL 331 OR Visiting University Student
TCL	332	Mexican Amer Hist Since 1900	Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & H & C	Prerequisite(s): ENG 102, 105 or 108 with a C or better; minimum 30 hours; Credit is allowed for only HST 332 or TCL 332 OR Visiting University Student
TCL	335	Hstrial Stds in Race, Crime&Law	Studies the historical relationship between the criminal justice system in the United States and a segment of society that has traditionally faced official and unofficial discrimination: American racial minorities. Focuses on the experiences of Mexican Americans and Africans Americans with the criminal justice system.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 with C or better; ENG 102 with C or better; Credit is allowed for only AFR 335 or HST 323 or TCL 335 OR Visiting University Student
TCL	340	Chicano and Latino Politics	Historical/contemporary analysis of Chicana and Chicano political ideologies, attitudes, strategies, and movements; relations with governmental agencies; and public policy issues.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
TCL	341	Latinas/os and the City	Examines major contemporary issues affecting Latina/o communities in U.S. cities. Explores elements and trends in the urban social fabric and landscape associated with a growing Latino presence and its connection with ethnic diversity, transnationalism, cultural resistance and resilience. Pays particular attention to the political economy and planning of Latino communities in the Southwest with selected comparison drawn from other U.S. cities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR minimum 24 hours OR Visiting University Student

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TCL	342	Social Demographics of Latinos	Provides an introduction to social demography of Latinos in the U.S. from the 19th century to the present.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only SOC 343 or TCL 342
TCL	343	Latinas/os and the Environmen	Examines the nexus among race/ethnicity, migration, class and the built and natural environment. Explores the proposition that Latina/o and other ethnic minorities and socioeconomically disadvantaged populations bear a disproportionate burden of environmental challenges and its consequences for equality, health and quality of life. Key topics include environmental racism, vulnerability and resilience, climate change, community organizing, and mobilization. Pays considerable attention to community-based efforts to deal with environmental problems affecting the Latina/o population in the U.S. Southwest.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): ENG 101 or 105 or 107 with C or better OR minimum 24 hours; Credit is allowed for only ASB 343 or PUP 343 or SOS 343 or TCL 343 or ASB/PUP/SOS/TCL 394 (Latinos and the Environment)
TCL	348	The Borders of Language	In-depth focus on language use, multilingualism and social life in borderlands contexts, in and out of school. Explores the historical and contemporary dimensions of language use in the borderlands, including Indigenous languages, English and Spanish, and hybrid forms. Also introduces theories and methods in the field of linguistic anthropology. Students conduct research on everyday linguistic practice and connect it to broader sociopolitical realities.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105 or 107 with C or better; Credit is allowed for only ASB 348 or ASB 394 (The Borders of Language) or ENG 348 or ENG 394 (The Borders of Language) or TCL 348 or TCL 394 (The Borders of Language)
TCL	350	Chicana/o Artistic Production	Overview of Mexican and Chicana/o artistic production from colonial times to present; emphasizes religious and folk art.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C & G	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	351	Chicana/o and Latina/o Art	Intensive analysis of contemporary Chicana/o and Latina/o art movement as appraised within the context of contemporary American art and the art of Mexico.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 101, 105, or 107 with C or better or minimum 24 hours
TCL	352	Chicana/o Film	Explores how Chicano and Chicana filmmakers have interpreted the Chicano experience through the medium of film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	C	Credit is allowed for only FMS 352 or TCL 352
TCL	355	Transborder Digital Media	Covers digital media-making with a focus on issues relating to the U.S.-Mexico border region, specifically within the Phoenix community.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only FMP 355 or TCL 355 or FMP 394 (Intro to Transborder Digital Media Making) or TCL 394 (Intro to Transborder Digital Media Making)
TCL	360	Inequality/Diversity Education	Advanced exploration of various dimensions of diversity in relation to educational systems and outcomes. Through sociological and psychological research, case studies and films, students examine how educational inequality is created and reproduced through individual actions and institutional constraints. Also considers the connection between schooling and human rights and ways in which educational inequality may be addressed.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; AFR 212, APA 200, APA 210, CDE 232, JUS 210, TCL 210, or minimum 24 hours; Credit is allowed for only AFR 350, APA 350, CDE 350, JUS 365, SOC 350, or TCL 360 OR Visiting University Student
TCL	362	Urban Comm Latinx City	Explores and reflects on the impact of mediated representations of Latinx ethnic enclaves in the configuration of notions of community, citizenship and sense of belonging. Also looks at the role of media in identity formation as a way of engaging and challenging cultural, social and political ideologies and struggles in urban contexts.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 362 or COM 394 (Urban Communication: Reinventing the Latinx City) or TCL 362 or TCL 394 (Urban Communication: Reinventing the Latinx City) OR Visiting University Student
TCL	363	Transborder Chicano Literature	Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 363 or TCL 363 OR Visiting University Student
TCL	370	Signs of Aliens	Introduces semiotics and cultural studies; looks at various meanings ascribed to the sign of the alien.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU	Credit is allowed for only FMS 370 or TCL 370
TCL	371	Language Hegemony and Culture	Historical and cultural analysis of language and the ideological constructs imposed upon resident populations in the Southwest North American region since 1540. Analyzes the suppositions, ideologies, premises and mechanisms by which Spanish and English became imposed among Native peoples and later national populations of Mexicans during the 19th century and continuing with their descendants and migrating populations crossing the bifurcated border.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 371 or HST 371 or SLC 371 or SPA 371 or TCL 371 or ASB/HST/SLC/SPA/TCL 394 (Language Hegemony & Culture in SW North America)
TCL	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours; Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
TCL	377	AZ Immigration, Latino Politics	Contemporary immigration and its related issues have generated significant debates, reforms and responses by government officials, businesses and private citizens, to name but a few in this country. This course provides a much-needed framework for understanding some of the immigration issues in Arizona and the country generally. It also focuses on some of the political responses by Latinos and their significant mobilization at the local, state and federal levels.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only JUS 377 or POS 377 or SGS 377 or TCL 377 or JUS/HST/POS/SGS/TCL 394 (Arizona, Immigration, Latinos and Politics) OR Visiting University Student
TCL	378	Globalization	Explores the impact of globalization on local societies and cultures by focusing on the international migration of peoples, the global expansion of capitalism and global mass media and popular culture. Examines both the socioeconomic causes and consequences of globalization, as well as how local peoples around the world have been affected by, participated in and resisted the forces of globalization.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, 107, or 111 with C or better; Credit is allowed for only ASB 378 or TCL 378
TCL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	410	Race, Medicine, and the Body	Explores how body and embodiment and race and ethnicity are constructed within and by biomedical sciences and technology development.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 45 hours; Credit is allowed for only SOC 410 or TCL 410
TCL	422	U.S.-Mexico Border Health	Focuses on identifying health issues affecting Latino/Mexican families in the U.S.-Mexico borderlands using basic epidemiological techniques to analyze regional data.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): TCL 321 with C or better
TCL	424	Theory & Pract of Comm Health	Foundations of methodology of community mapping and establishment of community diagnosis, media literacy and advocacy applications for community-based public health.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB	Prerequisite(s): TCL 321 with C or better
TCL	443	Politic Ecology of the Border	Examines the political ecology of the human-environment relationship in Mexico and on the U.S.-Mexican border. Through case studies, students learn about the most pressing environmental issues facing human populations and their communities on both sides of the U.S.-Mexican border and the various ways in which these issues are dealt with.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 463 or SOS 463 or TCL 443
TCL	444	Ethnography Mexico & BordrInds	Students learn basic principles of ethnographic research and obtain a better understanding of the social, ecological, cultural, political and economic processes affecting people in Mexico and in the U.S.-Mexico borderlands. Through case studies, students become aware of the variety of issues shaping the lives of those living in these regions. Focuses on contemporary issues such as migration, economy, gender, labor, health and the environment.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	SB & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only ASB 464 or TCL 444 or TCL 598 (The Ethnography of Mexico and the Borderlands) OR Visiting University Student
TCL	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
TCL	448	Tchng Chicana/o Studies in Sch	Approaches/techniques for infusion of transborder studies content into elementary and secondary curriculum; designed for teachers who work with Mexican and Latino origin students.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): minimum 45 hours
TCL	464	Latina/o Literature	Development of Latina/o literature. Study of genres and themes; attention to literary antecedents of the new U.S.-based Latina literature.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s) with C or better: ENG 101, 105, or 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, or 107; min 45 hours; Credit is allowed for only ENG 458 or FMS 464 or TCL 464 OR Visiting University Student
TCL	471	Latinos In Hollywood	Studies representations of Latinos in film; stereotyping, politics of metaphor, allegory, star discourse, self-representation, resistance, and independent film.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Credit is allowed for only FMS 471 or TCL 471
TCL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		
TCL	485	Chicana and Latina Writers	Critical reading of Mexican American women authors; emphasis on contemporary (post-1970) poetry, novels, short stories, and essays.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	(L or HU) & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student

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TCL	490	Tmsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latina/o artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL or WST 490
TCL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6		Prerequisite(s): Barrett Honors student
TCL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-6	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TCL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		
TCL	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-7		Prerequisite(s): Transborder Chicana/o and Latina/o Studies (Media and Expressive Culture or Transborder Community Development and Health or U.S. and Mexican Regional Immigration Policy and Economy) major; minimum 56 hours
TCL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	N	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-3		
TCL	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	205	Intro to Travel and Tourism	Provides an overview of tourism and its impacts on communities, cultures, economies and environmental systems.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	G	
TDM	225	Intro to Resort & Hotel Mgmt	Introduces local, national and international lodging and food service industries.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
TDM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
TDM	345	Meeting & Convention Planning	Basic aspects and skills in planning meetings and conventions. Industry and market overview of certified meeting planners.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better OR Visiting University Student
TDM	350	Tourism, Rec & Sports Mktg	Critical examination of marketing principles in leisure and related industries in diverse settings, including local, national, and international.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210, CSM 201 or TDM 205; ENG 102, 105 or 108 with C or better; MAT 142 or higher with C or better; minimum 45 hours; Credit is allowed for only CRD 350 or CSM 350 or PRM 350 or TDM 350 OR Visiting University Student
TDM	372	Tourism Planning	Applies economic and regional development concepts and theories to destination product development.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; MAT 142 or higher with C or better; TDM 205 with C or better; minimum 2.50 GPA; minimum 45 hours OR Visiting University Student
TDM	386	Convention Sales & Management	The role of convention and visitors bureaus or resort managers, including economic impacts of markets, structure, governance, membership, and advertising.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		
TDM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
TDM	401	Tourism Management	Basic principles of administration and their application in successful administrative situations. Analyzes administrative function, structure, and policies.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210 or TDM 210 with C or better; CRD 301 or PRM 301 or TDM 301 with C or better; PRM 303 or TDM 372 with C or better OR Visiting University Student
TDM	402	Assess&Eval Community Services	Introduces applied leisure research with emphasis on program evaluation, research design, data collection techniques, and data analysis.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): CRD 210 or PRM 210; Credit is allowed for only CRD 402 or CSM 402 or NLM 402 or PRM 402 or TDM 402 OR Visiting University Student

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TDM	415	Tourism Transportation Systems	Examines the role of various modes of transportation in domestic and international tourism development.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): TDM 205 or RTM 373 with C or better
TDM	448	Heritage and Cultural Tourism	Provides a solid conceptual understanding of the issues, problems, and management implications associated with heritage and cultural tourism.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): TDM 205 with C or better; Credit is allowed for only TDM 448 or CRD 598 (Heritage and Cultural Tourism) OR Visiting University Student
TDM	458	International Tourism	Global examination of international tourism and its significance as a vehicle for social and economic development.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3	G	
TDM	463	Senior Internship	Supervised guided experience in selected agencies.	N	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3-12		Prerequisite(s): CRD 403 or PRM 413 with C or better; Credit is allowed for only CRD 463 or CSM 463 or NLM 463 or PRM 463 or TDM 463
TDM	475	Entrepreneurial Rec & Tourism	Explores basic business principles and innovative processes involved in starting a small business in the commercial recreation and tourism industry.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only PRM 475 or TDM 475 OR Visiting University Student
TDM	480	Sustainable Tourism	Tourism has a multitude of impacts, both positive and negative, on people's lives and on the environment. Critically analyzes the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	LEC	N	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): PRM 120 or TDM 205 or minimum 60 hours OR Visiting University Student
TDM	481	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Defines sustainable development, explains the importance of sustainable food systems, recognizes the relationship between local food systems and global food challenges. Connects the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; defines leakage in reference to tourism and food. Creates and applies sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisite: Junior standing; Minimum 60 hours
TDM	482	Sustainable Revenue Management	Introduces the fundamental economic principles that underlie revenue management and the practical application of new analytical technological services in the hotel and resort industry. Uses experienced revenue managers from local resorts and hotels as regular guest speakers and IdeaS system (a revenue management analytics subsidiary of SAS).	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Pre-requisites: MAT 142 or higher; Minimum 72 hours
TDM	483	Sports Tourism	Examines the relationship between sports and tourism, and the role of recreation and amateur sports as an economic and community development strategy. Also considers the motives, behaviors and experiences of sport tourists; the impacts of sport tourism; and trends in sports tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only CSM 483 or PRM 483 or TDM 483 OR visiting University Student
TDM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		
TDM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6		Prerequisite(s): Barrett Honors student
TDM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-6	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TDM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		
TDM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TDM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-3		
TDM	520	Sustainable Thinking in TDM I	First in a series of two courses introducing students to the basic concepts of sustainability and their application and implications for tourism.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TDM	521	Sustainable Thinking in TDM II	Second in a series of two courses focusing on how to measure, assess, and plan for sustainability in the tourism industry.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): TDM 520 with C or better
TDM	530	Destination Planning I	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	531	Destination Planning II	Applies sustainable economic and regional development concepts and theories to destination planning and management. Students learn the fundamentals of sustainable planning, including stakeholder involvement and meeting community needs.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): TDM 530
TDM	540	Sustainable Food Management	Focuses on the fundamentals of sustainability, sustainable food systems, relationships between food and tourism, and the applications of sustainable food practices in different types of global tourism. Students learn to define sustainable development; explain the importance of sustainable food systems, recognize the relationship between local food systems and global food challenges; connect the challenges of creating and maintaining sustainable food systems with the needs of tourists and tourism destinations; define leakage in reference to tourism and food; and create and apply sustainability assessment criteria to food systems in a variety of different tourism spaces.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	550	Sustainable Tourism Bus Mgmt	Through case study analysis, students learn how sustainability impacts business operations, how successful sustainable businesses identify and assess alternative resource management techniques, and evaluate operational models for embedding sustainability practices into their business models.	N	LEC	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	561	Best Practices Preparation	First in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A destination or business is identified to be used as a case study.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Pre- or corequisite(s): TDM 521 with C or better
TDM	562	Best Practices Presentation	Second in a series of two courses investigating and sharing best practices in sustainable tourism. Provides an overview of best practices and innovative actions in tourism. A presentation of a best practices case study is conducted for the class.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Prerequisite(s): TDM 561 with C or better
TDM	570	Sustainable Tourism	Critically examines the environmental, economic, and socio-cultural aspects of tourism development, and strategies to attain balance among these three dimensions to guarantee its long-term sustainability.	N	SEM	N	GNA	Watts College of Public Service & Community Solution	School of Community Resources and Development	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Watts College of Public Service & Community Solution	School of Community Resources and Development	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TDM	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Community Resources and Development	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	101	Prof Ed: Student Experience	Introduces all new first-time Mary Lou Fulton Teachers College students to the unique elements, culture, challenges and opportunities of their university. Introduces future educators to the professional educator series and the themes that underpin the series, to include design-thinking, principled innovation, professional identity and legacy-minded thinking and actions.	N	SEM	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Mary Lou Fulton Teachers College freshmen OR Visiting University Student
TEL	102	Prof Ed: Community Contexts	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Includes a service-learning component addressing a community-identified concern.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): Teachers College student

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TEL	111	Exploration of Education	Education as an instrument in the development of the individual and society and its significance as an American Institution.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	171	Prof Ed Series: Equity in Educ	Analyzes educational issues that are limiting equitable education experiences for children, youth and adults in educational systems birth-college and proposes solutions to meet those needs.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	200	Social Embeddedness	Serves as a pathway toward self discovery and professional identity. Course readings, reflections and self assessments help students develop personal and professional goals and goal-setting strategies. Course assignments provide students with a greater level of understanding regarding the reciprocal influences among community and culture and the student's life experiences. Students have an opportunity to clearly define themselves and share topics they are passionate about, as well as locate how they might fit into and contribute to their community.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	201	Pro Ed: My Community Footprint	Explores the community context that impacts children and youths with specific focus on issues of diversity and social justice. Future educators enhance their knowledge, skills and attitudes of the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions.	Y	LEC	Y	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	202	Pro Ed: My Impact	Advances future educators' knowledge and skills as they apply the professional educator series themes of design-thinking, character and moral development, professional identity, and legacy-minded thinking and actions to become master learners and change agents for civic engagement and toward their personal and professional growth and fulfillment.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): Teachers College student
TEL	203	Planning/Implementing Instr	Prepares future educators to work with participants in a variety of learning environments and diverse contexts. Emphasizes innovative outcome-based and learner-centered approaches to planning and implementing instructional activities constructed using collaborative design-thinking.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		
TEL	208	Literacy in a Changing World	Examines literacy in the social context and the changing nature of literacy in the 21st century. Areas of inquiry include how students' cultural backgrounds and identities can serve as resources for literacy learning, linguistic diversity, media literacies, multi-modal literacies, and critical literacies. Explores issues of equity and social justice including the role of literacy to empower people into making positive changes in their lives and society.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU	
TEL	212	Understand/Culturally Diverse	Surveys cultural and linguistic diversity in American education, including education equity, pluralism, learning styles, and roles of schools in a multiethnic society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	HU & C	Credit is allowed for only MCE 230 or TEL 212 OR Visiting University Student
TEL	215	Intro to Child&Adolescent Dev	Emphasizes the cognitive, social-emotional, and physical domains of child and adolescent development. From a knowledge base of theory, research, and current issues, students apply learning to developmentally appropriate principles and practices that guide relationships and learning experiences for all children. Uses available technologies; emphasizes the complex ecosystem of culture, ethnicity, family, and school.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	
TEL	270	Prof Ed: Connect Rsrch to Prac	Assists students in shifting from a student perspective of education to a teacher perspective of education as they explore what it means to be a professional educator.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	271	Prof Ed: Inclusivity in Pract	Students continue shifting from a student perspective of education to a teacher perspective of education by connecting newly expanding knowledge with experiences in the field to assist them in preparing for a career as an educator with specific focus on inclusivity and supporting students with a range of learner assets, abilities and needs.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		
TEL	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	300	Community, Family & Education	Addresses education in a community and family context. Analyzes education and identifies education-focused community challenges in a broad variety of settings and across multiple times and places.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200 OR Visiting University Student

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TEL	310	Instructional Thought & Action	Compares and contrasts theories of learning as well as how to identify and apply instruction based on these theories to foster rich student learning. Addresses a diversity of learners and perspectives, in differentiated contexts, across all specific professional educator pathways. Teaches aspects of instructional design and planning as prospective educators design instruction to meet student needs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	311	Instrctn/Mgmt in Inclusive Cls	Planning and delivering instruction, organizing and managing classrooms, and making adaptations for English language learners and students with special needs.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	313	Technology Educational Setting	Focuses on using technology in an education setting and addresses the integration of technology in curricular areas for all students. Students receive a broad-based introduction to using and integrating technology into many different educational settings.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): General Studies CS course OR Visiting University Student
TEL	315	Child & Adolescent Development	Physical, cognitive, social, and emotional development during childhood and adolescence; developmentally appropriate principles and practices to facilitate development for all students.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3	L or SB	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
TEL	316	Teaching and Creativity	Engages students in critical thinking and the complex terrain of aesthetic theory and intellectual, academic work and teaching practice. Students apply aesthetic consciousness teaching by teachers developing imagination, creativity, and intuition as tools to use every day in their classrooms. Emphasis on how teachers can integrate the arts into the curriculum, use the arts to support academic content, and develop aesthetic consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. The arts will also be studied as multi-cultural and socio-cultural phenomena, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society. consciousness as a way of becoming attuned to the teaching environment as well as to learners' diverse cultures, talents, and needs. Also studies the arts as multicultural and sociocultural phenomena in support of these ends, aiding teachers to become consciously attuned to the culturally diverse learner within the larger society.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Pre-requisites: Education majors; Minimum junior standing
TEL	317	Inst Thgt Act: Learn Envi Mgmt	Develops and implements strategies and intervention for effective management of the classroom to promote the learning of students with and without disabilities. Creates plans for maintaining a positive, productive and culturally relevant classroom environment. Incorporates age-appropriate techniques addressing individual, social and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum junior standing OR Visiting University Student
TEL	318	Instr Thght & Actn: Assess Lrn	Prospective educators examine theories of assessments exploring why we assess, how we assess, and the ways assessments are interpreted in classroom settings. Emphasizes designing, selecting, implementing, and/or evaluating appropriate assessments specific to pathways and for students with diverse educational needs across all grade levels.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	320	Intro to Gifted Education	Overview of a variety of issues related to gifted students from preschool through high school. Provides background in order to create an optimal experience for students, parents and teachers when working with gifted students.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	331	Lang & Lit Methods K-8	Applies research-based strategies for delivering differentiated literacy instruction, assessment, intervention and remediation. Content focuses on autonomous (science of reading) and ideological (social practices of reading) models that incorporate culturally and linguistically responsive and sustaining practices for literacy. In addition, educators apply the elements of systematic phonics-based instruction and address the unique learning needs of students with dyslexia and other reading challenges.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	332	Disciplinary Literacy Methods	Prospective educators identify the specific literacy practices and challenges students face within their academic discipline and apply research-based instructional strategies for delivering differentiated instruction. Content focuses on instructional and assessment strategies in order to develop essential academic vocabulary, comprehension and critical thinking within each academic discipline.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours OR Visiting University Student

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TEL	340	Families, Communities&Cultures	Helps prospective educators develop an understanding of the role that families and communities play in schooling practices and the skills to cultivate culturally responsive practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	SB	Prerequisite(s): minimum junior standing OR Visiting University Student
TEL	370	Prof Ed: Building Prof Network	Engages prospective educators in collaborative experiences to examine their profession in relation to educational systems. Students develop skills and practices needed to work effectively as a professional educator. Emphasizes the importance of a well-developed professional network and student advocacy.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	371	Prof Ed: Educational Policies	Engages prospective educators in collaborative experiences to examine their profession in relation to educational policies. Exposes students to pressing educational issues with an emphasis on the importance of understanding the influence of policies, procedures and regulations as they relate to the education system.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student
TEL	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	400	Innovation in Ed Endeavors	Pursues innovative solutions to social problems with the courage and ability to impact change in individuals, communities and organizations. Reviews community problems, challenges or areas of improvement; learns underlying principles of social enterprise; and develops innovative methods that empower individuals and support educational initiatives.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300 OR Visiting University Student
TEL	404	Issues in Ed&Policy Reform US	Specialized topics related to current issues in education with a focus on education reform efforts from the late 20th century into the 21st century. Explores current reform efforts in education as part of the larger public policy agenda in the United States, analyzing how external influences shape present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Pre-reqs for TEL 404
TEL	405	History of Ed&Policy Reform US	Specialized topics in education history with a focus on education reform efforts from pre-Revolutionary War time to the end of the 20th century. Explores the past reform efforts in education as part of what was happening historically in the United States, analyzing how those efforts have shaped the present education systems.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 405 or TEL 494 (History of Education & Policy Reform in the US)
TEL	410	Leadership and Advocacy in Ed	Educators who take an active stance through advocacy and leadership are well-equipped to create societal change. Students learn about styles of leadership that are fitting for this need, study advocacy techniques, then position themselves as advocates and leaders as they create a plan, with goals, to address an identified community problem, challenge or area of improvement.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): TEL 200; TEL 300; TEL 400 OR Visiting University Student
TEL	420	Curri Strat for Gifted Learner	Overview of a variety of ways in which to create and adapt curriculum for gifted students from preschool through high school. Provides a broad range of resources for classroom teachers to use in order to help gifted students work to their full potential in a heterogeneously grouped classroom.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): admission to the Professional Program
TEL	430	Learning Outside of School	Studies and methods from a variety of nonschool environments for learning and development. Teaches knowledge and skills such as methods of identifying and evaluating free-choice learning that occurs through museum going, hobbies, family learning, media, community programs, sports, public health campaigns, and more. Covers career opportunities for educators in key creative environments besides classrooms.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 430 or TEL 494 (Learning Outside of School) OR Visiting University Student
TEL	431	Learning in Workplaces	School isn't the only place where people learn! Once you get a job, most of what you learn will occur as you do your job, and that kind of learning is crucial to the development of competence and expertise. Surprisingly, seventy to eighty percent of this important learning takes place outside of formal training. Studying learning in workplaces illuminates how learning happens universally, and helps teachers and trainers design effective educational programs.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 431 or TEL 494 (Learning in Workplaces) OR Visiting University Student
TEL	470	Prof Ed:Career Growth&Planning	Engages prospective educators in collaborative experiences to explore career paths within education, develop career plans, and consider routines for continuous professional growth. Exposes students to pressing educational issues with an emphasis on career planning, development and growth.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum 45 hours OR Visiting University Student

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TEL	471	Prof Ed: Principled Educator	Prepares prospective educators to examine their professional role as an advocate for themselves, their students and families, and their profession. Emphasizes the importance of understanding their professional influence as principled educators on educational practices and systems through advocacy efforts.	N	SEM	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): minimum junior standing OR Visiting University Student
TEL	489	Undergrad Projects & Research	Topics include history of educational research, literature reviews, research methodology, resources, individual project ideas and the creation of a research prospectus. Students may also work in teams to complete theses or projects if their interests intersect. Open to all students; however, Honors and Scholar's Academy students will be planning and/or implementing theses or creative projects.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TEL 489 or TEL 494 (Undergrad Projects & Research in ED)
TEL	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6		Prerequisite(s): Barrett Honors student
TEL	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TEL	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-4		
TEL	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-3		
TEL	501	Intro to Research/Eval in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only COE 501 or ECD 503 or PPE 501 or SPE 501 or TEL 501
TEL	502	Explr Ed: Child/Adolescent Dev	Provides a general pedagogical framework in the cognitive, social-emotional and physical domains of child and adolescent development and how to apply that knowledge to the learning programs for neurotypical and exceptional learners.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	504	Learning and Instruction	Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ECD 504 or TEL 504
TEL	505	American Educational Policy	Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	510	Instr Design Plan & Assessment	Covers learning theories, instructional design, planning and assessment. Students plan a developmentally appropriate instruction that differentiates instruction and experiences for all learners. Explores formal and informal assessments and how they can be used to identify learners' strengths and needs and accordingly adjust instruction.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	511	Research & Evaluation in Educ	Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research and foundation for future research.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	2		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	517	EquLrn Env: Decision & Action	Researches, develops and implements strategies and intervention for effective management of classroom behavior for students with and without disabilities. Creates plans for maintaining a positive, productive and culturally relevant classroom environment. Incorporates age-appropriate techniques addressing individual, social and academic competence.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	531	Instr Mth Language & Literacy	Apprentice teachers apply research-based strategies for delivering differentiated literacy instruction, assessment, intervention and remediation. Content focuses on autonomous (science of reading) and ideological (social practices of reading) models that incorporate culturally and linguistically responsive and sustaining practices for literacy. Also addresses phonics, the unique learning needs of students with dyslexia and other reading challenges.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TEL	532	Literacy Across Disciplines	Prospective educators identify the specific literacy practices and challenges students face within their academic discipline and apply research-based instructional strategies for delivering differentiated instruction. Content focuses on instructional and assessment strategies in order to develop essential academic vocabulary, comprehension and critical thinking within each academic discipline including face to face and digital learning environments.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	540	Cultvat Network Cultral Respon	Helps educators develop an understanding of the role that families and communities play in schooling practices and the skills to cultivate culturally responsive practices.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	570	Educator Scholar Community 1	Pre-service and apprentice teachers examine a relevant challenge in an educational context and support a K-12 learner with navigating complex challenges in classroom contexts. This is the first course in a three-part series.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	571	Educator Scholar Community 2	Pre-service and apprentice teachers engage in an applied experience with creative curricula by designing and implementing a creative learning activity for K-12 learners. This is the second course in a three-part series.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	572	Educator Scholar Community 3	Pre-service and apprentice teachers design and implement a legacy project in a K-12 classroom that requires learners to tackle an actionable challenge, take action, and make a positive difference by thinking and acting in new ways. This is the third course in a three-part series.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		
TEL	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	701	Action Research Quant Methods	Quantitative methods of inquiry for action research: data collection, analysis, interpretation, complementarity analysis, evaluation and data-informed decision making.	N	LEL	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 701 or TEL 701
TEL	702	Dynamic Contexts of Education	Explores current ethical issues influencing leadership decisions with a focus on real problems in the educational setting.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 702 or TEL 702
TEL	703	Innovation-Teaching&Learning	Development and psychological processes of human cognition, motivation, and performance applied to cognitively diverse, English language learners, adult professional development.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 703 or TEL 703
TEL	704	Leadership for Org Change	Develops understanding of dynamic and systemic nature of organizations, with emphasis on leadership for building organizational capacity and learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only EDA 704 or TEL 704
TEL	705	Systems Change and Leadership	Focuses on theoretical foundations of systems literature with a focus on education. Examines literature and scholarship that builds knowledge of educational theory on systems, and applies important related concepts to real-world problems of practice as they appear in students' current work context.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	706	Action Rsrch Doctoral Studies	Prepares doctoral students for success, focusing on communities of practice, the action research process, and investigating problems of practice.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	707	Reading the Research	Interprets and analyzes qualitative and quantitative research literature, as well as how to integrate information in professional scientific writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	708	Collab Apprch Data-Inf Dcn Mkg	Examines data-informed decision making in educational learning communities, by focusing on data collection, analysis and interpretation, as well as the impact of collaborative learning communities.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 708 or TEL 791 (Collab approaches data-informed decision-making)

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TEL	709	Dir Field-Bsd Study	Under the supervision of a faculty member and with the assistance of a mentor, students understand and develop their leadership, innovation and research skills. Provides an opportunity to (1) work with and learn from a leader outside students' normal spheres; (2) develop students' capacity to learn independently --to study, reflect, assess and expand their abilities as leaders, innovators and agents of change; and (3) extend and enrich student knowledge through reading and writing.	N	LEC	N	GNA	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 709 or TEL 792 (Directed Field Based Study)
TEL	710	Innov Disseminating Res	Provides graduate students with the opportunity to develop a post-degree impact plan related to the scholarship and innovations they developed through the EdD program. A post-degree impact plan enlists research and practices related to the idea of knowledge mobilization in order to optimize access to and engagement with scholarly insights and innovations. Enables students to develop strategies and resources to extend the reach and enhance the impact of their scholarship, innovations and resources among relevant stakeholder groups.	N	SEM	N	YGB	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	2		Prerequisite(s): Leadership and Innovation EdD student; Credit is allowed for only TEL 710 or TEL 791 (Innovations in Disseminating Research)
TEL	711	Strategies for Inquiry	Develops knowledge and skills for research and program evaluation that foster innovation in education that leads to improved student learning.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	712	Mixed Methods Action Research	Uses qualitative and quantitative inquiry methods in action research including concept and skill application, data collection, analysis and interpretation.	N	SEM	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student; TEL 703; TEL 705; TEL 706; TEL 707; TEL 711
TEL	713	Action Research Qual Methods	Qualitative methods situated in action research: history, design, data collection, analysis and interpretation.	N	LEC	N	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	3		Prerequisite(s): Leadership and Innovation EdD student
TEL	780	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	793	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	N	LEC	Y	OPT	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TEL	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Mary Lou Fulton Teachers College	Educational Leadership & Innovation, Division	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	100	Seminar in Entrepreneurship	Exposes students to careers in entrepreneurship by inviting diverse entrepreneurs to discuss their businesses and backgrounds and share their stories on starting and growing their ventures.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		
TEM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	200	My Technology Venture	Introduces the concept of entrepreneurship through venture practice and self-reflection to help students understand their potential roles in a technology-driven marketplace.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 110 with C or better OR Visiting University Student
TEM	230	Creativity/Business Innovation	Introduces concepts, models and techniques of creativity and innovation. Exposes processes related to developing creative skills and habits with an emphasis on problem solving and design.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only OMT 230 or TEM 230 OR Visiting University Student
TEM	250	Design Methodology	Outlines product design method and provides opportunity to apply it to a design project including identifying needs, setting target specifications, generating and selecting concepts, prototyping and testing.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
TEM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		

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TEM	300	Career Mgmt Entrepr & Innovtr	Career-focused seminar in preparation for students' post-graduation plans, including venture startup, job search or graduate school acceptance. Focuses on career relationship-building techniques, job-readiness skills and the development of a professional portfolio.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Prerequisite(s): minimum junior standing OR Visiting University Student
TEM	311	Opportunity Analysis	The key to making sound business decisions involves the careful analysis of the situation, intelligent use of research, and successful practice. Entails the research and implementation of strategy to determine consumer expectations utilizing the skills especially important in today's competitive and turbulent market.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): TMC 310 with C or better; Credit is allowed for only OMT 311 or TEM 311 OR Visiting University Student
TEM	330	Systems Innovation	Systems thinking course that investigates how innovators can incorporate the knowledge of complex systems into the processes of technology development, product/service innovation and venture development.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only OMT 330 or TEM 330 OR Visiting University Student
TEM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	400	Technology Entrepreneurship	Explores the fundamentals and principles of entrepreneurship suitable for both undergraduate business and technology students. Instructs students on the strategic path through entrepreneurship: ideation, validation, market selection, intellectual property, fundraising, launch and profitability. Also explores the impact and implications of technology. Through this course, students have the knowledge and skills to cultivate their ideas into businesses.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; ENT 305 or TEM 200 with C or better; Credit is allowed for only TEM 400 or TEM 598 (Technological Entrepreneurship) OR Visiting University Student
TEM	431	Innovation Management	Focuses on execution challenges that innovation initiatives face, including: (a) Resources: Where do the resources for innovation initiatives come from? (b) Organization: How should innovation initiatives be organized? (c) Planning: How should plans for innovation initiatives be written and through what kind of process should they be revised? Explores the processes of innovation management for various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 431 or TEM 431 OR Visiting University Student
TEM	450	Design for Developing World	Provides sustainable solutions to social problems that will improve the lives of residents in lower socio-economic communities through the integration of technology and social entrepreneurship.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): junior, senior, or graduate standing
TEM	455	Global Impact Entrepreneurship	Increases awareness and understanding of the complex nature of global poverty. Students think comprehensively about sustainable ways to address by focusing on business ventures and product design, which take advantage of local resources, networks and institutions. Students design and refine technologies and services that address the needs of communities in the developing world. Examines piloted technological innovations by ASU students in the west African nation of Ghana, India, and Latin American countries such as Mexico and Peru. Analyzes technological initiatives that have been piloted in Ghana and Peru, and attempts to create sustainable business ventures for them.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Business (Technology) BA major OR ENG 102, 105, or 108 with C or better; TMC 320 with C or better; minimum junior standing; Credit is allowed for only TEM 455 or TEM 598 (Global Impact Entrepreneurship) OR Visiting University Student
TEM	481	Consulting Project	Students learn about technology entrepreneurship through consulting with leaders and owners of businesses, not-for-profit organizations and government agencies. Requires both out-of-class consulting projects and in-class instructional sessions focused on technology entrepreneurship and business strategy, including financing, promoting, leading and growing the venture and consulting skills.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): senior standing; Pre- or corequisite(s): TMC 430 with C or better OR Applied Science (Operations Management) BAS major OR Visiting University Student
TEM	482	Startup Workshop	Students launch their own technology-related ventures with collaboration and mentorship from colleagues and faculty. This class centers on hands-on learning and is appropriate for beginning as well as maturing start-ups. Students build their entrepreneurial networks and engage with stakeholders related to their business (customers, industry partners and investors). Explores the tactical challenges that come with developing an enterprise and forms strategies and methodologies to advance the venture.	N	PRA	Y	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): FSE 301 with C or better; senior standing OR Visiting University Student
TEM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		

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TEM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6		Prerequisite(s): Barrett Honors student
TEM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TEM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TEM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-3		
TEM	530	Stats Bootcamp for Industry	Provides foundational coverage of topics such as probability theory, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, and simple linear regression analysis, appropriate for first-year graduate students. Additionally, provides a fundamental understanding of probability theory and statistics as used in typical industrial applications. Presents and discusses illustrative problems from technology, entrepreneurship, aviation and psychology. Where possible, explores problems from the student's discipline to insure that the principles of statistics and probability are studied in the context of the student's chosen field.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Pre-requisite: Degree- or Nondegree-seeking graduate; Credit is allowed for only TEM 530 or 598 (Statistics Bootcamp for Industry)
TEM	531	Disruptive Innov & Tech Evol	Focuses on the processes of innovation management of various sizes of companies utilizing smaller scale, local processes to large scale, globally dispersed innovation processes and teams, with an emphasis on disruptive innovation and the evolution and forecasting of technology. Provides a survey of innovation management concepts and various technological forecasting and prediction approaches, both mathematical and nonmathematical, in conjunction with a study of the evolution of selected technologies and the management problems associated with emerging technologies.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	532	Advanced Analysis of Systems	Introductory course in systems analysis and modeling. Develops basic competence in formulating and solving models of systems to aid decision making. Topics include: introduction to systems and systems modeling; a simple what-if analysis; overview and review of linear algebra and matrices; problem formulation and model development in optimization; linear programming (LP), economic interpretation and sensitivity analysis; introduction to integer programming (IP); special linear programs; project schedule network development and computations; overview of heuristic algorithms. Uses selected software in examples, short problems and in a project.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TEM	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	101	Principles of Global Mgmt	Provides the basic concepts of management with particular emphasis on the functions of management in a global environment. Examines the antecedents of globalization; the role of global environments in shaping organization structure, strategy and processes, as well as the basic principles of managing in complex cross-cultural settings. Emphasizes global institutional arrangements and macroeconomic issues. Serves as an introductory course that provides a quick snapshot of key issues facing global corporations today with each of the major themes explored more fully in the set of advanced courses that follow. Applies global business concepts in understanding global political economics, legal systems and socio-cultural environments.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	
TGM	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): maximum 25 hours OR Visiting University Student
TGM	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		

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TGM	200	Prins of Acctng/Global Orgs	Focuses on financial and managerial accounting and examines how outsiders evaluate businesses, nonprofits and governmental operations and how economic events are reflected in a firm's financial statements, including balance sheets and cash flow statements. Examines key accounting methods that impact a company's financial statements and how they are used by shareholders, creditors, employees and customers to make credit decisions and/or value a firm's equity securities.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student
TGM	204	Princip of Mrktng/Global Orgs	Explores the ways in which global marketing strategies reflect a deep understanding of markets and create valuable offerings for customers globally. Broadly speaking, marketing strategy making is comprised of segmentation, targeting and positioning. Segmentation is the process by which we segregate a relatively heterogeneous mass market into relatively homogeneous market segments. Targeting is the process by which we analyze opportunities and identify those customers where our business has the greatest prospects for success. Positioning is the process of assembling the "total offering" (product, service, distribution and price) and communicating the benefits of this "total offering" to the members of our target market. Challenges students to think critically about global competition. As such, rote learning of terms and concepts is not sufficient to prepare students to manage a business in global markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	268	Intercultural Comm/Global Mgmt	In a dynamic and interactive format, this course presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Examines theories of communication (the basic concepts, principles and skills vital for understanding and improving communication across racial, ethnic and cultural differences). Places students in experiential situations in order to develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world. Explores in depth intercultural theories from the TGM three regional areas--China, Latin America and the Middle East.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student
TGM	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	300	Princip of Finance/Global Orgs	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	310	Supply Chain Ops for Gbl Orgs	Studies the major elements of supply chain management. Students learn how to design an integrated supply chain and evaluate the fit with the business strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	312	Big Data in the Global Economy	Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important aspects of Big Data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereq(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student; Pre- or corequisite(s): ECN 221 or STP 226 with C or better if completed OR Visiting University Student
TGM	353	Regional Mgmt Environment	Provides future global managers with the analytical tools and frameworks for understanding the political, social, cultural and economic contexts within which business activities take place in various countries and regions throughout the world.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student

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TGM	391	Gbl. Bus. & Prof. Dev. Skills	Required for all continuing and transfer Thunderbird students that enhances critical thinking, communication, presentations and networking skills desired for success in upper-division TGM-specific classes as well as for international internships, study abroad and post-graduation work experiences.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): Thunderbird School of Global Management undergraduate student OR Visiting University Student
TGM	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	400	Advanced Topics/Global Mgmt	Focuses on advanced topics in global management designed to synthesize knowledge acquired from global business, language and cultural coursework.	N	LEC	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate student; minimum 60 hours
TGM	410	Data Structures and Algorithms	Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing, external sorting.	N	LEC	N	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prereqs w/min C: Comp Math Sci, Comp Sci, Comp Sys Egr, Data Sci, Dig Cult(Media Proc), Egr Mgt, Geo Info Sci or Informatics major; CSE 220 or 240; MAT 243 or 300 OR BMI/CEN/CS/Gbl Mgt Data Sci grad; Credit for CSE 310 or TGM 410 OR Visiting University Student
TGM	430	Intl Trade Reg Econ Agreements	Explores recent trends in global finance and trade and in regional trade agreements (GFTAREAs), especially as they appertain to national business environments and the global political economy. Also explores how globalization and regionalism impact business decision making and policy making at the national level and in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	460	Global Risk Assess & Mgt	Covers concept of regional and country risk as it affects foreign businesses and investors, and develops participants' abilities to identify, analyze and design management strategies for mitigating such risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	468	States and Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of opportunities in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3	SB & G	Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	478	Cross-Cultural Comm & Negotiat	This two-part course begins by focusing on cross-cultural communication with the ultimate purpose of helping improve global mindset. In the second part, focusing on cross-cultural negotiation helps students understand the theory and processes of global negotiation so that they can negotiate successfully in a variety of settings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student
TGM	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	487	Global Entrepreneurship	Deals with entrepreneurship and new venture creation that takes place in international and global settings. As such, it integrates many of the ideas, concepts and frameworks of international business and global management with those of traditional entrepreneurship. Starts at the firm level, looking at basic ideas of how entrepreneurs start and launch new ventures. It then expands to the industry level, looking at the role of business models in new venture creation, industry analysis, and scaling promising ideas. Focuses on the international and global levels, on topics such as cross-national comparative entrepreneurship, born-global new ventures, entrepreneurship in emerging and developing countries, and the global venture capital market. Also includes a number of special topics in global entrepreneurship, such as social entrepreneurship and family business. Finally, students have the opportunity to apply theory.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student

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TGM	489	Mlntnl Organizational Ldrshp	Explores multinational organizational management strategies, organizational practices/systems, and related managerial skills which are an essential part of global competitiveness. Develops skills to understand the application of analytical tools and frameworks, executes complex strategy, and builds and leads competitive teams and people.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management undergraduate major, Global Management certificate, or International Trade certificate student OR Visiting University Student
TGM	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): Barrett Honors student
TGM	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TGM	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-7	L	Prerequisite(s): ENG 101, 105, or 107 with C or better
TGM	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		
TGM	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	501	Global Accounting	Focuses on two aspects of accounting: financial and managerial accounting. Financial accounting is about how outsiders view and evaluate an organization such as a business, a not-for-profit entity or a governmental operation. It focuses on how economic events are reflected in a firm's financial statements including a balance sheet, an income statement and a statement of cash flows. It also focuses on how financial statement information is used by various stakeholders such as shareholders, creditors, employees and customers in making decisions with regard to the firm, including credit decisions and/or valuing a firm's equity securities. Analysis and equity management accounting involves providing information, both financial and non-financial, to management and employees to aid in planning, organizing activities, and monitoring and controlling business performance.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	502	Financi Mgt Gbl Value Creatn	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management; and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	503	Global Marketing	Provides a managerial orientation to the topic of global marketing in today's complex, rapidly changing international business environment. A key focus is developing competitive advantage by creating customer value. Course participants gain a fundamental understanding of marketing strategy and marketing analysis (i.e., customer, competitor and company analysis) as well as an appreciation of the basic strategic issues involved in market segmentation, market targeting and market positioning in the international arena. Also examines the major tactics/tools used by global marketers to facilitate the management of their international marketing plans (i.e., product development, pricing strategies, marketing communications, distribution management). Emphasizes developing skills for entering new markets and sustaining or growing current markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	504	Managing Org Gbl Perspective	Covers two key aspects of successfully managing an organization in a global environment. The first component covers the strategic direction of the organization, and the second component discusses how to harness the power of people in the organization to build teams and lead people to execute the strategy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	505	States & Markets	Global managers operate in an international economy that presents tremendous opportunities as well as risks. Globalization has dramatically expanded opportunities for international trade, investment and economic development. At the same time, global managers have to deal with the prospect of trade wars, international financial crises and intensified competition over markets and resources. In addition, international organizations such as the International Monetary Fund, World Trade Organization and World Bank Group have a direct impact on international business operations. Develops analytical tools for understanding the rapidly changing and dynamic global political. With these tools, managers are better prepared to anticipate the risks and take advantage of the opportunities they will encounter in the global economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	506	Communicating & Negotiating	This dynamic and interactive course provides managers with an effective framework for achieving their goals in global management settings. Assists students to prepare for and execute time-tested strategies for achieving communication competence with persons from different cultures. Also covers negotiating in the global context. Not only examines theories of culture and communications, but also places students in an experiential situation to gain valuable skills for overcoming obstacles in global management environments. Through use of cases, multicultural team exercises, student negotiation exercises and simulations, equips the global manager with tools to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	507	Gbl Organizational Consulting	Consulting course provides an overview of the field of consulting and the role of the management consultant. Familiarizes students with the tools and techniques used during a consulting engagement, including project entry, problem definition, intervention planning, data collection, problem solving, alternative generation, feedback, project exit, client relations skills and project management. Requires students to work in project teams to solve business problems in organizations through the application and expansion of technical skills acquired in other classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TAM 541 OR TGM 517; TGM 545; TGM 557
TGM	508	RBE I: Emerging Mkts	As an extension of states and markets in a global economy, provides an analysis of contextual factors that influence dynamic business environments by employing frameworks that integrate political, economic, geographic, and sociocultural factors in a specific regional area.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 505 or 515
TGM	509	RBE II: Developed Economies	Provides future global managers with the analytical tools and frameworks for understanding the developed markets business environment. Also provides a broad understanding of those economies in order to be successful therein. In order to succeed as managers in the environment, requires knowledge of political, social, cultural, economic, business and economic factors, both across the developed markets landscape and within individual countries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 505 or 515
TGM	510	Strat in Gbl Development	The nuances and challenges of development in the less-developed countries (LDCs) and in the transition economies of the world. Analyzes the economic, social, political, cultural and other challenges that LDCs and transition economies face, and the strategies they are employing in their quest for development.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	511	Global Financial Accounting	Accrual accounting concepts, teaching students how to prepare and understand the content of traditional financial statements. Topics include the recognition and measurement of accounting events; preparation and analysis of income statements, balance sheets and statements of cash flows; and the measurement of revenue, expenses, assets, liabilities and stockholders' equity, including both U.S. and international principles.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	512	Managerial DecisionMkngGiblEnv	Teach students how to use accounting information to help organizations succeed in a rapidly changing global environment. Introduce a variety of tools and techniques such as cost allocation, cost-volume-profit, relevant costing, performance evaluation, budgeting, transfer pricing, customer profitability analysis, nonfinancial performance evaluation, and/or sustainability reporting. By applying these tools and techniques to different types of global organizations, students learn how to use accounting information to make effective decisions. Throughout the course, emphasizes integrating other subject areas such as strategy, data analytics, entrepreneurship, corporate social responsibility, and/or behavioral economics into the decision analysis process.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 501, 511 or 517
TGM	515	Navigating Gbl & RBES	Globalization has dramatically expanded opportunities for international trade, investment and economic development, but potential trade disputes, international financial crises, political risks, international environmental regulations and ethical dilemmas in global business have also emerged. The first part of the course develops analytical tools for understanding the rapidly changing and dynamic global business environment, especially in the era of 4th Industrial Revolution. With these tools, managers are better prepared to manage risks and take advantage of opportunities in the global economy. The second part deals with the regional business environment. This part begins with a brief geographical, demographic and cultural overview of the region, and develops tools for analysis useful to assessing the business environment. While the emphasis is on a specific region, the same tools could be applied to any region of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	517	Gbl Acct & Fin Mgmt	Two-part course covering global accounting and global financial management. The first section covers financial accounting from a global perspective. Students have an opportunity to learn how to develop and use financial accounting information for external decision-making purposes. The second section equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	518	International Finance & Trade	Covers the two major areas of international economics: international trade and international finance. Offers a detailed look at the foreign exchange market, instruments and practices, as well as related theories and government policies. Also places a significant focus on the macroeconomy and its relationship to capital flows and economic relations with other countries. Also examines the flows of goods and services in international trade and the policies that relate to this trade.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	519	Global Financial Engineering	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	521	Mnging for Gbl Value Creation	Equips students with the tools necessary to make strategic financing and investment decisions for value creation in a competitive global environment. Topics addressed include financial analysis and projections; working capital management and investment management (derivation of cash flows, cost of capital, discounted cash flow valuation, and capital budgeting decisions).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	522	Global Financial Decisions	Covers modern practices of financial decision-making and management in a market-oriented multinational framework. Topics include financial technology, cryptocurrencies, capital structure decisions, risk management involving financial derivatives and currency hedging, cross-border investment decisions, subsidiary management, and cross-border merger and acquisitions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): Thunderbird School of Global Management graduate student; TGM 517 or 521
TGM	523	Global Investments	Surveys the investment management landscape and delivers the theory and technology attendant to intellectual and/or career pursuit in this domain. Topics explored include the domestic and international aspects of portfolio optimization; emerging markets and global asset allocation; security analysis and selection; stock sorting and screening algorithms; mutual fund performance decomposition and benchmarking; fixed income analytics and metrics; earnings quality; the franchise factor; distress prediction and credit scoring models; the behavioral finance salient; and financial derivatives from a portfolio management perspective, inter alia. A respectable floor of numeracy is advisable; a CFA® emphasis prevails.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	524	Valuation of the Private Firm	Provides a practical and theoretical understanding of the valuation of non-trading private enterprises. Basic theory, methodology and application of modern financial concepts as they relate to the valuation of these types of business organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	525	Gbl Fin/Forecast Pvt Firm	Focuses on finance concepts as applied in the real work by entrepreneurs. From the firm perspective, covers topics relevant to entrepreneurial finance, including financial statements, funding plans and venture capital. Prepares prospective general managers of entrepreneurial companies on how to make the financial decisions involved with building high-risk, high-growth new enterprises. Prepares business-minded students for careers focused on entrepreneurship and corporate entrepreneurship. Through the use of excel-based modeling, combined with lectures and readings from assigned sources, students understand aspects in finance that are critical to the entrepreneurial venture. Prepares students to deal with the various financing resources available to these same enterprises, including venture capitalists, angel investors, investment bankers and other financial stakeholders.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	526	Global Portfolio Management	Develops (1) an understanding of the pricing of derivative securities such as options, futures, forwards and swaps; (2) an understanding of derivative strategies, such as straddles, spreads, synthetics; (3) the ability to use these derivative assets and strategies to manage diverse sources of risk, including market risk, interest rate risk, foreign exchange risk and commodity price risk; (4) the ability to manage the interest rate and default risk in fixed-income securities (requires an understanding of duration, convexity, credit default swaps); (5) a broad understanding of the role played by hedge funds, arbitrage and liquidity in financial markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	527	Global Private Equity	Overview of the private equity industry globally, its role in economy, its participants, its operations and its recent development. Covers different phases of the private equity investment process and the players involved at each stage. Phases include: setting up a fund, selection and screening of investments, exploring valuation techniques, managing and exiting investments. Emphasizes the practical aspects of private equity transactions through case studies and interactions with private equity professionals. Recommended for students interested in private equity investing, investment management, investment banking, entrepreneurship and entrepreneurial finance. Does not require previous experience in private equity or financial skills beyond those taught in the finance core classes.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517

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TGM	528	Business Intelligence	Examines the role that business intelligence—the systematic collection, synthesis and analysis of information on the external operating environment—should play in strengthening corporate strategies and decision making. Through lectures and client-sponsored competitive assessment projects, the course has two goals: to help students understand this management tool and to train them to be able to utilize it for competitive advantage. Also addresses the related issues of corporate/industrial espionage and information security.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 545
TGM	529	Multinational Corp Fin (FORAD)	Applies the theories of managerial and international finance to the problems of multinational treasury management. Topics include issues and techniques in multinational funds transfers; identifying and measuring foreign exchange and interest rate risk; multinational tax planning; managing foreign exchange and interest rate risk; hedging instruments, including forward contracts, options and swaps; and financially engineered synthetics. Students also manage the financial functions of a computer-simulated multinational corporation, construct a biennial report summarizing their management results and present oral reports to a board of directors consisting of professors and invited business professionals.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517
TGM	530	Big Data in the Gbl Econ	Creating a sustainable IT-dependent competitive advantage is a major goal for forward-thinking multinational organizations. Understands how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. Covers the important technological aspects of big data from a managerial viewpoint. Delves into the understanding of global data and how this data must be standardized to account for differences in collection methods, legal constraints and cultural interpretation to create a reliable platform for evaluation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 557
TGM	531	Multinational Value Chain	Exposes students to the strategies and challenges associated with moving goods, services, information and associated payments across complex, globally dispersed value chains to end customers. Topics include value-chain structures, supplier partnerships, cross-cultural issues, technology, data networks, global logistics, risk management and value-chain mapping. A field project provides students with an opportunity to work in teams applying the course concepts to increase customer value in a real value chain.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	532	Leading Global Projects	Provides an overview of the global context of project leadership. Global project leaders work at the intersection of project management, leadership in a project context and cross-cultural effectiveness. Exposes students to key project leadership approaches including stakeholder management, methods for increasing inclusion on global project teams and building high-performing global project teams. Uses case studies, a simulation, several exercises and interactive discussions.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	536	Global Risk Assess&Mitigation	Firms of all kinds are attempting to improve their competitive positions by strategically managing the flow of services, raw materials, work-in-process inventories and finished goods on a global basis. Global managers must be concerned with the ever-increasing number of diverse risks to their businesses posed by political, social, physical and financial forces at work globally and in specific regions and countries. Centered on state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring, assessing and forecasting risk, and methods of mitigating risk.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	537	States, Business and Trade	Explores the political economy of trade and multinational trade agreements, especially as they pertain to national business environments and the global economy. Covers the domestic and international politics of trade, the formation and composition of multinational trade agreements, and the implications for national and multinational companies.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 505 or 515

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TGM	538	Corporate Partners	Experiential consulting practicum involving a highly visible, rapidly growing or start-up company or entity. Engages client in a specific activity such as strategic planning, opportunity assessment, policy or procedure redesign or competitive assessment. Requires the student team to integrate various skills encountered in Thunderbird's fundamental core courses to produce the desired deliverable. Students interact directly with the client during the semester to gain insights into the client's circumstances. The project results in complex deliverables and culminates in the presentation and recommendation to the client of suggested operational options or strategic directions.	N	PRA	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 517; TGM 545; TGM 557
TGM	540	ManagingPeople:GlobalPerspctv	Explores the mix of organizational practices and people that can be the basis of sustainable competitive advantage in the contemporary global business environment. Topics covered include cross-cultural issues in managing people, traditional and emerging models of organizations, organizational culture, leadership, employee skills and motivation, reward systems and change management.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	541	CompettveStrategyGlbPerspect	Focuses on choices that impact the performance of the entire organization. Examines central questions: Why are some industries and firms more profitable than others? How do firms create competitive advantage? How does the choice of strategy drive organizational performance? How do firms manage scarce resources in the pursuit of strategic objectives? How do firms create unique and sustainable industry positions?	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	545	Global Leadership & Strategy	Creating value in modern organizations comprises the strategy that the organization deploys and the way in which its leaders execute the strategy to achieve superior economic returns. Thus, this course covers two distinct but interconnected domains dealing with competitive strategy and leadership. The strategy segment focuses on how organizations choose their strategic position, build sources of competitive advantage, and design their value proposition and business models. The leadership segment illustrates the integral role that leaders play in helping an organization realize its strategic potential and focus on what it means to compete through people in a way that produces positive results for individuals, teams and organizations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	546	Regional Industrial Analysis	Builds on concepts introduced in competitive strategy, global strategy and regional business environment. Focuses on the analysis of the strategies adopted by competing players and their impact on the global strategies pursued by the parent organization in the context of regional industry dynamics. Covers a spectrum of topics ranging from industry cluster formation, country-specific advantage, industry versus industry ecosystem analysis, the government's role in industry and regional development including national innovation systems, demand and supply chains in regions, and emerging market challengers. Applies multiple decision-making tools and frameworks to understand the Information and Communications Technology (ICT) industry in Asia Pacific—the fastest growing region in the world. Tools and frameworks learned in this course are applicable to other regions and other industries.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 545
TGM	547	LeadngChg&Transfrmtn GlobalEnv	Increases understanding of the nature of organizational change (through conceptual frameworks, readings and discussions). Specifies skills needed for managing change. Enhances sensitivity to the contribution and consequences of the human element as related to change. Helps student's own capacity to "thrive on change."	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545
TGM	548	Global Strategy	Focuses on how global firms create value. Covers topics ranging from country-specific competitive advantage and the notion of distance to alternative global strategy archetypes and sources of competitive advantage for emerging market multinationals. The approach applies multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 545

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TGM	549	Global Leadership	Explores the concept of effective leadership within and across a variety of organizations and global contexts. Definitions of "leadership" and strategies for becoming an accomplished leader abound. Rather than attempt to narrowly focus our attention on definitions, leadership styles, and supposedly "definitive" theories of leadership, focuses on the demands of and competencies associated with excellent leadership. Most importantly, examines how leaders sense the need for and then manage organizational change. Given the increasingly complex world we live in and the ongoing and rapid rate of change, change management has become one of the most critical of leadership skills.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	551	Global Marketing Strategy	Covers the major concepts involved in creating and sustaining customer value, analyzing the firm's macro environment, choosing whether or not to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	552	Global Marketing Management	Covers the functional aspects of marketing including decisions relating to segmentation, targeting, branding, product development, pricing, distribution and advertising/promotion. Students integrate their knowledge of these topics through the creation of an international marketing plan based on a product or service and in a country approved by the instructor.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 557
TGM	553	Gbl Customer Decision Making	Both theoretical and applied, the backbone and foundation of the course draws heavily from behavioral economics, consumer psychology and consumer information processing. Equips students with a comprehensive understanding of how and why consumers make decisions the way they do in the market (B2C). Although consumers desire to make rational decisions that maximize their utility, in reality, more often than not, they tend to make irrational and suboptimal choices. Offers why such phenomena occur and how consumers can improve their quality of decision making. Offers a richer appreciation of the heuristics and decision-making rules that consumers use and biases that affect consumer decision making.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	554	Global Marketing Research	Focuses on the use of marketing research techniques for competitive advantage in a global business context. Develops the necessary skills to plan a research project, collect data, analyze the data and report findings.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	555	Gbl Product and Pricing Dev	Combines global product development (GPD) and global pricing (GP). GPD examines how an organization can identify, develop and manage products for global markets. Pays special attention to issues such as the product development cycle, innovation charter, barriers to product development and effectively organizing for product development. GP provides in-depth knowledge of the field of global pricing, covering the psychology, economics and tactics of pricing for a business enterprise, product or service. Better pricing knowledge usually converts to better bottom-line results. Students learn pricing theory and tactics as well as develop hands-on pricing skills, all aimed at improving profitability. These skills can be applied across the full range of professional contexts--as entrepreneurs, brand managers, business unit managers, management and M&A consultants.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557

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TGM	556	Gbl Strat Services Mkt	Services have come to dominate our economy. Yet there remains a naïve belief that services marketing and management is a simple adaptation of goods marketing and management. Unlike physical goods, services are co-produced with customers at a time, and in a place, of the customer's choosing. This co-production directly involves an organization's front-line employees. As a result, it is more difficult for services to be inventoried and checked for quality assurance. Provides a thorough understanding of the management and continuous improvement of service operations, including a thorough understanding of the role of customers in service operations such that service firms can design effective service experience so as to minimize service failure. Provides students with an end-to-end hands-on customer experience management (e.g., customer satisfaction and loyalty), project that involves survey design, customer experience model development, data collection, data analysis, and recommendations.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	557	Global Marketing&Data Analytics	Global companies are embracing digital technologies to better understand their customers' journey and subsequent word-of-mouth discussions consumers have about their product online. This course is about understanding how multinational organizations make strategic use of Big Data to gain a competitive advantage in the global economy. It delves into the understanding of global data, choosing whether to enter a foreign market, how to evaluate different foreign markets, the best methods for entering different markets, the market research design process, understanding consumer and B2B customer behavior, and ethical issues encountered in global marketing.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	558	Gbl Data Analysis Strat Mkt	Provides an understanding of the key marketing issues through an examination of various marketing decisions. Course complements other marketing courses by adopting a more hands-on and practical approach to strategic market planning. A combination of lectures and discussions, analyses of cases, software demonstrations, and a simulation game facilitate understanding of the material. Requires a solid understanding of marketing planning, statistics and quantitative methods.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	559	GBL Brand Management	Provides a managerial orientation to the topic of global brand management. Prepares participants for a career either in the role of the "traditional brand manager" or in the role of a "manager with brand-related responsibilities." A major portion of the course is working on a global brand field project to develop a brand management/marketing plan for a brand and brand challenge of student (and team) choosing. Emphasizes the ethical dimension of global brand management; focuses on an individual brand ethics project.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 557
TGM	572	Gbl Import Export Mgt	Requires understanding theoretic, strategic, finance and practical business principles complicated by the differences in business practices, culture, laws and currency regulations of multiple countries and regions. Focuses on important pragmatic aspects of selling and acquiring goods and services to and from trading partners in foreign markets. Today's global marketplace, while dynamic with opportunity, contains rapidly changing physical, fiscal, technological and regulatory considerations for those who manage such activities. Important concepts to be learned include establishing strategic direction, identifying and managing a multitude of risks, protecting company assets, lowering the cost of finance, building winning business relationships and profitably expanding business into new markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	573	Country Risk Management	Global managers must be concerned with potential risks to their businesses posed by political, social and financial forces at work globally and in specific regions and countries. This course centers around state-of-the-art assessment models used by businesses and foreign investors. Issues include methods of measuring and forecasting risk and mitigating risk. Recommended for students interested in business risk forecasting as a function in and of itself, and in operations, marketing, and any arena in which business investors must be able to anticipate and manage risks.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	575	Global Affairs	Examines major theories and concepts in global affairs including different schools of international relations thought and levels-of-analysis determinants of foreign policy. These theories and concepts provide key insights on contemporary global affairs issues, and are applied to real-world events and case studies. Covers the role of political economy in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	576	Global Affairs Methods	Covers research methodologies and analytical techniques used to investigate global issues. Topics include research design, quantitative methods, qualitative methods, policy analysis and database resources. These tools are used in government, in intergovernmental organizations, in nongovernmental organizations, and in the private sector. They are applied to key issues in global affairs such as democratization and human rights, income inequality and development, political violence and international security, and political risks to foreign investors.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	577	International Organizations	Examines the role of international organizations in global affairs particularly in the areas of international peace, security, humanitarian and environmental issues. Focuses on intergovernmental organizations such as the United Nations and International Criminal Court as well as regional organizations such as the North Atlantic Treaty Organization and the African Union. Also focuses on international nongovernmental organizations such as Amnesty International and International Red Cross. Examines the impact of as well as the constraints on international organizations in real-world events and case studies. Covers major economic intergovernmental organizations in the separate course on states and markets in the global political economy.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): TGM 515
TGM	579	Communicating Global Context	In a dynamic and interactive format, presents a framework of models and skills for building communication performance in competitive global business settings. Assists in implementing strategies for mastering interpersonal encounters, including conflict resolution, in multicultural environments. Not only examines theories of communication, but places students in experiential situations in which they develop valuable global management skills. Using cases, self-assessment questionnaires, multicultural team exercises and simulations, equips the global manager with the ability to solve problems and take advantage of opportunities in a multicultural world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-2		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	581	Negotiating in Global Context	Provide students with knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	2-3		Prerequisite(s): TGM 506
TGM	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		

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TGM	585	Corp Social Resp Gbl Context	Provides knowledge, skills, insights and experience necessary to be a competent negotiator. Covers theories of cross-cultural negotiation and how these impact business interactions. Students gain insight into personal and cultural underpinnings that influences cognitive, affective and negotiation behavioral processes. Expands skills in achieving communication and negotiating competence through the understanding and practice of increased appropriateness, flexibility and adaptability. Corporate Social Responsibility (CSR) has become essential for corporations seeking to succeed in an intensely competitive global economy. Provides an in-depth understanding of what CSR is, how to apply it effectively in an international context and how to manage it well. Using a case-based approach, focuses on actual experiences of corporations that have used CSR strategies successfully—and unsuccessfully—to draw practical lessons for international managers. Incorporates several guest lectures from executives who share their firsthand experiences with CSR in various regions of the world.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-3		Prerequisite(s): TGM 586
TGM	586	Gbl Entrepr & Sus Bus	Presents an overview of entrepreneurship and sustainable business. Involves acquiring a basic understanding of both the global entrepreneurship space and the sustainable business space. Students become familiar with the definitions applicable to these two topics, the basic place and role of these two domains in the global economy, and the significance of the two domains in the creation of jobs and sustainable economic activity.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TGM	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic or writing a literature review of a topic.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report or publication. Assignments might include data collection, experimental work, data analysis or preparation of a manuscript.	Y	RSC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded and no grade is assigned.	Y	RSC	Y	Z3	Thunderbird School of Global Management	Thunderbird School of Global Management	1		
TGM	596	Thunderbird Experiential Pract	Capstone course offering students an opportunity to apply the full range of professional skills they have acquired during graduate business and management studies. Consists of participation in a consulting project for a client system in an emerging market country, including Central America, Latin America, the Middle East, Africa, central and eastern Europe, and the whole of Asia apart from Hong Kong, Japan, Singapore, Australia and New Zealand. Serves all sectors: public/governmental, private and NGO/nonprofit.	Y	PRA	Y	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1-6		Prerequisite(s): TGM 506; TGM 517; TGM 545; TGM 557
TGM	597	Thunderbird PLD	Capstone course designed to equip students with the skills to transition from students to global managers in the 4th industrial revolution. Students create and continuously update their Career Development Plan. This plan requires them to research career options, commit to a career focus, devise a strategy, implement a networking plan, create career documents such as resumes and cover letter, prepare for interviews. Students also create their own Personal Leadership Development plan.	N	LEL	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	1		Prerequisite(s): degree- or nondegree-seeking graduate student

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TGM	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	Thunderbird School of Global Management	Thunderbird School of Global Management	1-4		
TGM	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Thunderbird School of Global Management	Thunderbird School of Global Management	1-12		
TGM	601	Megatrends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. The lead professor for this Phoenix-based course partners with faculty from ASU colleges including the Ira A. Fulton Schools of Engineering, the Walter Cronkite School of Journalism and Mass Communication, the School of Public Affairs, and the Sandra Day O'Connor College of Law (and possibly other ASU schools or units). Representative topics span from crisis management in an era of hypercompetition and mass communications to the global legal implications of digitalization (e.g., Industry 4.0) and the emerging role of NGOs in partnering with private companies to seek shared value and sustainability.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	602	Sustainable Futures	Provides broad exposure to emerging and future transdisciplinary environmental drivers and their influences on business, nonprofit organizations and governments. Focuses on four interwoven themes. First, how do global firms create, experience and leverage shared value creation to drive innovation and growth. Second, exploration and application of contemporary models for mapping and understanding today's complex, dynamic systems, ecosystem development and cluster formation. Third, by delving into the function of multilateral agencies such as the WTO, WHO, UNHRC, UNCTAD and WBCSD in shaping and driving environmental influence on organizations, and understanding the public policy value chain. And, fourth, unbundling the impact of environment on innovation and growth success drivers in "next generation" manufacturing industries such as pharmaceuticals or precision engineering; on service industries such as banking or nonprofit organizations; on governments; and on NGOs.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	603	Shaping Markets	Provides broad exposure to emerging and future transdisciplinary drivers and their influences. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. Integrative approach that seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	604	Capturing Digital Dividends	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to innovation, technology and creativity. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from understanding technology trends and their drivers to structuring for innovation and creativity success, and the leader's role and relevant skillset therein. From input to process to output, this module provides access to leading-edge best practices for seeing what others miss (successfully finding and developing valuable innovation), effectively assessing, prototyping, and validating, and winning adoption for new ideas and insights (and fostering these skills in others).	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student

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TGM	605	Delivering Results I	Provides broad exposure to emerging and future transdisciplinary drivers and their influences on strategy formation in global organizations. Primarily focuses on how global firms create value and thus covers a spectrum of topics ranging from country-specific competitive advantage and the notion of distance, to alternative global strategy archetypes, and sources of competitive advantage for emerging market multinationals. The approach will be integrative in that it seeks to apply multiple decision-making tools and frameworks to untangle the complexities of managing in a global corporation. Anchors the experiential segment of the course module in an emerging market setting to provide students a hands-on view of the dynamics shaping the growth markets of today and tomorrow.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
TGM	606	Delivering Results II	Provides broad exposure to emerging and future transdisciplinary drivers and their influences with respect to execution of strategy on global and local levels. The lead professor for this module partners with thought and practice leaders from Thunderbird/ASU colleges and beyond. Representative topics span from implementing global strategy, evaluating and responding to regional dynamics in fast expanding markets, bridging potential headquarter and field chasms, and executing in peak dynamism. This module provides access to leading-edge best practices for implementing strategy in fast expanding, emerging markets.	N	LEC	N	GNA	Thunderbird School of Global Management	Thunderbird School of Global Management	5		Prerequisite(s): Thunderbird School of Global Management graduate student
THE	100	Introduction to Theatre	Surveys theatre production from the Greeks to contemporary theatre.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): non-Theatre and non-Film students only
THE	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	320	History of the Theatre I	Centers on the historiography of world theatre as art, as a medium of cultural expression and as a social institution. Involves, along with the reading of plays, advanced methodological approaches to studying the creation of theatre within cultural and political contexts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre or Performance and Movement BA major; THF 220 OR New College student; junior or senior standing OR Visiting University Student
THE	321	History of the Theatre II	Traces major developments in theatre production from the 17th century to modern times.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): Theatre BA major; THF 220 with C or better OR New College student; minimum junior standing
THE	322	Theatre History and Culture	Critically examines major developments in theatre history, historiography, and dramatic literature.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & H	Prerequisite(s): non-Theatre majors OR Visiting University Student
THE	325	Play Reading/Education Theatre	Assigned independent readings in plays for secondary school play production.	N	RSC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Theatre student OR Visiting University Student
THE	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	406	American Multicultural Film	Examines Native, African, Asian, and Latina and Latino American films and film artists in cinema history and production.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
THE	420	Theatre in America	Examines the major movements and pivotal moments in the history of American theatre from the 1700s to its current state, particularly its efforts to establish an identity that reflects the unique and changing citizenry of the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum 40 hours. Credit is allowed for only AMS 420 or IAP 420 or THE 420
THE	421	Shakespeare: Stage and Film	Examines Shakespeare's plays as written texts, stage performances, and film productions. Focuses on play reading, performance analysis, and film critique. Online course.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105, or 108 with C or better OR Visiting University Student
THE	422	Latinx Theatre and Film	Explores issues of cultural identity through critical analysis of theatre and film by Latinx artists in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU & C	Pre-requisites: ENG 102, 105 or 108 with C or better OR Theatre Masters students
THE	423	African American Theatre	Readings, discussion, video of the history and dramatic literature of African American playwrights and theatre companies in the United States.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters student
THE	425	Chekhov and Russian Drama	An in-depth study of Chekhov's major works, representative short stories and major plays, including "The Cherry Orchard" and "Three Sisters". Taught in English.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): ENG 102, 105 or 108 with C or better; Credit is allowed for only RUS or THE 425
THE	426	Pre-Columbia Thtre of Americas	Selected studies in pre-Columbian theatre forms and texts of the Aztecs, Mayans, Caribbean islands, and North American Indians.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 102, 105 or 108 with C or better, or Masters Theatre student

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THE	429	Studies European Lit/Culture	Literary, cultural, and historical issues.	N	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G & H	Prerequisite(s) with C or better: ENG 101, 105, 107; ENG 200; one ENG 200- or 300-level literature course OR ENG 101, 105, 107; min 45 hours; Credit is allowed for only CEL 429 or ENG 429 or REL 429 or SLC 429 or THE 429 OR Visiting University Student
THE	430	History of Fashion I	Fashion is rarely set but rather evolves with eras of upheaval between one generation and the next. Clothes express the personality and rank of the individual creating an instantaneous and lasting impression. Introduces over 400 years of Western fashion history drawing parallels between the fashion and the period in which it existed.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): minimum sophomore standing OR Visiting University Student
THE	431	History of Fashion II	A century of fashion history, drawing parallels between the fashion and the period in which it existed.	N	LEC	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only THE 431 or THE 494 (History of Fashion II)
THE	440	Experimental Theatre & Perform	An inquiry into avant-garde and experimental theatre/performance from the 19th century to the present.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): Theatre undergraduate student; ENG 101, 105, or 107 with C or better; THE 320 or 321 with C or better; THF 220 with C or better OR Visiting University Student
THE	475	Latin American Film	Examines the role of film in contemporary Latin American culture; films viewed and analyzed as casebook examples. Focuses on the aesthetics and generic conventions of contemporary Latin American films.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	(L or HU) & G	Prerequisite(s): ENG 102, 105, 108, FMS 100, or SLC 202 with C or better; Credit is allowed for only FMS 475 or SLC 475 or SPA 475 or THE 475 or FMS 494/SLC 494/SPA 494/THE 494 (Latin American Film) OR Visiting University Student
THE	480	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): minimum junior standing; Credit is allowed for only THE 480 or THE 581
THE	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Pre-requisites: Barrett Honors Theatre or Film student
THE	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6	L	Prerequisite(s): Barrett Honors Theatre or Film student; ENG 101, 105 or 107 with C or better
THE	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THE	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THE	500	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): graduate School of Film, Dance and Theatre major
THE	504	Studies/DramaticThry/Criticism	Surveys dramatic theory, criticism, and aesthetics as they relate to contemporary performance.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THE	505	Critical Theory & Performance	Surveys contemporary theories of culture as they apply to theatre and performance studies.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre graduate student
THE	510	Studies in Literature	Assigned individual reading program in standard sources and masterpieces in theatre literature. May be repeated for credit.	N	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): degree- or nondegree-seeking graduate student
THE	520	Theatre History and Literature	Surveys historiographical issues and dramatic literature related to key periods in theatre history.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THE	524	Adv Studies/Theatre for Youth	In-depth study of the history, literature, and contemporary practice of theatre for young audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Theatre Education or Theatre for Youth student
THE	525	Adv Studies/Theatre Youth II	Project-oriented explorations of theory and practice of contemporary theatre for youth audiences.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THE 524 with B or better
THE	562	Dramaturgy Workshop	Advanced dramaturgical technique for the contemporary theatre, including trends in new play development, festivals and productions throughout the United States. Participation in Arizona Playwriting Competition.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 560 with B or better
THE	581	Methods of Teaching Theatre	Applies materials, techniques and theories for theatre with students, grades 6 through 12. Emphasizes curriculum development and praxis.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THE 480 or THE 581

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THE	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
THE	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Art Theatre student
THE	600	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THE	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THE	700	Research Methods	Course on research methods in a specific discipline.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisite: Must be a Theatre Education or Theatre for Youth student or have instructor approval.
THE	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre student
THE	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THE	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-15		
THF	101	Acting Introduction	Introduces basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): non-Theatre student OR Visiting University Student
THF	125	Orientation Film/Dance/Theatre	Orientation to university and school resources and procedures. Academic success strategies, mentorship, goal setting. Community-building exercises.	N	REC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prereq(s): Film (Film & Media Prod) BA, Film (Filmmaking Practices) BA, Film and Media Prod BFA, Perform & Movement BA, Theatre (Acting) BA, Theatre (Design & Prod) BA, or Theatre (Theatre Expl) BA major; freshman standing OR Visiting University Student
THF	126	Communication & Collaboration	Foundational course brings together students in several collaborative art forms to create original works and build community within the Herberger Institute. Provides introductions to the creative process and several key creative career skills: effective communication, conflict resolution, project management, building mentoring relationships, and creating equitable and inclusive project teams.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Herberger Institute for Design and the Arts student OR Visiting University Student

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THF	160	Introduction to Storytelling	Introduces the nature, structure, and operations of story, as well as the functions of narrative in societies and cultures. Several modules introduce a different mode of storytelling. Students learn to create their own stories utilizing several of the approaches introduced in the modules.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Film BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major OR Visiting University Student
THF	215	Design and Composition	Introduces the aesthetic principles and practices employed by designers/artists of the stage and screen, including: basic knowledge of the elements and principles of design; conceptualization of design for theatre and film; director/designer collaboration models; methods and modes of visual communication for theatre and film (storyboards, renderings, models, etc.).	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	HU	Prerequisite(s): Digital Culture (Theatre) BA, BA in The Arts (Entertainment Design), BA in The Arts (Fashion Design) major, Sidney Poitier New American Film School major, or School of Music, Dance and Theatre major OR Visiting University Student
THF	220	Principles/Dramatic Analysis	Analysis, evaluation and interpretation of dramatic literature for theatrical and cinematic production. Emphasizes the traditional canon of dramatic literature, the language of narrative film, and traditional structures and forms of drama for stages and screens.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L or HU	Prerequisite(s): Sidney Poitier New American Film School major or School of Music, Dance and Theatre major; ENG 101, 105, or 107 with C or better; Pre- or corequisite(s): THF 126 with C or better if completed OR Visiting University Student
THF	370	Seminar: Acting Concentration	Designed for a student's continued growth as a preprofessional acting student. Provides a series of master workshops focused on craft. In addition, under the guidance of the faculty facilitator, students receive career guidance and information to strengthen connections to the institute, the school and the university.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): admitted to Theatre (Acting) BA concentration; Credit is allowed for only THF 370 or THP 394 (Acting Concentration Seminar) OR Visiting University Student
THF	397	Prof Development Seminar	Preparatory course for senior projects. Students research and create senior project proposals while formalizing faculty mentorships.	Y	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Prerequisite(s): Film BA or Performance and Movement BA or Theatre BA major; minimum 56 hours OR Visiting University Student
THF	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THF	497	Senior Project	Mentored practicum for culminating capstone projects.	Y	PRA	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-6		Prerequisite(s): Film BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major; FMP 385, FMP 398, or THF 397 with C or better; minimum 56 hours
THF	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	102	Acting I: Fundamentals	Explores and applies basic principles of acting. Topics include terminology, scene and character analysis, exercises and improvisation, audition preparation.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Performance (Music Theatre) BM major or Performance and Movement BA major or Theatre BA major OR Visiting University Student
THP	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	201	Theatre Production Crew	Participation in university mainstage theatre production backstage and board operations.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		
THP	202	Acting II: Meisner Technique	American theatre technique based on improvisation and emotional truth. Rehearsal techniques and application of action to dramatic text.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THP 272 with C or better; THP 277 with C or better; Pre- or corequisite(s): THF 220 with C or better if completed
THP	212	Puppetry with Children	Construction and manipulation of puppets; practice in performance skills. Emphasizes educational and recreational uses of puppetry by and with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		
THP	213	Intro to Technical Theatre	Procedures of technical theatre production and demonstration. Topics include design and construction of scenery, lighting, and properties.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): BA in The Arts, Digital Culture (Theatre) BA, Film and Media Production BFA, Performance and Movement BA, or Theatre BA major OR Visiting University Student
THP	214	Introduction to Costuming	Basic principles of costume design, construction, and survey of selected historical periods including makeup styles. Costume design project and production experience.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	4		Prerequisite(s): BA in The Arts, Digital Culture (Theatre) BA, Film and Media Production BFA, Performance and Movement BA, Theatre BA, Theatre (Acting) BA, or Theatre (Design & Production) BA major OR Visiting University Student

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THP	218	Introduction to Directing	Overview of emergence and practice of the director's craft. Explores director's role and responsibilities, play selection, conceptualizing, ground plans, blocking.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Film and Media Production BFA, Theatre BA, Theatre (Acting) BA, or Theatre (Design & Production) BA, or Theatre (Exploratory) major; THF 220 with C or better; THP 102 with C or better OR Visiting University Student
THP	251	Student Production Board I	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for acting, directing, design and technology.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	260	Introduction to Playwriting	Basic skills of playwriting including exercises in monologues, scenes, and conflict and resolution, leading to completion of a one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
THP	272	Introduction to Stage Movement	Movement vocabulary and physical training in relaxation, alignment, conditioning, and stage presence. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	277	Acting: Intro to Voice	Exercises and techniques to free the voice and improve quality and projection. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	301	Theatre Production	Participation in university mainstage theatre productions (e.g., acting, construction, stage management).	Y	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 213 or 214 with C or better OR Visiting University Student
THP	302	Acting III: Adv Techniques	Advanced practice in methods, skills, and research for rehearsal and performance.	Y	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with C or better; THF 220 with C or better; THP 202 with C or better; THP 272 with C or better; THP 277 with C or better; minimum junior standing
THP	307	Acting: Ten-Minute Plays	Acting in theatre projects, productions, or collaborative performances in directing classes.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisite(s): THF 101 or THP 102 with C or better OR Visiting University Student
THP	311	Creative Drama with Youth	Theories, materials, and techniques for facilitating improvisational drama with children and youth in classroom and community settings.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better; minimum 25 hours OR Visiting University Student
THP	317	Stage Management	Readings in stage management and participation as a stage manager in a university theatre production.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre undergraduate or The Arts BA major OR Visiting University Student
THP	318	Intermediate Directing	Explores approaches to staging and composition. Studio work culminates in presentation of a fully rehearsed ten-minute play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 218 with C or better; THP 213 or THP 214 with C or better
THP	330	Costume Design	Explores the elements of design, taking abstract ideas and formulating them into concrete forms. Encourages the student to experiment with different ideas and mediums. Emphasizes design basics, research, figure drawing, and beginning rendering techniques. Uses projects that involve complex script and character analysis to promote the student's ability to effectively communicate.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better
THP	331	Costume Construction	Uses of materials and techniques for stage costumes with actual construction of period apparel. May be repeated for credit.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 214 with C or better
THP	332	Makeup	Practical guide to the theory and practice of theatrical makeup. Basic principles of stage makeup design and application. Develops and increases skills in the application and design of the medium through a combination of reading assignments, lecture, demonstration and supervised practice sessions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre (Design and Production) major or minimum 45 hours; Credit is allowed for only THP 332 or 494 (Makeup/Advanced Makeup)
THP	335	Advanced Stagecraft	Advanced construction techniques through applicable projects in carpentry and steel fabrication for theatre production in scenery and properties.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with C or better or THP 301 with B or better; minimum sophomore standing
THP	340	Scene Design	Studio projects in designing scenery for contemporary stages.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): BA In The Arts or Digital Culture (Theatre) BA or Film and Media Production BFA major or THP 213 OR Visiting University Student
THP	344	Drafting	Fundamentals of and practice in graphic techniques for the stage. Introduces computer-aided design for the stage.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2		Prerequisite(s): Digital Culture (Theatre) BA major or THP 213 with C or better OR Visiting University Student

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THP	345	Lighting Design	Principles and theories of stage lighting design, including design process and execution, advanced exploration of design implementation and equipment; course includes drafting and drawing.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Minimum Junior standing or Design & Production student with minimum sophomore standing
THP	350	Sound Design	Introduces the equipment, process, and recording techniques used in sound design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre or Film or Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better
THP	351	Arts Management	Management, organizational behavior, and human behavior in the arts; marketing, financing, and budgeting for the arts.	N	LEC	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts BA major or minimum 45 hours; Credit is allowed for only THP 351 or THP 394 (Management and the Arts) OR Visiting University Student
THP	355	Media Design for Performance	Introduces the fundamental skills, practices and theories for media and projection design for live performance, building on traditional areas of design for the theatre.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre, Film, Digital Culture (Theatre) or The Arts BA major; THF 215 or THP 313 with B- or better OR Visiting University Student
THP	360	Intermediate Playwriting	Continued development of skills in playwriting through specific exercises and completion of a full-length play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite: THP 260 with C or better or Prerequisite(s): ENG 210
THP	372	Acting: Advanced Movement	Movement techniques for the classical and nonrealistic theatre.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 272 with B or better; minimum junior standing OR Visiting University Student
THP	377	Acting: Voice and Speech	Introduces phonetic alphabet, exercises, and techniques for voice and speech improvement. Application to performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 277 with B or better; minimum junior standing OR Visiting University Student
THP	385	Acting: Shakespeare&Span Goldn	Rehearsal and performance of Shakespeare and other classical playwrights. Emphasizes understanding poetic language, vocal and physical skills.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102 with B- or better; THP 277 with B- or better
THP	387	Screen Acting	Professional film acting techniques, terminology and on-camera experience.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Filmmaking Practices BA major, Performance and Movement BA major, Theatre major or minor; THF 101 or THP 102 with C or better OR Film and Media Production major or minor OR Visiting University Student
THP	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	401	Theatre Practicum	Production assignments for advanced students of technical production, stage and business management, and design.	N	LAB	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-2		Prerequisite(s): THP 301 with C or better or Master of Arts or Master of Fine Arts student
THP	411	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 311 with A- or better or graduate student; Credit is allowed for only THP 411 or THP 511 OR Visiting University Student
THP	418	Advanced Directing	Studio work building on skills learned in intermediate directing, culminating in the presentation of a fully rehearsed one-act play.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 318 with C or better or Herberger Master of Art or Master of Fine Arts student OR Visiting University Student
THP	420	Acting:Solo/Collaborative Perf	Creation and development of original performance art works combining text, movement, multimedia, visual art; the actor as writer, designer, performer.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 101 or THP 102; minimum junior standing
THP	428	Theatre Capstone/Sr Project	Senior projects course that includes a culminating creative synthesis of student's knowledge.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 397 with C or better
THP	431	Advanced Costume Construction	Specialized training in costume construction problems and crafts with projects in tailoring, millinery, and period accessories.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Theatre Design & Production or Digital Culture (Theatre) or The Arts BA major; THP 214 with C or better; THP 331 with C or better
THP	435	Technical Direction	Seminar in fundamental principles and practices of technical directors as managers, engineers and artisans in theatre production.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 213 with B or better; THP 301 (Theatrical Construction) with B or better OR THP 301 (Production) with B or better; minimum junior standing; Credit is allowed for only THP 435 or 494 (Technical Direction)
THP	440	Advanced Scene Design	Advanced studio projects in designing scenery for a variety of stage forms.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better; or must be a Theatre Scenography or Performance Design student

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THP	441	Scene Painting	Studio projects in painting stage scenery.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 340 with C or better, or Theatre Scenography or Performance Design student
THP	442	Rendering Design & Production	Techniques in drawing and rendering for scenic, costume, and lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prereq(s): BA in The Arts (Entertain Design or Fash Design), Dig Cltre (Theatre) BA, Film (Film & Media Prod) BA, Film (Filmmaking Practices) BA, Film & Media Prod BFA, Film & Media Prod minor, Theatre BA, or Theatre minor OR Visiting University Student
THP	445	Advanced Lighting Design	Specialized techniques in stage lighting. Advanced application of design process, graphic techniques of design presentation, and use of qualities of light.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 345 with C or better or Theatre Scenography or Performance Design student; THP 444 with B or better
THP	448	AutoCAD for Live Entertainment	Comprehension and practice of two-dimensional drafting techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THF 215 or THP 313 with C or better or Theatre Design and Production major; Credit is allowed for only THP 448 or 494 (AUTOCAD)
THP	449	AutoCAD 3D	Comprehension and practice of 3D drafting and rendering techniques in AutoCAD. Focuses on applications in live entertainment.	N	LEL	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 448 with C or better; Credit is allowed for only THP 449 or 494 (AutoCAD 3D)
THP	450	Theatre Organization and Mgmt	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Herberger Institute for Design and the Arts student
THP	451	Student Production Board II	Performing arts entrepreneurship taught through the experience of operating a student-produced theatre company. Credit is available for the binary officers and administrators only.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre- or corequisite(s): THP 450 OR Visiting University Student
THP	452	Arts Entrepreneurship Seminar	Challenges students to learn how individuals have used their creative skills to create new arts business models. Case studies examine how creativity can spur new opportunities in the arts industry. Students complete their own project proposals.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): HDA 252 with B or better
THP	455	Advanced Media Design	Explores advanced skills, practices and theories for media and projection design for live performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Dance, Film, Theatre, or The Arts BA major; THP 355 with C or better; Credit is allowed for only THP 455 or THP 555 OR Visiting University Student
THP	457	Digital Portfolio	Cross-disciplinary exploration of methods, technologies and aesthetics of portfolio presentation for professional designers and artists.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): The Arts (Fashion Design) or Theatre (Design and Production) major; minimum 56 hours; Credit is allowed for only THP 457 or THP 494 (Digital Portfolio)
THP	482	Theatre for Social Change	Interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3	C	Prerequisite: Minimum sophomore standing
THP	483	Acting: Viewpoints/Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal and performance, and creating new work.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 202 with C or better; minimum junior standing or Performance and Movement major or MFA major
THP	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): Theatre or Film student
THP	487	Advanced Screen Acting	Builds on basic principles of on-camera acting to develop a range of acting styles in different formats on movie, television, computer and mobile device screens. Practical production includes a web series and community-based public service announcements.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 387; Credit is allowed for only THP 487 or THP 494 (Acting: TV and Film II)
THP	489	Acting: Audition Tech/Career	Familiarization with the business of performance: preparation and techniques for auditioning; self-promotion and marketing strategies; grant resources, interviews, and unions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 102 or THF 101 with B or better; THF 220 with B or better; minimum junior standing OR Visiting University Student
THP	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
THP	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-7		Prerequisites: Theatre Design & Production student
THP	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		
THP	500	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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THP	501	Performance: Solo Performance	Students begin to define their mission in art. Emphasizes the actor as a solo storyteller, speaking as herself or himself.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-8		Prerequisites: Master of Arts or Master of Fine Arts Theatre student
THP	505	Graduate Colloquium	Orientation to graduate study of theatrical practice; cohort development, introduction to the advanced literature and media in the art form.	N	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1		Pre-requisites: Master of Fine Art Theatre student
THP	511	Methods of Teaching Drama	Applies materials, techniques and theories with youth, grades pre-K-5. Emphasizes curriculum development and praxis. Regular participation with children.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only THP 411 or THP 511
THP	512	Puppetry Workshop	Surveys puppetry in education, puppetry as an art form in design and performance.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student
THP	513	Touring Theatre	Provides an understanding of the theories and aesthetics of touring theatre and a practice in its conceptualization, creation, administration, and production. Examines a variety of styles and methods of creating "movable" theatrical material, focusing on forms that require minimal scenic and design support. Focuses on process and working toward a quality product.	N	LEL	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Fine Arts Graduate student; Credit is allowed for only THP 513 or 598 (Touring Theatre)
THP	514	Prcjts/Community-Based Theatre	Theories and techniques of improvisational theatre with emphasis on youth. Stresses professional development through projects combining research, theory, and practice.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite: Master in Arts, Master in Fine Arts or PHD Theatre major
THP	517	Stage Management	Advanced study of the principles and practices of stage management in the professional theatre.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	518	Advanced Directing Lab	Active discovery of directing concepts through practical exercises and collaboration; deconstruction of contemporary/classic literature. Explores director as primary artist.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	519	Directing: Works in Progress	Advanced projects in directing concentrating on a collaborative process among director, playwright, actors, and designers. Focuses primarily on new scripts or adaptations of literature.	N	STO	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	520	Directing the New Play	Advanced methods and studies in directing, focusing on new play development.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	521	Performance I: Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination; emphasizes physical diagnostics and development.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	522	Performance I: Acting & Voice	Advanced studio work in the performer's voice; emphasizes physical awareness, vocal anatomy, training, and interpretation of texts.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	523	Performance II:Acting&Movement	Advanced studio work in the performer's body, voice, emotion, and imagination.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	524	Performance II: Acting & Voice	Advanced studio work in the performer's voice.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	525	Design I: Concept & Collaborat	Conceptual structures of the design process in theatre; development of creativity, flexibility, and communication in the collaborative process.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	526	Design I: Drawing & Rendering	Development of drawing and rendering skills, techniques, and evaluation in the presentation, realization, and communication of performance design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	527	Design II: Concept & Collabor	Offers students the chance to develop advanced skills in creating fully realized design ideas, particularly in working with new and experimental forms. Through the coursework, readings, and projects, students develop new methods and systems of thought for dealing with challenging dramatic works.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre major
THP	528	Design II: Visual&Presentation	Advanced skills and techniques in rendering, visualizing and presenting design ideas and materials for performance.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Master of Fine Arts Theatre student
THP	529	Viewpoints and Composition	Training in Anne Bogart's viewpoints and composition techniques; application to rehearsal, performance and creating new work.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): School of Film, Dance and Theatre MFA or PhD student
THP	540	Scene Design Applications	Conceptual and practical application of the design process including graphic and sculptural projects. Practical design problems investigated in a lab.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Art or Master of Fine Art Theatre student
THP	545	Lighting Design Applications	Advanced studio projects in stage lighting design.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Master of Fine Arts Theatre student
THP	550	Theatre Org & Management	Overview of nonprofit arts: organizational design, strategic planning, financial management, and leadership.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: MFA Theatre student

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THP	551	Arts Management	Advanced study of the principles and practices of arts management in the nonprofit and for-profit sectors.	N	SEM	N	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	552	Arts Entrepreneurship	Project-based course in new venture creation for the arts.	N	SEM	Y	GNA	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Graduate student in the Herberger Institute for Design and the Arts, the School of Community Resources and Development, or the W.P. Carey School of Business
THP	555	Advanced Media Design	Advanced applications for skills and practices in media design for live performance, including content creation, systems design, and playback.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): Master of Fine Arts Theatre student; Credit is allowed for only THP 455 or THP 555
THP	556	Performance Technology	Examines issues surrounding the integration of live performance and digital media. Students study the work of contemporary practitioners and theorists and experiment with creating their own works of digital art.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate Theatre major
THP	557	The Digital Portfolio	Crossdisciplinary exploration of methods, technologies, and aesthetics for portfolio presentation for professional designers and artists.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisites: Herberger Institute of Design and the Arts Graduate student
THP	560	Dramatic Writer's Workshop	Practice and study of creating characters, dialogue, scenes, plays, and monologues for the stage.	N	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	561	Scripts in Progress	Studio work with the instructor centered on revisions of original plays.	N	IND	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisites: Theatre student
THP	571	Dev 1: Cncpt,Collab & Authorsh	Includes five primary objectives: (1) To understand the continuum between leadership and authorship; (2) To analyze collaboration through collaborative projects; (3) To learn strategies for developing a hunch and creating a source book; (4) To conceptualize a devising project starting from three distinct prompts: visual images, literary adaptations, and site-specific space; (5) To develop a blueprint for a devising process on paper that articulates time lines, budgets, development process, methods and conceptual design.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	572	Devising II: Methods	Introduces three devising methodologies: (1) Moment Work by Tectonic Theatre Project; (2) Frantic Assembly; and (3) site-specific/immersive theatre and audience participation. Divided into three units that introduces the vocabulary of each methodology and an autocours (student-devised work) using that specific methodology.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571
THP	573	Devising III: Projects	Culmination of previous coursework where students form groups for the entire semester and determine (1) their leadership/authorship structure; (2) their "hunch" or idea; (3) their preferred devising method(s); and (4) their collaborative process. Over the course of the semester, each group begins developing a 30-minute original devised work to be showcased at the end of the semester for graduate faculty and an invited audience. The pieces can occur in a FAC space or site-specific location.	N	STO	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572
THP	574	Devising IV: Production	Culmination of previous coursework where students continue to work on their culminating applied project. Each weekly seminar, a student presents a work in progress of his or her original, devised work and receives mentorship, peer review and feedback.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): THP 571; THP 572; THP 573
THP	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	582	Theatre for Social Change	Advanced, interactive theatre techniques (e.g., Boal, drama therapy, playback theatre) to examine and combat institutional, social, cultural, interpersonal, and personal oppressions.	N	LEL	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Pre-requisite: Graduate or Doctoral student
THP	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Theatre student
THP	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		

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THP	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Theatre Master of Arts or Master of Fine Arts student
THP	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	SEM	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Pre-requisites: Fine Arts Graduate student
THP	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEL	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		Prerequisite(s): Fine Arts graduate student
THP	611	Sites of Inquiry-Performance	Examines scholarly, artistic and pedagogical pursuits in fieldwork and site-based studies in theatre, drama and performance. Requires development and execution of a research project.	N	SEM	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Pre- or corequisite(s): THE 500 or 700
THP	618	Theatre for Youth Practicum	Practical experience in theatre for youth projects: improvisation, education, production.	N	PRA	N	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	2-3		Prerequisites: Master of Fine Arts or PhD Theatre for Youth student
THP	649	Design Studio	Projects include design of scenery, costume, lighting, or sound for lab or mainstage productions.	N	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-3		Prerequisites: Master of Fine Arts Theatre student
THP	680	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	684	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisites: Master of Fine Arts or PhD Theatre student
THP	692	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		
THP	693	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	RSC	Y	Z1	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
THP	700	Research Methods	Course on research methods in a specific discipline.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
THP	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	RSC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-12		Prerequisite: Master of Arts, Master of Fine Arts, or PhD Theatre student
TMC	110	Understanding the Enterprise	Introduces essential functions required in technology-based and innovative enterprises and viewed in the context of their relationship to each other; examines the enterprise's role in society.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		
TMC	310	Promotion of the Enterprise	Whether they are entrepreneurial ventures or established companies, effectively promoting products is key to enterprise performance. Focuses on how to promote products from ideation to launch to growth. Covers understanding customers (values, behavioral economics); formulating strategies (landscape, segmentation, positioning); tactics (4P's); networks and data; digital promotion and growth. Also reviews quantitative techniques (conjoint, DOE, optimization). Applies concepts to market challenges and derives optimal solutions through analysis, strategy and tactics.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 110 with C or better or minimum 56 hours OR Visiting University Student
TMC	320	Funding the Enterprise	Focuses on financial resource management techniques utilized by U.S. domestic companies and covers the unique aspects of revenue accounting and its application to company operations. Concepts covered include: data capture of requisite information from various computer systems; determination of revenues generated from sales of products and services to customers; in-depth analysis of operational expenses; preparation of accounting and financial data; monthly accounting requirements; account reconciliation; monthly/quarterly/annual reporting; development and analysis of financial reports and billing. Emphasizes accounting, planning and valuation concerns, as well as financial trends and industry prospects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Biotechnology and Bioenterprise BS or Business (Business Administration) BA major or TEM 194 (Introduction to Technology Development) with C or better or TMC 110 with C or better OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
TMC	330	Leading the Enterprise	Comprehensive overview of leadership strategies and development as it applies to individuals, organizations and events. Applies leadership development to workplace dynamics such as technology management, entrepreneurship and globalization.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better; TMC 110 with C or better OR non-Technological Entrepreneurship and Mgmt major; ENG 102, 105, or 108 with C or better OR Visiting University Student
TMC	331	Quality Assurance	Instrumentation and methodologies for materials testing and quality control in various manufacturing processes.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-4		
TMC	410	Enterprise Operations	Emphasizes basic principles of enterprise operations management, including productivity, strategic management, global environment, forecasting, capacity planning, new technologies, location and layout strategies, supply-chain management, inventory control and scheduling. Uses common decision-making issues and related qualitative and quantitative techniques.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better OR Visiting University Student
TMC	430	Enterprise Strategy & Innov	Enterprise strategic plan development and implementation, concepts of open innovation; vision, mission, steps of strategic plan development; strategic goals, objectives, tasks, schedule, resource considerations; organization's strengths and weaknesses; environmental opportunities and threats; strategy implementation, impact assessment and refinement, organizational- and management considerations, theory and practice of open innovation.	N	LEC	N	GNA	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): Aeronautical Management Technology (all concentrations) BS major OR Applied Science (Aviation) BAS major OR MGT 300 or TMC 330 with C or better; Credit is allowed for only TMC 430 or OMT 494 (Strategic Planning & Management)
TMC	470	Enterprise Planning & Implemen	Investigates and tests tools and techniques for effective design and management of enterprise projects and programs using computer applications. Develops and demonstrates teambuilding and leadership skills in course projects.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ABS 350, ECN 221, ECN 231, EGR 280, HSE 230, IEE 380, PSY 230, STP 226, STP 420, or STS 401; MGT 300 or TMC 330 with C or better; Credit is allowed for only OMT 570 or TMC 470 OR Visiting University Student
TMC	480	Senior Project	Capstone project experience refining skills in communication, research and information retrieval, critical analysis and criticism, and demonstrating technical competence in each student's area of study.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; TMC 430 with C or better; senior standing
TMC	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-7	L	Prerequisite(s): Fulton Polytechnic School undergraduate; ENG 101, 105 or 107 with C or better; minimum 2.25 GPA OR graduate student; minimum 2.25 GPA
TMC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only
TMC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1		Pre Requisites: Graduate or Non Degree Students Only
TMC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	LEC	Y	Z2	Ira A. Fulton Schools of Engineering	Tech Entrepreneurship & Mgmt	1-12		Pre Requisites: Graduate or Non Degree Students Only

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TSS	500	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	501	A Deep Hstry US/Mex Brldls I	Using a comparative and relational approach, the seminar explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from pre-contact times to the Mexican American War.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	502	Found of Transborder Studies	Using a comparative and relational approach, explores various layers of development starting with economic structures and culture and their impact on various aspects of transborder society including politics, social organization, demography, and cultural practice. Focuses on the period from the Mexican American War to the recent past. Centers on comparative economic growth and development of Mexico and the United States, the impact of unequal development on the border region and its people, and the development of a transnational society in the U.S./Mexico borderlands.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	503	Epistemologies & Trnsbrdr Thgt	Examines different approaches to the production and critique of knowledge relevant to transborder social, political, economic, cultural, and institutional structures and processes. The complexity of these structures and processes require transdisciplinary methods of inquiry that go beyond a single set of disciplinary assumptions. Explores the transdisciplinary articulation of theory and method, and considers the strengths and limitations of various approaches and critiques.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	504	Theories&Mthds Transbrdr Rsrc	Focuses on the selection of theories and methods appropriate for transborder research. Considers the pitfalls of conducting monodisciplinary research in a stratified, differentiated and multicultural world; the most robust methods used in various approaches; the main methodological obstacles to transdisciplinary research; and the challenges of using mixed methodology.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	505	Theories & Methods Migration	Divided conceptually in three broad analytical areas: (1) migration with an emphasis on demography, (2) health with an emphasis on epidemiology, and (3) public policy analysis. Provides basic training in the application and interpretation of quantitative and qualitative methods and techniques commonly used in researching these areas. Applies these techniques to issues that are specific to the reality of transborder and/or transnational contexts. Students are required to apply and present an analysis in their field of interest which demonstrates their grasp of theory and method.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	506	Theory & Mthds Transborder MEC	Overview of the interdisciplinary theories and methods employed to research and analyze media and creative cultural production. Objects of analysis include literature, film, live performance, theater, Web-based media, popular culture production, and visual arts. Required readings elucidate strengths, limitations, and applicability of particular theories and methods to different types of creative expression and media production as well as to their historical and political contexts. Students engage with, critique, and contribute to the theories and methods presented in the course.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	507	Thry Mthds Transbr Ctl Lng Lrn	This course familiarizes graduate students with literature on relationship between culture, language, and learning, and their theoretical and methodological underpinnings within a transborder context.	N	LEC	N	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	583	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TSS	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	596	Transborder Studies Capstone	Culminating capstone experience of the Masters of Advanced Study degree in Transborder Studies, allowing students to develop a project tailored to their interests, needs and goals. Each student has a minimum of one faculty member to support the capstone project.	N	RSC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): Transborder Studies MAS student
TSS	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	599	Thesis	Supervised research focused on preparation of a thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	600	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	601	Intrnshp Trnsbd Studies	Academic internship helps students become full participants in globalized, transnational contexts through a combination of practical experiences in community organizations, readings about transnational life in globalized contexts, reflection, and discussion.	N	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	607	Colloq Transborder Studies	Provide students the opportunity to present their skills, learning, research, and topical interests before an open forum of faculty and students at the beginning of their third year and prior to their dissertation research.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	608	Trnsmt Trnsbdr Stds Pblcs Inst	Provides students with the most recent advancements in presenting the underlying theory, methods, and techniques in transborder analysis and application. Designed to enter multiple audiences in public, professional, academic, and school settings, course takes advantage of the latest developments in multimedia, print, and electronic technology, film, and print in order to provide systematic and detailed learning opportunities. Provides the basis of developing capacities to create and develop learning modules, and programs on issues of transborder political ecology, economic transformations, cultural development and emergence, literary constructions and projections, and issues of identity, class, and gender. Course is conducted bilingually and makes use of Spanish- and English-language resources. For this reason, it is advisable, but not required, that students are at least conversationally proficient with Spanish and English.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	609	Prspctus Desgn Trnsbd Studies	Provides doctoral students with the necessary tools to prepare a research proposal that could be submitted as a dissertation prospectus or to a funding agency. Students bring a well-formulated idea of the kind of research they wish to pursue for their dissertation. They also bring a clear idea of the relevant concepts, literature and methods, required to complete the proposal.	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	611	Comp TB Prspctvs Lrng	This small class emphasizes discussion, presentations by students, and written research papers. Surveys theoretical and methodological aspects related to the use of comparative and transborder perspectives to the study of education.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	612	Pol Cull Lrng Chng TB Cntxt	Examines a variety of development and learning issues confronting linguistically and culturally diverse groups with an emphasis on immigrant children and families. Includes such topics as: (1) Theoretical foundations and their related impact on organizing interventions for learning and socialization. (2) The intersection of the development of language, culture, and learning in context of linguistic diversity and immigration. (3) The influence and impact of public policy on language minority groups of immigrant backgrounds.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	614	Bingsm Dvrs Acq Prct Ctxts	Examines bilingualism, language in society, and languages in contact in transborder contexts and bilingual schooling.	N	SEM	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): PhD student

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TSS	615	Dial Inq TB Cntxts	Introduces the application of dialectical inquiry in value-relevant grounded research methods as a complementary approach to value-free scientific inquiry into practical problems in transborder cultural acquisition, language development, and learning.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Transborder Studies	3		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	683	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	695	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	700	Research Methods	Course on research methods in a specific discipline.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	783	Fieldwork	Structured, supervised field experience in a field science or other discipline requiring experience in field techniques.	Y	PRA	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	RSC	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	School of Transborder Studies	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	N	RSC	Y	Z3	The College of Liberal Arts and Sciences	School of Transborder Studies	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TSS	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Transborder Studies	1-15		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	104	Crit Inquiry in Engineering	Critical thinking. Systematic evaluation of information as input to well-informed decision making. Close reading and substantive writing in a technical setting.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Pre- or corequisite(s): ENG 102, 105, or 108 with C or better if completed; Credit is allowed for only EGR 104 or TWC 104 OR Visiting University Student
TWC	214	Storytelling with Data	Students read and discuss theories of data visualization as well as produce a wide range of visualizations using a variety of data sets. Students learn how to process data to discover what's important about the data, and how to use data to tell visual stories that attempt to persuade, inform and engage audiences. Students learn basic principles of design and narrative to help them develop visually engaging data visualizations in narrative patterns that tell interesting and persuasive stories. And, they use a variety of software tools to construct data visuals and how to make choices in visualization style.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		
TWC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		

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TWC	301	Fundamentals Writing Dig Media	Foundational concepts and technologies of writing for a variety of digital media.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TWC	347	Written Comm for Managers	Strategies, techniques and genres for developing and presenting information intended for business and other workplace audiences.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
TWC	361	Writing for Health Care Mgmt	Strategies, formats, and techniques for effective writing and presentation of information for nursing professionals.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): RN-BSN student; ENG 102, 105, or 108 with C or better; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	362	Writing in Health Professions	Focuses on effective communication practices in health-related fields, emphasizing communicating professionally with both scholarly and workplace audiences. In addition to providing a foundation in workplace communication, emphasizes information and technology literacy to help students become proficient in collecting, analyzing, interpreting and synthesizing information using appropriate tools, sources and styles.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102 or 105 or 108 with C or better; Medical Studies major or Edson Nursing and Health Innovation student; Credit is allowed for only TWC 361 or TWC 362 OR Visiting University Student
TWC	371	The Science of Science Comm	Aims to teach science students how to effectively communicate across a range of audiences about why science matters, how it works and its relevance to the way we live our lives. Students learn to communicate effectively in a digital age where content is easily accessed, but understanding that content is harder to achieve. They also learn how to measure the effectiveness of their communication of science.	N	LEC	Y	NSW	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		Prerequisite(s): minimum 45 hours OR Visiting University Student
TWC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	401	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 401 or TWC 501 OR Visiting University Student
TWC	403	Writing for Prof Publication	Analyzes the market and examines the publication process, including the roles of the author, editor, and reviewer.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours
TWC	411	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 411 or TWC 511 OR Visiting University Student
TWC	414	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 414 or TWC 494 (Visualizing Information or Information Visualization) or TWC 514 or TWC 598 (Visualizing Information or Information Visualization) OR Visiting University Student
TWC	421	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 421 or TWC 521 OR Visiting University Student
TWC	422	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 422 or TWC 494 (Social Media in the Workplace) or TWC 522 OR Visiting University Student
TWC	431	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 431 or TWC 531 OR Visiting University Student

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TWC	435	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents, and websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	G	Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 435 or TWC 494 (Global Issues in Technical Communication) or TWC 535 OR Visiting University Student
TWC	436	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication) OR Visiting University Student
TWC	443	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 443 or TWC 543 OR Visiting University Student
TWC	444	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 444 or TWC 544 OR Visiting University Student
TWC	445	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing, and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 445 or TWC 545 OR Visiting University Student
TWC	446	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 446 or TWC 546 OR Visiting University Student
TWC	451	Copyright/Intellect Prop/Elect	Explores issues related to copyright and intellectual property laws, with emphasis on electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 451 or TWC 551 OR Visiting University Student
TWC	452	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 452 or TWC 552 OR Visiting University Student
TWC	453	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L & H	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 earned hours; Credit is allowed for only TWC 453 or TWC 553
TWC	454	Information Tech & Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 454 or TWC 554 OR Visiting University Student
TWC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
TWC	490	Capstone	Development of a professional portfolio, creation of a culminating document, and synthesis of undergraduate experience.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 87 hours

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TWC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6		Prerequisite(s): Barrett Honors student
TWC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
TWC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
TWC	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-3		
TWC	501	Fundamentals of Technical Comm	Basic information design principles for producing effective technical communication, including rhetorical and audience analysis, as well as common workplace genres and technical communication tools.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 401 or TWC 501
TWC	504	Applied Rhetoric and Tech Comm	Foundation in applied and technical communication. Covers the emergence and development of technical communication as a profession and field; rhetorical concepts and their application to technical and applied communication, ethical issues; and the impact of Internationalization.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student
TWC	505	Research in Tech and Appl Comm	Explores the research process and methods appropriate for technical and professional communication. Provides a foundation for understanding the research process; designing and planning valid research within the context of technical and professional communication; collecting and interpreting information, ethical issues related to research; and reporting results.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 504
TWC	506	Research Design & Development	Focuses on the research process, including the development of research questions, selection of appropriate methods, preparation of a literature review, and design of research projects. Prepares students to design the research for their applied project or thesis. Students apply their knowledge of research methods and the research process by preparing a fully developed proposal at the conclusion of the course.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student; TWC 505; minimum 24 graduate TWC hours
TWC	511	Prin of Visual Communication	Principles and tools of visual communication in print and electronic media, with an emphasis on document design, including typography and color.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 411 or 511
TWC	514	Visualizing Data & Information	Covers how to process data and information in ways that help discover what's important about the information and what the clearest way is to communicate that information. Covers how to manage data and use a variety of software tools to communicate patterns and tell visual stories, as well as how to make choices in visualization style in ways that will assist an audience to effectively interact with and process the information.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 414 or TWC 494 (Information Visualization or Visualizing Information) or TWC 514 or TWC 598 (Information Visualization or Visualizing Information)
TWC	521	Principles of Web Authoring	Principles of writing for the Web, including information architecture, accessibility, usability and responsive design. Explores basics of markup language and content management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 421 or TWC 521
TWC	522	Social Media in the Workplace	Analyzes different social media platforms and develops strategies and techniques for effective and appropriate use of social media in the workplace.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 422 or TWC 522
TWC	531	Principles of Tech Editing	Principles and techniques of technical editing for print and electronic media, including standards, styles, copyediting, comprehensive editing and project management.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 431 or TWC 531
TWC	535	Global Issues in Tech Comm	Helps students understand issues that shape workplace communication in a global environment. Technical communicators are expected to be specialists who interact effectively with a broad range of audiences. Given the global nature of today's workplace, those audiences typically include people from many cultures and countries. Through readings, written assignments, and analysis of case studies, documents and Websites, explores ways in which culture and language shape professional interactions. Also examines other critical issues such as translation, localization, technology and distributed work teams that impact writing and designing documents in a globalized work environment.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 435 or TWC 535 or TWC 598 (Global Issues in Technical Communication)

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TWC	536	Project Mgmt in Tech Comm	Effective project management processes are central to technical communication in the workplace, and project management figures prominently in job descriptions for technical communicators at all levels. Introduces the literature, tools, and techniques of project management within technical communication. Focuses on learning effective project management best practices during the life-cycle of technical communication projects, which may include documentation or training projects. Uses case studies and Web pages, group discussion, presentations, and individual and team projects to aid in understanding and application of project management for technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 436 or TWC 494 (Project Management in Technical Communication) or TWC 536 or TWC 598 (Project Management in Technical Communication)
TWC	543	Grant & Proposal Writing	Develops persuasive strategies and approaches for researching and writing professional funding proposals and grant applications.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 443 or TWC 543
TWC	544	User Experience	Explores principles, techniques and tools of user experience (UX), including user and task analysis, user-centered design and usability testing.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 444 or TWC 544
TWC	545	Content Strategy	Explores concepts, techniques, strategies and technologies for authoring, managing and publishing re-usable content in online documentation, help files and other types of technical communication.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 445 or TWC 545
TWC	546	Technical & Scientific Reports	Explores strategies and techniques for developing informational and analytical reports in a range of genres and for a variety of audiences in scientific and technical fields.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate. Credit is allowed for only TWC 446 or TWC 546
TWC	551	Copyright/Intell Prop/Elec Age	Explores issues related to copyright and intellectual property laws; emphasizes electronic environment.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 451 or TWC 551
TWC	552	Information in the Digital Age	Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 452 or TWC 552
TWC	553	Info/Comm Tech/Amer History	Explores the historical development of information and related technologies in the United States from colonial times to the present.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 453 or TWC 553
TWC	554	Information Tech and Culture	Explores the historical impact and intersection of communications technology and culture in America.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only TWC 454 or TWC 554
TWC	560	Capstone	Hands-on project in user experience. Requires a report based on research or applied work as a culminating experience.	N	SEM	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): User Experience MS student; Credit is allowed for only GIT 560 or HSE 560 or TWC 560
TWC	584	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	SEM	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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TWC	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	596	Capstone	Synthesizes and applies the concepts, skills, strategies and techniques learned in courses completed for the program. Also reflects upon that work, analyzing their strengths as a technical communicator and identifying areas for growth. Demonstrates ability to respond to the needs of specific audiences and communication situations by selecting from their work to craft a substantive professional dossier that presents a compelling story of their technical communication abilities, along with a reflective statement that discusses their work in relation to program outcomes.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): Technical Communication MS student
TWC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
TWC	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
UET	305	Intro to Microelectronics	Quantifies the role of microelectronics technology and its associated skills as drivers for electronics systems development.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Prerequisite: Academic Level greater than or equal to Junior
UET	331	Electronic Materials	Physical, chemical, electromagnetic, and mechanical properties of electronic materials. Solid-state device characteristics and their material properties.	N	LEC	N	OPT	Ira A. Fulton Schools of Engineering	Engineering Programs	3		Pre-requisites: EST 210; CHM 113; PHY 112 OR Applied Science (Electronic Energy Systems) BAS student
UNI	110	Critical Reading and Thinking	Prepares students to be successful in college-level academics and helps them improve their critical reading and critical thinking skills.	N	LEC	N	OPT	University College	Dean, University College	3	L	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student
UNI	120	Academic Success	Assists students in creating strategies for success in their academic lives. Students explore personal and academic strengths and barriers that impact success, identify and utilize university resources available to support success at ASU, acquire and enhance academic skills necessary for success in the university, and discover ways to stay on course to meet academic goals.	N	SEM	N	GNA	University College	Dean, University College	1		Credit is allowed for only ASU 120 (or ASU 150) or UNI 120 OR Visiting University Student
UNI	150	Major and Career Exploration	Concepts and skills in the process of selecting a major: self-assessment, research, interviewing, and decision making. Exploration of ASU opportunities and investigation of career options.	N	SEM	N	OPT	University College	Dean, University College	1		
UNI	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	GNA	University College	Dean, University College	1-4		
UNI	220	Mindset Connections	Explores how students' strengths and barriers influence success (i.e., how mindset, perception and beliefs influence behavior) and discovers methods for staying focused and meeting academic, personal and professional goals. Students acquire and enhance emotional intelligence skills for success in and out of the classroom.	N	SEM	N	GNA	University College	Dean, University College	1		
UNI	225	Emotional Intelligence	Develops understanding of emotional intelligence and the influence it has on leadership, success and relationships. Focuses on basic theories of emotional intelligence and applies these concepts to real-world examples. Discussion and application-based course focuses on the development of self-awareness in our daily lives.	N	SEM	N	GNA	University College	Dean, University College	1		Credit is allowed for only UNI 225 or UNI 294 (Emotional Intelligence: Leadership and Success) or UNI 294 (Researching Emotional Intelligence)
UNI	240	Researching Mindfulness	Explores mindfulness and the impact it has on success as a student, an individual and in the future. Therefore, students research instructor-approved topics within the subjects of psychology, emotional regulation and mindfulness in order to deepen their understanding of how the brain and the mind influence beliefs, choices, behaviors and learning. Students develop skills that support their academic, personal and professional goals, using tools such as Dweck's Mindset Theory and Rock's SCARF Model. Develops critical thinking skills, and how to apply research to their daily lives.	N	LEC	N	GNA	University College	Dean, University College	1		Credit is allowed for only UNI 240 or UNI 294 (Mastering Mindsets)

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UNI	250	Choosing a Major	Advanced, one-hour career development course helps students make a thoughtful selection of major and consider the career direction that fits best for them. Students complete advanced assessments of interests, personality, and values; investigate relevant majors and careers, including connecting with working professionals; learn effective decision-making strategies; identify barriers and resources; and make connections to new major department.	N	SEM	Y	OPT	University College	Dean, University College	1		Prerequisite(s): UNI 150 with a C or better OR Visiting University Student
UNI	270	Career Direction for Success	Actively engages students in their educational and career-planning process by exploring factors that influence personal decision making and planning for the future. Students examine their strengths and personal narrative, identify decision making factors, research career development and a particular career, and develop teamwork skills for the workplace.	N	SEM	N	GNA	University College	Dean, University College	1		Prerequisite(s): UNI 250 with C or better; Credit is allowed for only UNI 270 or UNI 294 (Next Steps in Career & Major Exploration) OR Visiting University Student
UNI	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
UNI	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		Prerequisite(s): minimum 45 hours OR Visiting University Student
UNI	400	Society and the Individual	Various social institutions, how they shape the socialization process of a group and individual and give a community meaning, values and a set of norms. Focuses on Arizona as a case study for student research inquiries.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): Bachelor of General Studies major; ENG 101, 105 or 107 with C or better; minimum 2.00 GPA; minimum 90 hours; Credit is allowed for only UNI 400 or COM 494 (Society and the Individual) OR Visiting University Student
UNI	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	University College	Dean, University College	1-4		
URB	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
URB	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-12		
URB	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	Watts College of Public Service & Community Solution	School of Public Affairs	1-6	L	Prerequisite(s): Barrett Honors student, ENG 101, 105, or 107 with C or better
URB	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Watts College of Public Service & Community Solution	School of Public Affairs	1-4		
USL	210	SrvLming:Intro Commy Issues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions, and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship, and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): ENG 101, 105, or 107 with C or better OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
USL	216	Service Learning:For Educators	Examines the effects of social justice issues on student achievement. Correlates academic coursework with required community service to analyze community needs, the importance of civic engagement and community issues affecting ethnic minorities and marginalized populations in contemporary American society, particularly how it applies to our education system. Students dedicate a minimum of 70 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services) directly serving high-needs youth or adults. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and social injustices, and how to utilize this knowledge in the teaching profession to better serve all students. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): Mary Lou Fulton Teachers College major; ENG 101, 105 or 107 with C or better OR Visiting University Student
USL	402	Service Learning: Educ & Youth	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement, and an in-depth study of the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society as they apply to education in Arizona and the United States (policy, student achievement, teacher and administration effectiveness and parental involvement). Students dedicate 100 service hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies), directly serving high-needs youth. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and the importance of civic engagement particularly how it applies to the education system. Provides real-world experiences that exercise advanced academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	Y	OPT	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
USL	410	Srvclmng:DiverseCommtlyIssues	Correlates academic coursework with community service and provides reflection opportunities that examine community needs, the importance of civic engagement and an introduction to the effects of social injustice affecting ethnic minorities and other marginalized populations in contemporary American society. Students dedicate 100 hours at a preapproved site (including Title I K-12 schools, youth programs, health services, social services, environmental programs, government agencies) directly serving a population in need or supporting activities that contribute to the greater good of our community. Weekly seminar, course readings, discussions and reflection assignments facilitate critical thinking and a deeper understanding of cultural diversity, citizenship and how to contribute to positive social change in our community. Provides "real-world" experiences that exercise academic skills and knowledge applicable to each student's program of study and career goals.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3	L & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours OR Visiting University Student
USL	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	PRA	Y	Z1	Mary Lou Fulton Teachers College	Division of Teacher Preparation	1-12		
USL	496	Service-Learning Capstone	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Applies theory from service-learning pedagogy and educational studies to real-world application and academic success. Provides field experience for students to exercise academic knowledge and skills applicable to career experience and program studies. Students must (a) successfully assess a community need in education that correlates to current research and (b) collectively plan a sustainable service project that benefits high-needs children. The student-directed service project addresses social justice issues in education related to corresponding research.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 402 or 410

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USL	497	Service-Learning Capstone Proj	Graded internship that allows students to integrate coursework with a hands-on service-learning experience. Implements a sustainable service project addressing social justice issues in education. Student-directed project corresponds to research and planning completed during the previous semester. Provides field experiences for students to implement academic knowledge and skills acquired through the Educational Studies program and to create realistic solutions to national and local community issues that impact student achievement.	N	PRA	N	GNA	Mary Lou Fulton Teachers College	Division of Teacher Preparation	3		Prerequisite(s): USL 496
VIP	194-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	194-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	194-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	194-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	194-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	194-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	294-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	294-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	294-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	294-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	294-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	294-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	394-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	394-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	394-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	394-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	394-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	394-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	394-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VIP	494-BMI	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-CSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Computer Science and Engineering Program	1-4		
VIP	494-FSE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Ira A. Fulton Schools of Engineering	Dean, Ira A. Fulton Schools of Engineering	1-4		
VIP	494-HCD	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Health Solutions	College of Health Solutions	1-4		
VIP	494-HON	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Barrett, The Honors College	Barrett, The Honors College	1-4		Prerequisite(s): Barrett Honors student
VIP	494-MUE	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	Herberger Institute for Design and the Arts	School of Music, Dance and Theatre	1-4		
VIP	494-PSY	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of Psychology	1-4		
VTN	101	Elementary Vietnamese I	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	
VTN	102	Elementary Vietnamese II	Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 101 with C or better

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VTN	201	Intermediate Vietnamese I	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 102 with C or better OR Visiting University Student
VTN	202	Intermediate Vietnamese II	Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	5	G	Prerequisite(s): VTN 201 with C or better
VTN	321	Adv Vietnamese & Literature I	Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Prerequisite(s): VTN 202 OR Visiting University Student
VTN	322	Adv Vietnamese & Literature II	Continuation of VTN 321. Readings from modern, contemporary, and folk literatures as well as current periodicals.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of International Letters and Cultures	3	HU & G	Pre-requisite: VTN 321
VTN	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of International Letters and Cultures	1-3		
VTS	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
VTS	301	Experience America Modern Wars	Surveys the history of America's wars, military and veterans from the American Revolution through today. Also exposes how American society has understood the role of the military and those who served, both during and after their service in American wars.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only HST 300 or VTS 301 or HST 394 (Veterans, Society and Service: Core I) OR Visiting University Student
VTS	302	Representations of Veterans	Surveys the cultural history of veterans' representations from the early mythical verses about the Trojan War produced by Homer in the Odyssey (800 BC) to contemporary self-representations in social media platforms such as YouTube. Examines the various motives societies have for promoting specific kinds of representations of veterans, the veteran culture and their experiences. This course does not presume to offer a singular vision of the veteran experience. Instead, it seeks to expose students to the diversity of ways in which veterans are represented and self-represented. Readings and assignments provide an intersectional understanding of the veteran community, and the veteran and military cultures. By looking at the axis of race, gender, sexuality and class, students examine why specific modes of representations persist over time and encourage them to use this course as a starting point for future studies in any number of disciplines.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	H & C	Prerequisite(s): minimum 45 hours; Credit is allowed for only COM 302 or VTS 302 OR Visiting University Student
VTS	376	Writing a Personal History	Interdisciplinary writing course emphasizing theories, methodologies, and issues of composing personal histories.	N	LEC	N	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	L	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 376 or VTS 376 OR Visiting University Student
VTS	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
VTS	395	Combat in Film	Interdisciplinary approach to and qualitative method for analyzing war movies and military dramas as both historical and cinematic narratives that represent the experiences of infantry marines and soldiers in 20th- and 21st-century U.S. wars.	N	LEC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3	SB & H	Prerequisite(s): minimum 45 hours; Credit is allowed for only ENG 394 (Combat in Film) or ENG 395 or FMP 395 or HST 306 (Combat in Film) or HST 395 or VTS 395 OR Visiting University Student
VTS	402	Undergraduate Research	Students learn about various research tools and methodologies of use in developing individual or group research projects in the veteran studies field. Completed projects may include bibliographies, literature reviews or articles for publication.	N	RSC	N	GNA	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	3		Prerequisite(s): VTS 301; VTS 302
VTS	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	Z1	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-12		
VTS	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	College of Integrative Sciences and Arts	College of Integrative Sciences and Arts	1-4		
WAC	101	Intro to Academic Writing	Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary, and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		
WAC	107	Intro to Academic Writing	For students for whom English is not the native language. Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary and analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Department of English	3		Prerequisite(s): TOEFL score below 560PBT/220CBT/83iBT, or IELTS score 0-6.5, or ACT English score 0-18, or SAT Verbal score 0-510 (or SAT Verbal score 0-460 if taken before 2016), or Accuplacer score 0-4 OR Visiting University Student
WAC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Department of English	1-4		

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WPC	101	Student Success in Business	Introduces students to resources that help them to succeed in the W. P. Carey School of Business.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Credit is allowed for only ASU 101 (or equivalent) or WPC 101 or WPC 201 or WPC 194 (Business Student Development) OR Visiting University Student
WPC	148	Intro to Career Development	Building career skills, interests and strengths as a college student.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; minimum 12 hours; Pre- or corequisite(s): ACC 101 or WPC 101; Credit is allowed for only WPC 148 or WPC 301 or WPC 347 OR Visiting University Student
WPC	150	Business and Society	Introduces the role and purpose of business in society, specifically how we can be a force of good in people's lives, in our environment, in our community and in the world. Students learn about the different core functions in business such as accounting, economics, finance, information systems, marketing, management and supply chain management as well as how each makes decisions that impact our society.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		
WPC	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	248	Soph Career Narrative Design	Research methods and strategic thinking for finding internships.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 148 with C or better; minimum 30 hours; Credit is allowed for only WPC 248 or WPC 301 or WPC 347 OR Visiting University Student
WPC	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		
WPC	300	Prob Solving & Act Analytics	Provides foundational skills for exploring unstructured business problems. Covers techniques to approach decision making in a systematic manner, enabling students to become more comfortable in handling tasks or projects that are not initially well defined. Methods include exercises in brainstorming and iterating as well as use of more traditional analytical tools (such as spreadsheets and visualization software).	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prq(s): BUS mj w/minC: ACC231,232,261; ECN212,214; ECN221,231,IEE380,STP280; MAT210,251,265,270 OR TchLdrspBS: 30 hrs; AME230,CSE110,SES230(130); STP226 OR DataSciBS: CIS235 w/minC; Pre/co(s): BUS mj; ACC 241,242,271 w/minC OR Visiting University Student
WPC	301	Business Forum	Provides professional program business students with information on careers, interviewing, job hunting, and résumé skills. Must be taken in the first semester of the professional program for business students.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	1		Prerequisite(s): Business BA or BS major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 or WPC 348 or WPC 448 or WPC 449 OR Visiting University Student
WPC	347	Intermediate Career Management	Skills for transfer students for balancing career preparation with academic success as they transition to the W.P. Carey School of Business.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.5		Prerequisite(s): Business major; Credit is allowed for only WPC 148 or WPC 248 or WPC 301 or WPC 347 OR Visiting University Student
WPC	348	Junior Networking Foundations	Career relationship-building techniques and full-time, job-readiness skills.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 248 or 347 with C or better; minimum 60 hours; Credit is allowed for only WPC 301 or WPC 348 OR Visiting University Student
WPC	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): minimum 2.00 GPA; minimum 56 hours OR Visiting University Student
WPC	448	Sr Career Transition Mgmt	Intensive application of the job search cycle and processes for students still seeking post-graduation employment.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449 OR Visiting University Student
WPC	449	Campus to Career	Transitional skills for workplace success for students who have obtained post-graduation, full-time, college-level positions or graduate school acceptance.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	0.25		Prerequisite(s): Business major; WPC 348 with C or better; minimum 90 hours; Credit is allowed for only WPC 301 or WPC 448 or WPC 449

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WPC	470	Business Admin Capstone	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers buy at prices that cover the costs of producing them is the key to success for business organizations. The starting point for thinking about how an organization might create value and gain sustainable competitive advantage is analyzing current and future environments to understand threats and opportunities in various institutional settings around the world. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prereq(s) w/C or better: W.P. Carey (Bus Admin or Health Care) BA major; FIN 300, 302 or 303; LES 305; MGT 300 or 303 or HCD 302; MKT 300, 302 or 303; SCM 300 or 303; WPC 300; Int'l Bus course; senior standing; Credit is allowed for only WPC 470 or 480
WPC	480	Capstone Course	Develops a general manager's or business owner's perspective on how organizations can create value. Creating long-run value by repeatedly producing goods and services that customers will buy at prices that cover the costs of producing them is the key to success for business organizations. Analyzing current and future environments to understand threats and opportunities in various institutional settings around the world is the starting point for thinking about how an organization might create value and gain sustainable competitive advantage. Evaluates the impact of institutional settings in different countries and ethical values on decision making. Students learn how to successfully manage relations with key stakeholders including customers, employees, suppliers of capital as well as other component goods and services, and stakeholders from various levels of government in different countries.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3	L	Prereq(s) w/C or btr: WPC BS mjr; ENG 101, 105 or 107; FIN 300, 302, or 303 or IEE 300 if Engr Mgmt mjr; LES 305; MGT 300 or 303; MKT 300, 302, or 303; SCM 300 or 303; WPC 300; Int'l Bus course; senior stding; Credit is allwd for only WPC 470 or WPC 480
WPC	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	LEC	Y	Z1	W. P. Carey School of Business	Prebusiness Office	1-6		Prerequisite(s): Barrett Honors student
WPC	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	LEC	N	Z1	W. P. Carey School of Business	Prebusiness Office	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
WPC	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): W. P. Carey BS or BA major; minimum junior standing OR Visiting University Student
WPC	501	Statistics for Business	Fundamentals of statistical analysis to aid management decision making.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	2-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	502	Career Coaching	Prepares students to navigate the challenging MBA world of work. Applies theories and best practices of career management and job search to help students make informed career choices, to obtain an internship between year one and year two of the program, and to obtain a full-time position upon graduation.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): W.P. Carey MBA degree major; Credit is allowed for only WPC 502 or MGT 594 (Career Leadership)
WPC	503	Managerial Communications	Provides opportunity to develop and enhance all aspects of business communications including presentation skills, business writing, informal business communication and giving feedback. Students (1) use PowerPoint or other presentation tools to deliver an effective team presentation; (2) write an effective memo proposing a course of action to solve a business problem; (3) deliver effective feedback to peers to enable them to improve their communications skills; and (4) communicate effectively in a team problem solving setting.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-4		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WPC 503 or MGT 594 (Leadership Communication)
WPC	504	Fundamntals Stats for Managers	Provides conceptual introduction to the field of statistics and its many applications. Designed for students with limited business experience and without an undergraduate business degree.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	3		Prerequisite(s): degree-seeking graduate student
WPC	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner and/or faculty member with whom the student works closely.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WPC	584	Internship	Structured practical experience that follows a contract or plan, supervised by faculty and practitioners.	N	LEC	N	OPT	W. P. Carey School of Business	Prebusiness Office	0-12		

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WPC	585	Future Forward Leadership	Today organizations operate in a world that is globally and economically connected, complex and rapidly changing. Rapid technological change and start-up disrupting companies are changing the speed and nature of work. The evolving nature of work requires leaders who know how to contextualize and understand ambiguous, uncertain problems, to discover innovative and creative solutions. Future Forward Leadership develops the cognitive and leadership capabilities for this changing arena. The course builds on the knowledge gained in all of the prior courses in the MBA curriculum and applies it to ambiguous and volatile problems and issues. Team taught by faculty from across ASU and WP Carey using simulations and scenarios and hot evolving cases covering the following topics: design thinking, improvisation, super-flexibility, uncertainty, sense-making, execution through experimentation and recalibration.	N	LEC	N	GNA	W. P. Carey School of Business	Prebusiness Office	2.5		Prerequisite(s): W.P. Carey MBA major
WPC	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	594	Conference and Workshop	Topical instruction, usually in compressed format, leading to academic credit. Often offered off campus to groups of professionals.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-12		
WPC	598	Special Topics	Topical courses not offered in regular course rotation--e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	W. P. Carey School of Business	Prebusiness Office	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	100	Women, Gender, and Society	Interdisciplinary introduction examining critical issues in women's studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Credit is allowed for only WST 100 or WST 300 OR Visiting University Student
WST	191	First-Year Seminar	Small course emphasizing student-faculty discussion and interaction.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		Pre-requisites: Must be a freshman with 25 or less total earned hours
WST	194	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	220	Gender, Media and Culture	Introduction to gender and the media including magazines, films, advertising, new media, and other popular culture forms.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Credit is allowed for only ENG 220 or WST 220
WST	235	Disability, Justice & Advocacy	Overarching history of the disability rights movement and how it is similar to and different from other civil and rights movements. Examines how policies and activism are interconnected within this movement, in addition to looking at other human categories related to disabilities such as gender, sexuality, race and socioeconomic status.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Credit is allowed for only COM 235 or JUS 235 or SST 235 or WST 235 OR Visiting University Student
WST	270	Global Perspectives on Women	Through lectures, creative class activities and discussions, presents a comprehensive overview of gender and globalization with special emphasis on lived realities of women worldwide. Understands women's lives and gendered experiences through the issues of work, identities (nationality, race, class, age, ability), bodies and embodiment, belief systems, political economy and difference.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Credit is allowed for only WST 270 or WST 294 (Global Perspective on Women)
WST	276	U.S. Women's Movements	Historical survey of sources influential in the development of the feminist movement in the United States.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only AMS 276 or WST 276 OR Visiting University Student
WST	294	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	300	Women & Gender Contempory Soc	Advanced interdisciplinary examination of such topics as gender, intersectionality, media and representations, sexuality, politics, health, violence and feminism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): minimum 30 hours; Credit is allowed for only WST 100 or WST 300 OR Visiting University Student
WST	302	Hist of Black Women in America	Advanced examination of the challenges that black women have faced historically in America and how they have responded to those challenges socially, politically, economically, and culturally.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & H	Prerequisite(s): AFR 200 (or AFS 200) or WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 302 (or AFS 302) or HST 335 or WST 302
WST	313	Women and Sexuality	Explores U.S. women's sexuality in social context, including how women's sexuality is portrayed in popular media, medicine and education; how girls learn to think about sexuality; and how public policies address women's sexuality.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student

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Subject	Catalog Nbr	Course Title	Course Description	Allow Mult Enroll	Component Primary	Course Repeatable	Grading Basis	College	Department	Units	General Studies	Requirements
WST	320	Gender, Drugs and Alcohol	Drug and alcohol use have multiple and diverse meanings shaped by their historical, social and cultural context. Examines how and why alcohol and drug use have been identified as social problems and the role of gender in shaping this process. Reviews multiple social and cultural aspects of gender, drug and alcohol use, as well as the emergence of gender-based health disparities within this context. Fulfills a science and society requirement. Basic scientific principles such as the formulation of research questions, data collection and analysis, have been used to develop our understanding of gender, drugs and alcohol. How society influences the nature of those questions, the perceived value attached to particular scientific studies over others, and how to critically evaluate law and policy around drugs and alcohol in light of those studies.	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only WST 320 or WST 394 (Gender, Drugs and Alcohol) OR Visiting University Student
WST	330	Women, Film and Culture	Critical examination of the way films can reflect, reinforce or challenge mainstream cultural ideas about women.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only ENG 336 or WST 330 OR Visiting University Student
WST	331	Asian Pacific American Genders	In-depth exploration of gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & C	Prerequisite(s): ENG 101, 105, or 107 with C or better; APA 200 or APA 210 or minimum 24 hours; Credit is allowed for only APA 330 or WST 331 OR Visiting University Student
WST	333	Crit Perspectives on Sexuality	Examines critical theories of sexuality, including history, commerce, pleasure, LGBT issues, identity, medicalization of sexuality, disorders, sex crime, and pornography.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 45 hours OR Visiting University Student
WST	335	Gender, Race, & Sex in Sci Fi	Surveys the complex interrelationships of biomedical research and discourses of biological difference as reflected in science fiction. Explores such questions as: How have biological scientists explained human differences along axes of gender, race, class, sexuality? In what ways have these scientific discussions manifested themselves in science fiction?	N	LEC	N	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only APA 394 (Science Fiction Adventures Race/Gender) or WST 335 or WST 394 (Lost in Space: Gender, Race, & Sexuality in Sci Fi) OR Visiting University Student
WST	340	Gender, Science & Technology	In-depth examination of the complex interrelationships of gender, science, technology, and society in a number of different contexts. Looks at the participation of women in scientific and technical fields both historically and cross-culturally, and addresses such topics as: gender segregation by status and discipline, feminist theories of gender and science, the conditions under which women have succeeded in the sciences, gender and biological determinism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	341	Latin American Women Writers	In the 20th and 21st centuries, Latin America has seen a proliferation of literature published by women authors. While this explosion of the written word owes in part to changing socioeconomic factors and the opening of the international markets, Latin American women's literary history is often ignored in the canon. Examines the concepts of feminism through a Mexican framework, starting from the point of view of Mexican women theorizing about their own. This is not a history of feminism, but it does aim to highlight certain fundamental texts and key concepts of Mexico's history from the position of women writers, including feminism's critique of social structures beyond the bounds of gender relations.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only LAS 340 or WST 341
WST	345	Gender, Religion & Violence	In-depth study of forms of gendered violence in which religion plays a key role in either the practice or perpetuation of that form of violence in a myriad of cultures and contexts. Analyzes current responses and proposes new approaches to combating or redefining these forms of violence, emphasizing the need to understand and respect the religious and cultural contexts in which these actions occur.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Pre-requisites: WST 100, 300 or minimum 30 hours
WST	351	Gender and Hip Hop	Interrogates the history and global proliferation of hip hop as a set of cultural and consumer practices including music, dance, art, fashion, language and entrepreneurialism. Uses an intersectional approach to unpack hip hop's contributions to larger social discourses around race, gender, gender expression, sexuality, sexual identity and sexual expression, and youth culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): minimum 45 hours; Credit is allowed for only AFR 351 or AFR 394 (Gender and Hip Hop) or JUS 351 or JUS 394 (Gender and Hip Hop) or WST 351 or WST 394 (Gender and Hip Hop) OR Visiting University Student
WST	360	Women as Healers	Advanced examination of the role of women as caregivers, healers, physicians, midwives, and nurses in different cultures and historical periods.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours

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WST	364	Unruly Voices	In-depth study of African American women writers and how they (re)define female identities and engage a critical cross-cultural dialogue within the context of cultural history in the United States.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): AFR 200 (or AFS 200) or minimum 45 earned hours; Credit is allowed for only AFR 365 (or AFH364) or WST 364
WST	365	Women Int'l Health	Advanced study of gender-based disparities and global health, including impact of poverty, gender discrimination, political economy, and culture.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	G	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	370	Chronicling Women's Lives	Explores the lives of a selected group of American women as a point of departure for the chronicling of contemporary women's lives.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	371	Sex and the City	An in-depth study of the changing media representations of young, sexually autonomous women in the city.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	373	Latina/Chicana Issues	Critical examination of the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States and along the border.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) with C or better or minimum 30 hours. Credit is allowed for only TCL 373 or WST 373 OR Visiting University Student
WST	374	Desperate Housewives	In-depth examination of the representations of women as wives and/or mothers in the popular discourse from the 20th century to current day through an analysis of various forms of popular culture such as film, magazines, popular writing and television.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Minimum 30 hours; Credit is allowed for only WST 374 or 394 (Desp Housewives: Gender, Family & Pop Culture)
WST	375	Women & Social Change	In-depth course on feminist activism and social change. Combines research and theory on a contemporary social problem with a community action experience.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 (or WST 300) or minimum 30 hours
WST	376	Feminist Theory	Explores feminist theories and the intersection of gender, race, ethnicity, and class through critical analyses.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	H & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	377	History/Amer Feminist Thought	Critical analysis of the origins and development of American feminist thought and political movements.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	H & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours OR Visiting University Student
WST	378	Global Feminist Theory	In-depth studies of global feminist theories and exploration of the intersections of gender, race, ethnicity, class, and nation through critical analysis.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	L & G	Prerequisite(s): ENG 101, 105 or 107 with C or better; WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	380	Race, Gender, and Class	In-depth examination of how social inequalities are reproduced and perpetuated. Explores the intersections of race, class and gender in culture and society.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or WST 300 or minimum 30 hours; Credit is allowed for only AMS 380 or ETH 380 or WST 380 OR Visiting University Student
WST	382	American Indian Women	Investigate the economic, political and ideological factors contributing to American Indian women's intellectual and creative activities.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	C	Prerequisite(s): minimum 30 hours; Pre- or corequisite(s): AIS 180 or WST 100 or WST 300 with a C or better; Credit is allowed for only AIS 381 or WST 382
WST	390	Women, Gender and Religion	Examines the role of women and the construction and practice of gender identities across religious traditions and cultures.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; Credit is allowed for only REL 390 or WST 390 OR Visiting University Student
WST	394	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	407	Utopia/Dystopia:Sci Fi & Media	Five science fiction novels by female authors, along with many science fiction films, provide the lens through which students examine the socio-political, artistic and scientific contexts/concepts of utopian and dystopian novels and cinema.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours; Credit is allowed for only IAP 407 or WST 407 or IAP 394 (Utopia/Dystopia: Science Fiction and Media)
WST	408	Gender,Sexualities &Literacies	Presents diverse perspectives on gender, sexualities and literacies from preschool to adulthood. Focuses on race, ethnicities, sexual orientation and gender identities to provide overviews of current research on gender, sexualities and ethnicities and examines how these subjectivities are expressed in multiple modes of communication. Explores representations and performances of gender and sexualities through literacy practices in sociocultural and educational contexts. Explores related issues through textbook readings, videos, websites, activities, online discussions and projects.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): min 45 hrs; Cridt is allwd for only ENG 408 or WST 408 or ENG 494 (Gndr, Sexualities, & Lit) or ENG 598 (Gndr, Sexualities, & Lit) or MAS 598 (Gndr, Sexualities, & Li) or WST 494 (Gndr, Sexualities, & Lit) OR Visiting University Student
WST	413	Queer Studies	In depth exploration of lesbian, gay, bisexual, transgender, and queer experiences in the U.S. and globally, from an interdisciplinary perspective.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 with C or better or minimum 45 hours

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WST	415	Gender, Culture & Literacy	Explores the interactions and influences of gender and culture on literacy development and practice. Literacy is defined broadly as including the new literacies (e.g., blogs, wikis, zines or self publications) and multiliteracies (e.g., communication through oral, lyrical, visual, digital or written texts) within a broad view of what counts as text. Addresses varying feminist theories and perspectives on masculinities and gender in relation to literacy in home, school, community and work place settings. Participants explore their own written, digital and oral language practices through readings, videos, Web sites, Blackboard discussions, self-reflections, thought papers and action research essays.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit for only ENG 443 or ENG 494(Gender, Culture & Literacy) or MAS 598 (Gender, Culture & Literacy) or WST 415 or WST 494 (Gender, Culture & Literacy) OR Visiting University Student
WST	417	Masculinities/Femininities/Lit	Explores perspectives on and representations of masculinities and femininities in literacy development and practice. Addresses, beginning with adolescence, a time of identity exploration, feminist and gender perspectives in relation to oral language, reading, writing and electronic communications in home, school, community, education and work settings. Examines gender performance as a local/global issue. Explores the influence of gender on written, digital and oral language practices through textbook readings, videos, websites, self-reflections, thought papers and/or alternative format responses to weekly questions on the course materials, and Blackboard discussions.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): minimum 36 hours; Credit is allowed for only ENG 449 or ENG 494 (Masculinities, Femininities, and Literacies) or MAS 598 (Masculinities, Femininities, and Literacies) or WST 417 or WST 494 (Masculinities, Femininities, and Literacies)
WST	420	Women of Color in Film	An in-depth analysis of the history and representations of women of color in film and the film industry through the intersections of gender, race, sexuality, class, and nationalism.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or WST 300 or minimum 45 hours; Credit is allowed for only AFR 418 or WST 420
WST	421	Girlhood and Adolescence	Critical analysis of the changing construction of girlhood and female adolescence through history, memoir, fiction, myth, music, and media.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): WST 100 or 300 or minimum 30 hours OR Visiting University Student
WST	422	Women, Law, and Social Control	Examines social, economic, and legal factors that are relevant to mechanisms of social control of women, including formal legal control and informal control through violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only JUS 422 or WST 422
WST	428	Gender, Madness and Justice	Interrogates the interplay among gender, madness and justice; that is, the treatment of women and men within psychological discourses both individually and within the culture at large. Utilizes a feminist and social justice perspective to interrogate a variety of subjects related to the psychology of women and gender, including histories of madness, socialization, childhood, adolescence, intelligence, eating behavior, sexuality, queerness, violence, depression, therapy and activism.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	430	Gender on the Borderlands	Examines women's status in the U.S.-Mexico borderlands through key issues such as migration, labor, violence, education, and culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 24 hours OR WST 100 or 300 with C or better; Credit is allowed for only ETH 430 or LAS 430 or WST 430 or JHR 598 (Gender on the Borderlands)
WST	433	RaceSexualities:Social Justice	Investigates queer communities, social control and political resistance. Topics include collective responses to trauma/violence, heteronormativity, and variants of institutionalized racism and sexism. Gives special attention to race and sexuality intersections as well as the politics of coming out, LGBT activism, antiracist movements, the role of allies, and social movement strategies.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3		Prerequisite(s): ETH 100, WST 100, or HRC 200 with C or better OR ENG 102, 105, or 108 with C or better; min 36 hours; Credit is allowed for only ETH 433 or WST 433 or ETH 494(Race, Sexual, & Soc Justice Mvt) or WST 494(Race, Sexual, & Soc Justice Mvt)
WST	440	Politics of Women's Health	In-depth and interdisciplinary exploration of how women's social, cultural, and economic position affect their health and health care.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Pre-requisite: WST 100 or WST 300 or minimum 45 hours
WST	444	Gender, Health, and Bodies	Explores gender and health from a feminist perspective, including critical analyses of medicine, science, and popular culture.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB	Prerequisite(s): WST 100 or 300 with C or better; Credit is allowed for only MAS 598 (Gender, Health, and Bodies) or WST 444

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WST	447	Gender, Culture, & Development	In-depth analysis of gender roles related to health, family, work, education and politics in developing countries.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	(L or SB) & G	Prerequisite(s): ENG 101, 105 or 107 w/ C or better; WST 100 or 300 or minimum 45 hours; Credit is allowed for only SGS 454 or SOS 447 or TCL 447 or WST 447 or TCL 598 (Gender, Culture & Development) OR Visiting University Student
WST	449	Hate Speech/Manifestos	Examines writings, speeches and texts that provoke radical or even revolutionary social change. At its core, this course asks: What is the radical and what does it do? How do radical writings function as texts, speech acts, inspirational documents, testimonies, accounts of madness, frightening moments, calls to arms, peacekeeping entities or speaking truth to power? Examines injurious speech and provocative writings that span a range of social movements and topics, including radical feminism, radical queer, Black power, indigenous rights, art and performance, anti-technology, animal rights, violence, madness and revolutionary resistance.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): minimum 35 hours; minimum 2.50 GPA; Credit is allowed for only AMS 449 or ETH 449 or WST 449 or WST 394 (Hate Speech and Manifestos) OR Visiting University Student
WST	457	Women, Cultures, and Societies	Examines issues such as poverty, dependency, interdependency, race, class, and gender in different societies of the world.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	460	Women and the Body	In-depth analysis of the cultural construction of the gendered body and societal prescriptions about beauty, body image, and size.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	467	Ethnic Women Writers	Concentrates on selected women writers of the U.S. who are Native American, African American, Latina, and Asian-American.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & C	Prerequisite(s): WST 100 (or WST 300) with C or better; Credit is allowed for only ENG 460 or WST 467
WST	469	Abject Bodies & Politics Trash	Examines the possibilities inherent in "theorizing from the gutter"; looking at the world not from a lofty "Ivory Tower" but from the slime, the muck, the dumpster, the trash heap, the wasteland, the discarded and the downtrodden. Takes its theoretical framework from a radical 1960s manifesto called SCUM Manifesto by Valerie Solanas and from the French feminist philosophies of Julia Kristeva, who theorized the abject as a relationship with the grotesque that reveals the deep-seated fear of death. Uses these theoretical positions to examine trash, both abstractly and literally. Works through a variety of concepts ranging from actual trash, garbage, waste, toxic sludge, pollution and dirt, and tackles more abstract notions of trash such as the knowledge produced on the fringe in circuses, amusement parks, "trailer trash" zones, freak shows and the bodies of those marked as "Other" or different.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 36 hours; Credit is allowed for only AMS 469 or ETH 469 or JHR/MAS 598 (Abject Bodies and the Politics of Trash) or WST 469 OR Visiting University Student
WST	470	Gender and Popular Culture	Advanced interdisciplinary examination of how gender is constructed in various popular cultural forms such as film, television, magazines, and music.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Pre-requisites: WST 100 or WST 300 or minimum 45 hours
WST	471	Wmn's Int'l Human Rights	In-depth study of the core themes of a global movement for women's international human rights. Analyzes the historical evolution of the development of international human rights and women's rights within the United Nations and regional human rights systems.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): WST 100 or WST 300 or minimum 45 hours. Credit is allowed for only AFR 470 (or AFS 470) or AFR 494 (or AFS 494) (Women's International Human Rights) or AFR 598 (or AFS 598) (Women's International Human Rights) or WST 471
WST	473	Indigenous&Latina/Chicana Rep	Examines from an interdisciplinary perspective contemporary issues experienced by Indigenous and Chicana/Latina women in the U.S.	N	LEC	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only ETH 473 or LAS 473 or WST 473
WST	477	Gender and Violence	Critical examination of gender-based violence from societal, institutional and individual levels using intersectional and interdisciplinary perspectives.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	SB & C	Prerequisite(s): WST 100 or 300 or minimum 45 hours OR Visiting University Student
WST	483	Women Writers Across Cultures	Comparative approach to contemporary writings by women from around the world.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	HU & G	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student
WST	484	Internship	Structured practical experience following a contract or plan, supervised by faculty and practitioners.	Y	LEC	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	485	Women, Gender, and Leadership	Explores the gendered nature of leadership and studies strategies that enable women to lead successfully in areas such as business, education, and public service.	N	SEM	N	OPT	New College of Interdisciplinary Arts and Sciences	School of Humanities, Arts, and Cultural Studies	3	SB & C	Prerequisite(s): WST 100 or 300 with C or better OR Visiting University Student

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WST	490	Tmsbrdr Queer Performativity	Explores a rich and diverse body of border-crossing performative expression created by queer and/or Latino/a artists. Course readings and discussions include solo and collaborative works with an emphasis on solo autobiographical performance scripts as well as performer interviews and performance scholarship.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3	HU & C	Prerequisite(s): ENG 102, 105 or 108 with C or better; minimum 45 hours; Credit is allowed for only TCL 490 or WST 490
WST	492	Honors Directed Study	Independent study in which a student, under the supervision of a faculty member, conducts research or creative work that is expected to lead to an undergraduate honors thesis or creative project.	N	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6		Prerequisite(s): Barrett Honors student
WST	493	Honors Thesis	Supervised research or creative activity focused on preparation and completion of an undergraduate honors thesis or creative project.	N	RSC	N	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-6	L	Prerequisite(s): Barrett Honors student; ENG 101, 105, or 107 with C or better
WST	494	Special Topics	Covers topics of immediate or special interest to a faculty member and students.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	498	Pro-Seminar	Small-group study and research for advanced students within their majors.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-7	L	Pre-requisites: WST 100 or 300 with C or better; ENG 101 or ENG 107 or ENG 105; Majors only
WST	499	Individualized Instruction	Provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autonomous basis.	Y	IND	Y	GNA	The College of Liberal Arts and Sciences	School of Social Transformation	1-3		
WST	501	Foundational Feminist Thought	Provides key concepts and theories that have shaped the field of women and gender studies. Also provides overview of resources for research in women's studies scholarship at ASU and prepares students to participate in the field.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 501 or WST 691 (Foundations of Fem Thought)
WST	502	Gender Research Methodologies	Describes the ways in which feminist scholars conceptualize and design their research. Explores the decisions scholars make in their research including the choice of research topics, applications of feminist theories and methodologies, the choice of methods and how and why feminist scholars have increasingly incorporated interdisciplinary methods, and what is at stake in these decisions for the research design and research outcomes.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WST	590	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	591	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: degree-seeking graduate students only
WST	592	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a thesis or dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	593	Applied Project	Preparation of a supervised applied project that is a graduation requirement in some professional majors.	Y	LEC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	LEC	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
WST	598	Special Topics	Topical courses not offered in regular course rotation—e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-4		
WST	599	Thesis	Supervised research focused on preparation of thesis, including literature review, research, data collection and analysis, and writing.	N	LEC	N	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	601	Critical Concepts of Gender	Key concepts, theoretical frameworks, disciplinary and interdisciplinary approaches, and the critical debates that have shaped the field of gender studies.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: degree-seeking graduate students only
WST	602	Mapping Intersections Gender	Theoretical concepts, metaphors, and frameworks employed by feminist scholars to understand the way gender articulates with other categories of difference.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	603	Engendering Methodology	Focuses on the methodologies, epistemologies, and ethical dilemmas of researching gender.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only

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WST	615	Masculinities	Explores the theoretical concepts, frameworks and disciplinary and interdisciplinary approaches that have accompanied the emerging analysis of masculinity studies as a field. Interrogates the ways in which masculinities have been defined in relation to femininities and other institutionalized constructions of difference, and how these definitions have contributed to material conditions and specific socio-historical contexts in which gendered bodies are included or excluded, privileged or disadvantaged, taken for granted or contested. Considers the articulations and contestations of diverse masculinities as expressed through gender, race, sex, ethnicity, sexuality, kinship, politics, popular culture, economics, nationalism, science and medicine, and violence.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 615 or WST 691 (Masculinities)
WST	620	Advanced Feminist Theory	Concentrates on transnational feminist theory and its intersections with queer theory, postcolonial theory, and critical race theory. Also looks at the ways in which (or indeed, whether) academic discourses have anything useful to say about the worlds in which we live. Among the questions we'll need to have constantly in our minds are: In what ways has feminist theorizing changed over time? Does transnational feminist theory challenge or even undermine previous feminist theoretical discussions or the perspectives you might be familiar with from your undergraduate days? What kinds of engagements do our authors have with theorists in other areas (queer studies, postcolonial studies, critical race theory)? Can you discern any sort of new feminist grand narrative emerging from these works? In what ways might our authors' perspectives help you conceptualize and contextualize your own work?	N	SEM	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only WST 620 or WST 691 (Feminist Theory) or WST 791 (Feminist Theory)
WST	640	Visual & Narrative Culture	Feminist analysis of gender representations in visual and narrative culture, including film, dramatic literature, fiction, and autobiography.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	690	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	691	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	701	Resrch Design & Prop Dev	Prepares students for careers in gender studies by developing skills in research design, proposal writing, and identifying funding outlets.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	3		Pre-requisites: Degree-seeking graduate students only
WST	790	Reading and Conference	Independent study in which a student meets regularly with a faculty member to discuss assignments. Course may include such assignments as intensive reading in a specialized area, writing a synthesis of literature on a specified topic, or writing a literature review of a topic.	Y	IND	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		
WST	791	Seminar	A small class emphasizing discussion, presentations by students, and written research papers.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	School of Social Transformation	1-12		Pre-requisites: Degree-seeking graduate students only
WST	792	Research	Independent study in which a student, under the supervision of a faculty member, conducts research that is expected to lead to a specific project such as a dissertation, report, or publication. Assignments might include data collection, experimental work, data analysis, or preparation of a manuscript.	Y	RSC	Y	Z1	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		
WST	795	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	IND	Y	Z3	The College of Liberal Arts and Sciences	School of Social Transformation	1		
WST	799	Dissertation	Supervised research focused on preparation of dissertation, including literature review, research, data collection and analysis, and writing.	Y	RSC	Y	Z2	The College of Liberal Arts and Sciences	School of Social Transformation	1-15		

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WWS	460	World War II	Explores the causes, conduct and consequences of World War II. When did World War II start? How was it fought, and what did that mean for soldiers, the homefront and millions of civilians in Japanese or German occupied regions? What did the world that emerged in its wake look like? The course explores these fundamental questions with an emphasis on multiple explanations of the causes of the war in Asia and Europe and the contingency of Allied victory. Explores the war as both a total and a global war in which perceptions of race, class and gender shaped the experience of combatants and noncombatants, many of whom died in indiscriminate bombing campaigns. Racial ideologies also led to the brutalization of soldiers, which in turn fueled the violence against civilians, as exemplified by the Holocaust and Japanese war crimes. Finally, the course turns to the global order emerging after the war and the different narratives that emerged from it.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3	HU & H & G	Prerequisite(s): minimum 45 hours; Credit is allowed for only HST 460 or WWS 460 or HST 494 (World War II Studies) or HST 494 (Introduction to World War II Studies) OR Visiting University Student
WWS	561	Decision Points I	In-depth analysis of the origins, impact and controversies over the key decisions related to the beginning and early years of World War II, with an emphasis on the contingent nature of historical events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	562	Decision Points II	In-depth analysis of the origin, impact and controversies over the key decisions related to the later years and the ending of World War II, with an emphasis on the contingent nature of historical events.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	563	The Lived Experience of WWII	Using the vast oral history collection of the National World War II Museum in New Orleans, Louisiana, this course examines how individuals experienced the war. A number of factors shaped how people experienced the war—whether one was a soldier, non-combatant, resistor or collaborator. Focuses on how ordinary people made sense of their experiences during the war. In addition, students explore the theory and practice of collecting and using oral histories.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	564	The Global War	Examines the global dimensions of World War II with particular focus on those regions which have been deemphasized in Western historical discourse.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	566	World War II Today	Analyzes the impact and legacy of World War II, with an emphasis on the roots of contemporary problems and issues. A global conflict that impacted millions of people, World War II fundamentally reshaped the political and cultural landscape of our planet. Explores the new global order that emerged after the end of World War II in 1945. While the war had immediate impacts in the postwar era, the legacy of the war continues to inform current conflicts across the globe and resonates in the current social and political order. This is especially apparent in how contemporary narratives situate, remember and memorialize the war. Uses themes to help us think historically and uncover the historical roots of the present order.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): WWS 561; WWS 562
WWS	567	World War II in Film	Offers a comprehensive survey of how film has represented the Second World War. Using a transdisciplinary approach, studies how films from the time of the Second World War to the present have portrayed that conflict. Compares different perspectives on the causes and results of the war, as well as engage in analysis of how important issues such as international political and economic relationships, religion, gender, ethnicity, class, race, technology and the psychological effects of violence get shown in movies about World War II.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 567 or FMS 567 or WWS 567
WWS	568	World War II in Literature	Explores the topic of World War II across fiction, non-fiction, film and other film genres. Focus areas and topics of literature covered in the course may vary from semester to semester, depending upon instructor preference.	N	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student; Credit is allowed for only ENG 568 or WWS 568
WWS	569	Memory and Monuments	Focuses on the historical memory of World War II by examining the processes of commemoration, monument building, and memorialization. Through theoretical texts and case studies, students explore how societies remember and forget and how they create collective memory.	N	LEC	N	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	580	Practicum	Structured practical experience in a professional program, supervised by a practitioner or faculty member with whom the student works closely.	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student

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WWS	591	Seminar	A small class emphasizing discussion, presentations by students and written research papers.	Y	SEM	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-12		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	595	Continuing Registration	Used in situations where registration is necessary but where credit is not needed. Replaces arbitrary enrollment in reading and conference, research, thesis, dissertation, etc. Used by students when taking comprehensive examinations, defending theses or dissertations, or fulfilling the continuous enrollment requirement in doctoral programs. Credit is not awarded, and no grade is assigned.	Y	RSC	Y	Z3	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1		Prerequisite(s): degree- or nondegree-seeking graduate student
WWS	597	Capstone	Students draw on the experiences, skills and competencies they developed throughout the WWII Studies MA program to generate a digital portfolio that showcases the breadth and depth of their MA experience. Students refine and extend work they produced in previous WWS courses and also develop reflective essays that critically assess their performance in the program, as well as essays that articulate the transferable value of the degree to potential employers or admissions committee members. Through required components in the portfolio students demonstrate competency in source analysis, comparative analysis and argumentation, as well as the ability to effectively communicate to scholarly and public audiences.	N	LEL	N	GNA	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	3		Prerequisite(s): 21 hours of 500-level courses with C or better including WWS 561; WWS 562; WWS 563; WWS 566
WWS	598	Special Topics	Topical courses not offered in regular course rotation (e.g., new courses not in the catalog, courses by visiting faculty, courses on timely topics, highly specialized courses responding to unique student demand).	Y	LEC	Y	OPT	The College of Liberal Arts and Sciences	Historical, Philosophical & Religious Studies, Sch	1-4		Prerequisite(s): degree- or nondegree-seeking graduate student